

**Agenda Item:** 10

**Source:** LGIC

**Title:** CR to 25.321 on MAC Function Table

**Document for:** Decision

---

#### 1. Overview

This contribution proposes the modification of table listing the MAC functions between different transport channels. The table shows the MAC functions corresponding to the transport channels.

#### 2. Proposed change to 25.321

---

## 6 Functions

### 6.1 Description of the MAC functions

The functions of MAC include:

- Mapping between logical channels and transport channels.
- Selection of appropriate Transport Format for each Transport Channel depending on instantaneous source rate
- Priority handling between data flows of one UE
- Priority handling between UEs by means of dynamic scheduling
- Priority handling between data flows of several users on the the DSCH and FACH
- Scheduling of broadcast, paging and notification messages
- Identification of UEs on common transport channels
- Multiplexing/demultiplexing of higher layer PDUs into/from transport blocks delivered to/from the physical layer on common transport channels
- Multiplexing/demultiplexing of higher layer PDUs into/from transport block sets delivered to/from the physical layer on dedicated transport channels
- Traffic volume monitoring
- Monitoring the links of the assigned resources
- Routing of higher layer signalling
- Maintenance of a MAC signalling connection between peer MAC entities
- Dynamic Transport Channel type switching
- Ciphering for transparent RLC

The following potential functions is regarded as further study items:

- Processing of messages received at common control channels
- Successive Transmission on RACH
- Access Service Class selection for RACH transmission.

## 6.2 Relation between MAC Functions ~~and~~ -Transport Channels ~~and UE~~

	<u>SCCH</u>	<u>BCCH</u>	<u>PCCH</u>	<u>CCCH</u>	<u>CCCH</u>	<u>DCCH/DTCH</u>	<u>DCCH/DTCH</u>	<u>DCCH/DTCH</u>	<u>DCCH/DTCH</u>	<u>DCCH/DTCH</u>	<u>DCCH</u>	<u>CTCH</u>	<u>DCCH/DTCH</u>
	<u>SCH( Note1)</u>	<u>BCH</u>	<u>PCH</u>	<u>RACH</u>	<u>FACH</u>	<u>RACH</u>	<u>FACH</u>	<u>CPCH( Note2)</u>	<u>DSCH</u>	<u>DCH</u>	<u>FAUSCH</u>	<u>FACH</u>	<u>USCH( Note1)</u>
<u>Mapping between logical channels and transport channels.</u>	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Selection of appropriate Transport Format for each Transport Channel depending on instantaneous source rate</u>				X	X	X	X		X(Note 3)	X			
<u>Priority handling between data flows of one UE (Note4)</u>				X	X	X	X		X	X			
<u>Priority handling between UEs by means of dynamic scheduling</u>					X		X		X				
<u>Priority handling between data flows of several users on the DSCH and FACH (Note5)</u>					X		X		X				
<u>Scheduling of broadcast, paging and notification messages</u>		X	X										
<u>Identification of UEs on common transport channels</u>						X	X	X	X				
<u>Mux/Demux of higher layer PDUs into/from transport blocks delivered to/from the physical layer on common transport channels</u>				X	X	X	X	X	X			X	X
<u>Mux/Demux of higher layer PDUs into/from transport block sets delivered to/from the physical layer on dedicated transport channels</u>										X			
<u>Traffic volume monitoring</u>						X	X	X	X	X			X
<u>Monitoring the links of the assigned resources (Note6)</u>													
<u>Routing of higher layer signalling (Note6)</u>													
<u>Maintenance of a MAC signalling connection between peer MAC entities (Note6)</u>													
<u>Dynamic Transport Channel type switching</u>						X	X	X	X	X			X
<u>Ciphering for transparent RLC</u>										X			

**Table 6.2.1 MAC functions and transport channels**

(Note1) TDD only

(Note2) FDD only

(Note3) Code allocation

(Note4) Priority handling can be taken into account in TF selection

(Note5) It is not included in TS 25.301

(Note6) TDD only

(Note7) ODCCH, OCCCH, ODTCH mapped to ORACH, ODCCH and ODTCH mapped to ODCH are not included in table.

The following potential functions regarded as further study items are not included in the table:

- Processing of messages received at common control channels
- Successive Transmission on RACH
- Access Service Class selection for RACH transmission.

## 6.2.1 Relation between MAC Functions and Transport Channels

Associated MAC Functions	Logical Ch	Transport Ch	TF Selection	Priority handling between users	Priority handling (one-user)	Scheduling	Identification of UEs	Mux/Demux on common transport CH	Mux/Demux on dedicated transport CH	Dynamic transport CH switching
Uplink (Rx)	CCCH	RACH						X		
	DCCH	RACH					X	X		
	DCCH	CPCH					X	X		X
	DCCH	DCH							X	
	DTCH	RACH					X	X		
	DTCH	CPCH					X	X		X
Downlink (Tx)	DTCH	DCH							X	
	SCCH	SCH								
	BCCH	BCH				X				
	PCCH	PCH				X				
	CCCH	FACH		X				X		
	DCCH	FACH		X			X	X		
	DCCH	DSCH		X				X		
	DCCH	DCH	X		X				X	
	DTCH	FACH	X(note1)	X			X	X		X
DTCH	DSCH	X(note2)	X				X		X	
DTCH	DCH	X		X				X	X	

Table 1 UTRAN MAC functions corresponding to the transport channel (note3)

(Note1) On FACH channel, the transport format set is limited.

(Note2) Whether DSCH has the transport format set is under discussion.

(Note3) The functions not included in the table are listed below.

- Mapping between logical channels and transport channels.
- Traffic volume monitoring
- Constrained execution of open loop power control algorithms

Further, the following additional functions are not included yet in the table:

- Routing of higher layer signalling
- Maintenance of a MAC signalling connection between peer MAC entities
- Monitoring the links of the assigned resources
- Processing of messages received at common control channels

Note ( this table has to be reviewed )

## 6.2.2 Relation of UE MAC functions corresponding to the Transport Channel MAC Functions and Transport Channels

Functions	Logical Ch	Transport Ch	TF Selection	Priority handling data of one user	Identification	Mux/Demux on common transport channels	Mux/Demux on dedicated transport channels	Dynamic transport channel type switching
Uplink (Tx)	CCCH	RACH				X		
	DCCH	RACH	X(note1)		X	X		
	DCCH	CPCH	X	X	X	X		X
	DCCH	DCH	X	X			X	
	DTCH	RACH	X(note1)		X	X		X
	DTCH	CPCH	X	X	X	X		X
	DTCH	DCH	X	X			X	X
Downlink (Rx)	SCCH	SCH						
	BCCH	BCH						
	PCCH	PCH						
	CCCH	FACH				X		
	DCCH	FACH			X	X		
	DCCH	DSCH				X		
	DCCH	DCH					X	
	DTCH	FACH			X	X		
DTCH	DSCH				X			
DTCH	DCH					X		

Table 2 UE MAC functions corresponding to the transport channel

(Note1) The RACH channel has the limited transport format set.

Note: This table has to be reviewed