OpenAirInterface

MAC

SAP Design Specification

# Document Revision History

|  |  |  |  |
| --- | --- | --- | --- |
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| Paul | 2015/11/04 | 0.0 | Add RRC example SAP |
| Tim | 2015/12/02 | 1.0 | [Add Sample for ifdef Rel 10](#_5.1.4_ifdefine_Rel) |
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# 1 Reference

|  |  |  |  |
| --- | --- | --- | --- |
| Spec. | Release /Version | page | Related work |
| 3GPP 36.321 | Release v8.6 |  |  |
| 3GPP 36.321 | Release v13.2 |  |  |
|  |  |  |  |
|  |  |  |  |

Related work will be the chapter in this document.

# 2 Introduction

## 2.1 Abbreviations

|  |  |
| --- | --- |
| Term | Definition |
| MAC | Media access control |
| RRC | Radio Resource Control |
| PDCP | Packet Data Convergence Protocol |
| RLC | Radio Link Control |
| PHY | Physical layer |
|  |  |

## 2.2 Overview

Figure 1.1 shows the primitives implemented in the MAC layer and the SAPs to RRC, RLC, PHY layers

In this chapter, need to point out :

1. Other layers that is connected with MAC layer

2. The upper or lower relationship between layers

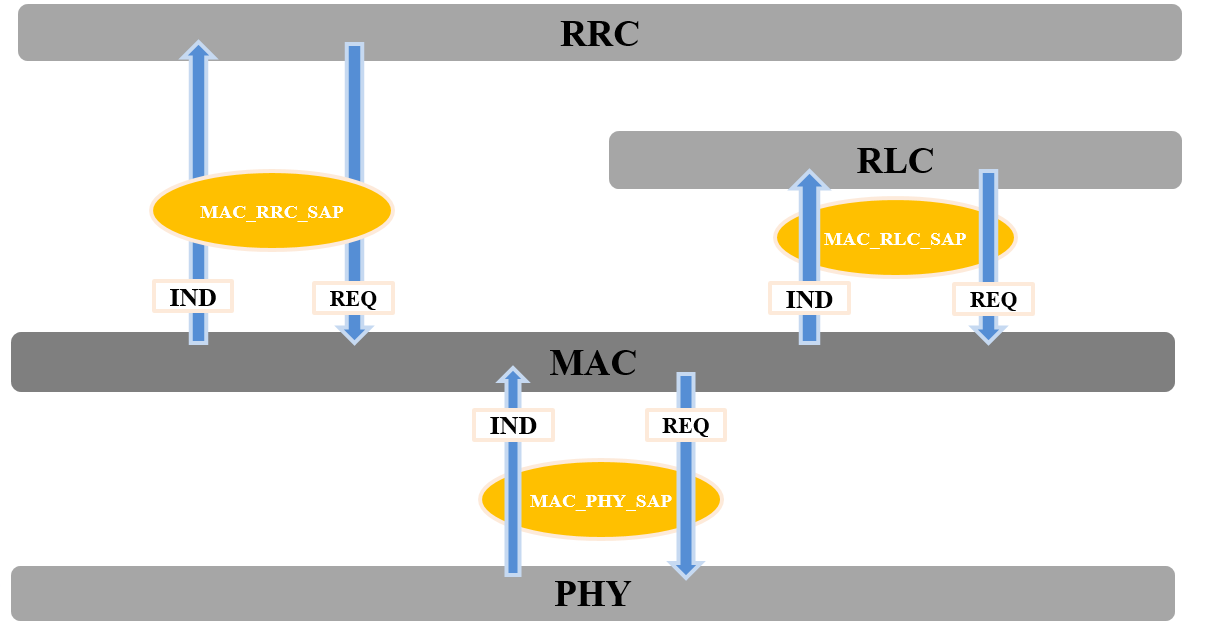
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Fig. 1.1 Primitives and SAPs for MAC layer.

# 3 Primitives

|  |  |  |
| --- | --- | --- |
| Primitive | Direction | Document |
| **MAC\_RRC SAP** | | |
| mac\_rrc\_data\_req() | RRC🡪MAC | openair\_rrc\_L2\_interface.c |
| rrc\_mac\_config\_req() | RRC🡪MAC | openair2/layer2/mac/Config.c |
| mac\_rrc\_data\_ind() | MAC🡪RRC | openair\_rrc\_L2\_interface.c |
| mac\_eNB\_get\_rrc\_status() | MAC🡪RRC | openair\_rrc\_L2\_interface.c |
| **MAC\_RLC SAP** | | |
| mac\_rlc\_data\_req() | RLC 🡪 MAC | Rlc/Rlc\_mac.c |
| mac\_rlc\_data\_ind() | MAC 🡪 RLC | Rlc/Rlc\_mac.c |
| mac\_rlc\_status\_ind() | MAC 🡪 RLC | Rlc/Rlc\_mac.c |
| **MAC\_PHY SAP** | | |
| eNB\_dlsch\_ulsch\_scheduler() | PHY 🡪 MAC | openair2/Phy\_interface/defs.h |
| initiate\_ra\_proc() | PHY 🡪 MAC | openair2/Phy\_interface/defs.h |
| fill\_rar() | PHY 🡪 MAC | openair2/Phy\_interface/defs.h |
| cancel\_ra\_proc() | PHY 🡪 MAC | openair2/Phy\_interface/defs.h |
| phy\_config\_sib2\_eNB() | MAC 🡪 PHY | openair1/phy/init/Lte\_init.c |
| rx\_sdu() | PHY 🡪 MAC | openair2/Phy\_interface/defs.h |
| get\_dlsch\_sdu() | MAC 🡪 PHY | openair2/Phy\_interface/defs.h |
| get\_dci\_suu() | MAC 🡪 PHY | openair2/Phy\_interface/defs.h |
| phy\_config\_dedicated\_eNB() | MAC 🡪 PHY | openair2/Phy\_interface/defs.h |

Table 3.1 MAC SAP Primitives

|  |  |
| --- | --- |
| **Data Type (Definition in OAI)** | **Declaration in C** |
| uint8\_t | unsigned char |
| int8\_t | signed char |
| uint16\_t | unsigned short |
| int16\_t | short |
| uint32\_t | unsigned int |
| int32\_t | int |
| rb\_id\_t | unsigned int |
| eNB\_flag\_t | signed char |
| sub\_frame\_t | unsigned int |
| module\_id\_t | unsigned char |
| frame\_t | unsigned long int |
| rnti\_t | unsigned short |
| **ASN.1** | |
| LogicalChannelConfig\_t | typedef struct LogicalChannelConfig |
| measGapConfig | typedef struct MeasGapConfig |
| TDD\_Config\_t | typedef struct TDD\_Config |
| MobilityControlInfo\_t | typedef struct MobilityControlInfo |
| struct MBSFN\_SubframeConfigList | typedef struct MBSFN\_SubframeConfigList |
| MBSFN\_AreaInfoList\_r9\_t | typedef struct MBSFN\_AreaInfoList\_r9 |
| PMCH\_InfoList\_r9\_t | typedef struct PMCH\_InfoList\_r9 |
| RadioResourceConfigCommonSIB\_t | typedef struct RadioResourceConfigCommonSIB |
| physicalConfigDedicated | typedef struct PhysicalConfigDedicated |
| ARFCN\_ValueEUTRA\_t | long |
| AdditionalSpectrumEmission\_t | long |
| SCellToAddMod\_r10\_t | typedef struct SCellToAddMod\_r10 |

Table 3.2 Data Type in MAC SAP Primitives

## 3.1 mac\_rrc\_data\_req ()

### 3.1.1 Description

RRC have data to transmit to MAC layer according to different logical channels for NB-IoT.

### 3.1.2 Direction

RRC🡪MAC

### 3.1.3 Source

openairinterface5g\openair2\rrc\l2\_interface

### 3.1.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| Mod\_idP | Virtualized module identifier | module\_id\_t |
| CC\_id | Component carrier ID | int |
| frameP | Index of frame | frame\_t |
| Srb\_id | Index of Srb | rb\_id\_t |
| buffer\_pP | Pointer to received SDU | uint8\_t |
| enb\_flagP | Flag to indicate eNB or UE | eNB\_flag\_t |
| eNB\_index | Valid for UE indicating the index of connected eNB(s) | uint8\_t |
| **else** | | |
| Nb\_tb | Transport block | uint8\_t |
| mbsfn\_sync\_area | MBSFN sync area index | uint8\_t |

### 3.1.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| sizeof\_SIB1 | SIB1 size | uint8\_t |
| sizeof\_SIB23 | SIB23 size | uint8\_t |
| Sdu\_size | SDU size | uint8\_t |
| sizeof\_MCCH\_MESSAGE | MCCH size | uint8\_t |
| Ret\_size | Payload size | char |

## 3.2 rrc\_mac\_config\_req( )

### 3.2.1 Description

RRC transmit configuration parameter to MAC layer.

### 3.2.2 Direction

RRC 🡪 MAC

### 3.2.3 Source

openairinterface5g\openair2\layer2\mac \config.c

### 3.2.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| Mod\_id | Virtualized module identifier | uint8\_t |
| CC\_id | Component carrier ID | int |
| eNB\_flagP | Flag to indicate eNB or UE | eNB\_flag\_t |
| rntiP | UE RNTI number | uint16\_t |
| eNB\_index | valid for UE indicating the index of connected eNB(s) | uint8\_t |
| *\*RadioResourceConfigCommonSIB-NB* | Configuration parameter of radio Resource Config Common | RadioResourceConfigCommonSIB\_t |
| *PhysicalConfigDedicated-NB* | Configuration parameter for physical Config Dedicate | physicalConfigDedicated |
| *\*MAC-MainConfig-NB* | Configuration parameter for UE Mac main config | MAC\_MainConfig\_t |
| logicalChannelIdentity | If DRB-ToAddMod-NB-r13  =>Logic channel ID | LogicalChannelConfig\_t |
| *\*LogicalChannelConfig-NB* | Configuration parameter for logical channel | MAC\_MainConfig\_t |
| \*SIwindowsize | Length of SI window | uint8\_t |
| \*SIperiod | Period of SI message | uint16\_t |
| \*ul\_CarrierFreq | Uplink carried frequency | long |
| \*additionalSpectrumEmission | Additional spectrum emission | long |
| **else** | | |
| \*\*measObj | Measurement object to be added | MeasObjectToAddMod\_t |
| \*measGapConfig | Configuration parameter for measurement gap | MeasGapConfig\_t |
| \*tdd\_Config | Configuration parameter for TDD config | TDD\_Config\_t |
| \*mobilityControlInfo | Mobility control info received for Handover | MobilityControlInfo\_t |
| \*ul\_Bandwidth | Uplink bandwidth | long |
| \*mbsfn\_SubframeConfigList | List of MBSFN subframe config | struct MBSFN\_SubframeConfigList |
| \*sCellToAddMod\_r10 | Small cell to be added | SCellToAddMod\_r10\_t |
| MBMS\_Flag | Flag of MBMS | uint8\_t |
| \*mbsfn\_AreaInfoList | MBSFN area information list | MBSFN\_AreaInfoList\_r9\_t |
| \*pmch\_InfoList | PMCH information list | PMCH\_InfoList\_r9\_t |
| num\_active\_cba\_groups | Number of active CBA groups | uint8\_t |
| cba\_rnti | The RNTI of CBA | uint16\_t |

### 3.2.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 3.3 mac\_rrc\_data\_ind( )

### 3.3.1 Description

RRC receive data from different logical channel (MCCH, BCCH, CCCH) for NB-IoT.

### 3.3.2 Direction

MAC 🡪 RRC

### 3.3.3 Source

openairinterface5g\openair2\rrc\l2\_interface.c

### 3.3.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data Type |
| module\_idP | Virtualized module identifier | uint8\_t |
| CC\_idP | Component carrier ID | int |
| frameP | NB-IoT frame number | uint32\_t |
| subframeP | NB-IoT subframe number | uint32\_t |
| rntiP | Radio Network Temporary Identifier | uint16\_t |
| srb\_idP | Index of Srb | rb\_id\_t |
| \*sduP | Pointer of received Service data unit | uint8\_t |
| sdu\_lenP | Service data unit length | int32\_t |
| eNB\_flagP | Flag to indicate eNB or UE | eNB\_flag\_t |
| eNB\_indexP | valid for UE indicating the index of connected eNB(s) | uint8\_t |
| **else** | | |
| mbsfn\_sync\_area | MBSFN sync area index | uint8\_t |

### 3.3.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 3.4 mac\_eNB\_get\_rrc\_status( )

### 3.4.1 Description

MAC get status of UE from RRC.

### 3.4.2 Direction

MAC 🡪 RRC

### 3.4.3 Source

openairinterface5g\openair2\rrc\l2\_interface.c

### 3.4.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data Type |
| module\_idP | Virtualized module identifier | uint8\_t |
| rntiP | Radio Network Temporary Identifier | uint16\_t |
| **else** | | |
| N/A | N/A | N/A |

### 3.4.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| RRC\_status | Know if in RRC\_CONNECTED | int |

## 3.5 mac\_rlc\_data\_req()

### 3.5.1 Description

Interface with MAC layer, map data request to the RLC corresponding to the radio bearer

### 3.5.2 Direction

RLC 🡪 MAC

### 3.5.3 Source

openairinterface5g\openair2\LAYER2\RLC\Rlc\_mac.c

### 3.5.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data type |
| mod\_idP | Virtualized module identifier | uint8\_t |
| rntiP | UE identifier | uint16\_t |
| eNB\_index | Index of corresponding eNB/CH | eNB\_index\_t |
| frameP | Frame index | uint32\_t |
| enb\_flagP | Flag to indicate eNB (1) or UE (0) | eNB\_flag\_t |
| channel\_idP | Which logical channel MAC want to use | unsigned int |
| \*buffer\_pP | Memory area to fill with the bytes requested by MAC  Put MAC transport channel buffer to this parameter | char |
| **else** | | |
| MBMS\_flagP | Flag to indicate whether this is the MBMS service (1) or not (0) | MBMS\_flag\_t |

### 3.5.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| ret\_tb\_size | Transport block size | tbs\_size\_t |

## 3.6 mac\_rlc\_data\_ind( )

### 3.6.1 Description

Interface with MAC layer and RLC layer deserialize the transport blocks sent by MAC, then map data indication to the RLC instance corresponding to the radio bearer identifier

### 3.6.2 Direction

MAC 🡪 RLC

### 3.6.3 Source

openairinterface5g\openair2\ Rlc\Rlc\_mac.c

### 3.6.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data type |
| mod\_idP | Virtualized module identifier | uint8\_t |
| rntiP | UE identifier | uint16\_t |
| eNB\_index |  | uint8\_t |
| frameP | Frame index | uint32\_t |
| enb\_flagP | Flag to indicate eNB (1) or UE (0) | eNB\_flag\_t |
| channel\_idP | Channel identifier | unsigned int |
| \*buffer\_pP | Memory area to fill with the bytes requested by MAC | char |
| tb\_sizeP | Size of a transport block in bits | int32\_t |
| num\_tbP | Number of transport blocks | unsigned int |
| \*crcs\_pP | Array of CRC decoding | unsigned int |
| **else** | | |
| MBMS\_flagP | Flag to indicate whether this is the MBMS service (1) or not (0) | MBMS\_flag\_t |

### 3.6.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 3.7 mac\_rlc\_status\_ind()

### 3.7.1 Description

Interface with MAC layer and RLC layer for NB-IoT, request and set the number of bytes scheduled for transmission by the RLC instance corresponding to the radio bearer identifier

### 3.7.2 Direction

MAC 🡪 RLC

### 3.7.3 Source

openairinterface5g\openair2\ Rlc\Rlc\_mac.c

### 3.7.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data Type |
| mod\_idP | Virtualized module identifier | uint8\_t |
| rntiP | UE identifier | uint16\_t |
| eNB\_index | Index of eNB | uint8\_t |
| frameP | Frame index | uint32\_t |
| enb\_flagP | Flag to indicate eNB (1) or UE (0) | eNB\_flag\_t |
| channel\_idP | Channel identifier | unsigned int |
| tb\_sizeP | Size of a transport block in bits | int32\_t |
| **else** | | |
| MBMS\_flagP | Flag to indicate whether this is the MBMS service (1) or not (0) | MBMS\_flag\_t |

### 3.7.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| mac\_rlc\_status\_resp | Status response by rlc | Structure of  mac\_rlc\_status\_resp\_t |

## 3.8 eNB\_dlsch\_ulsch\_scheduler()

### 3.8.1 Description

Function to trigger the eNB scheduling procedure

### 3.8.2 Direction

PHY → MAC

### 3.8.3 Source

openairinterface5g-FieldTestVersion\openair2\LAYER2\MAC\eNB\_scheduler.c

### 3.8.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| Mod\_id | Virtualized module identifier | uint8\_t |
| cooperation\_flag | Flag to indicated that this cell has cooperating nodes | uint8\_t |
| frameP | Index to current frame | frame\_t |
| subframeP | Index to current sub-frame | sub\_frame\_t |
| **else** | | |
| N/A | N/A | N/A |

### 3.8.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 3.9 initiate\_ra\_proc()

### 3.9.1 Description

Indicate a received preamble on PRACH. It initiates the RA procedure.

### 3.9.2 Direction

PHY 🡪 MAC

### 3.9.3 Source

openairinterface5g-FieldTestVersion\openair2\LAYER2\MAC\eNB\_scheduler\_RA.c

### 3.9.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| module\_idP | Virtualized module identifier | module\_id\_t |
| CC\_id | Component carrier ID | int |
| frameP | Index of frame | frame\_t |
| preamble\_index | index of the received RA request | uint16\_t |
| timing\_offset | Offset in samples of the received PRACH | int16\_t |
| **else** | | |
| subframeP | Index of current subframe | sub\_frame\_t |

### 3.9.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 4.1 fill\_rar()

### 4.1.1 Description

Fill random access response sdu, passing timing advance, and returns the t-CRNTI.

### 4.1.2 Direction

PHY 🡪 MAC

### 4.1.3 Source

openairinterface5g-FieldTestVersion\openair2\LAYER2\MAC\rar\_tools.c

### 4.1.4 Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **If define NBIoT\_R13** | | | |
| **Parameter** | **Description** | | **Data Type** |
| module\_idP | Virtualized module identifier | | module\_id\_t |
| CC\_id | Component carrier ID | | int |
| frameP | Index of frame | | frame\_t |
| dlsch\_buffer | Pointer to DLSCH input buffer | | uint8\_t |
| N\_RB\_UL | Number of UL resource blocks | | uint16\_t |
| **else** | | | |
| input\_buffer\_length | PDU buffer size | uint8\_t | |

### 4.1.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| rnti | TC-RNTI | rnti\_t |

## 4.2 cancel\_ra\_proc()

### 4.2.1 Description

Cancel an ongoing RA procedure. Indicate a failed RA response. It removes all temporary variables related to the initial connection of a UE.

### 4.2.2 Direction

PHY 🡪 MAC

### 4.2.3 Source

openairinterface5g-FieldTestVersion\openair2\LAYER2\MAC\eNB\_scheduler\_RA.c

### 4.2.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| module\_idP | Virtualized module identifier | module\_id\_t |
| CC\_id | Component carrier ID | int |
| frameP | Index of frame | frame\_t |
| rnti | RNTI of UE transmitting the SR | rnti\_t |
| **else** | | |
| N/A | N/A | N/A |

### 4.2.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 4.3 phy\_config\_sib2\_eNB()

### 4.3.1 Description

Configure LTE\_DL\_FRAME\_PARMS with components of SIB2 (at eNB).

### 4.3.2 Direction

MAC → PHY

### 4.3.3 Source

openairinterface5g\openair1\phy\init\Lte\_init.c

### 4.3.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| Mod\_id | Virtualized module identifier | uint8\_t |
| CC\_id | Component carrier ID | int |
| \*radioResourceConfigCommo | Radio Configuration from SIB2 | RadioResourceConfigCommonSIB\_t |
| \*ul\_CArrierFreq | UL carrier ARFCN, null if optional | ARFCN\_ValueEUTRA\_t |
| \*ul\_Bandwidth | UL bandwidth, null if optional | long |
| \*additionalSpectrumEmission | UL parameter | AdditionalSpectrumEmission\_t |
| **else** | | |
| mbsfn\_SubframeConfigList | Pointer to mbsfn subframe configuration list from SIB2 | struct MBSFN\_SubframeConfigList |

### 4.3.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 4.4 rx\_sdu()

### 4.4.1 Description

This function is called by PHY, received MSG3/Uplink Data and send to MAC, it will call MAC\_RLC or MAC\_RRC SAP to send data to upper layer.

### 4.4.2 Direction

PHY 🡪 MAC

### 4.4.3 Source

\openairinterface5g\openair2\LAYER2\MAC\eNB\_scheduler\_ulsch.c

### 4.4.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| Parameter | Description | Data type |
| frameP, | NB-IoT Frame number | frame\_t |
| subframeP | NB-IoT Subframe number | subframe\_t |
| rntiP | Scrambling type | rnti\_t |
| sduP | Service Data Unit | uint8\_t |
| sdu\_lenP | SDU length | uint16\_t |
| harq\_pidP | HARQ process ID | int |
| \*msg3\_flagP | Flag for Msg3 or normal uplink data | uint8\_t |
| **else** | | |
| N/A | N/A | N/A |

### 4.4.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |

## 4.5 get\_dlsch\_sdu()

### 4.5.1 Description

PHY get downlink data from MAC layer.

### 4.5.2 Direction

PHY 🡪 MAC

### 4.5.3 Source

\openairinterface5g\openair2\LAYER2\MAC\eNB\_scheduler\_dlsch.c

### 4.5.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| module\_idP | Mod\_id Instance ID of eNB | module\_id\_t |
| CC\_id | Component carrier ID | int |
| frameP, | NB-IoT Frame number | frame\_t |
| rntiP | Scrambling type | rnti\_t |
| TBindex | Transblock size index | uint8\_t |
| **else** | | |
| N/A | N/A | N/A |

### 4.5.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| BCCH\_pdu.payload[0] | BCCH PDU payload | uint8\_t |
| DLSCH\_pdu.payload[0] | DLSCH PDU payload | int8\_t |

## 4.6 get\_dci\_sdu()

### 4.6.1 Description

retrieve result of scheduling (DCI) in current subframe. Can be called an arbitrary numeber of times after eNB\_dlsch\_ulsch\_scheduler

### 4.6.2 Direction

PHY 🡪 MAC

### 4.6.3 Source

openair2/Phy\_interface/defs.h

### 4.6.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| module\_idP | Mod\_id Instance ID of eNB | module\_id\_t |
| CC\_id | Component carrier ID | int |
| **else** | | |
| frameP, | NB-IoT Frame number | frame\_t |
| subframeP | Subframe number | Subframe\_t |

### 4.6.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| DCI\_PDU | The return value of this primitve | Struture of DCI\_PDU |

## 4.7 phy\_config\_dedicated\_eNB()

### 4.7.1 Description

PHY get physicalConfigDedicated from MAC layer.

### 4.7.2 Direction

MAC 🡪 PHY

### 4.7.3 Source

openair2/Phy\_interface/defs.h

### 4.7.4 Parameters

|  |  |  |
| --- | --- | --- |
| **If define NBIoT\_R13** | | |
| **Parameter** | **Description** | **Data Type** |
| Mod\_id | Virtualized module identifier | uint8\_t |
| CC\_id | Component carrier ID | int |
| rntiP | UE RNTI number | uint16\_t |
| *PhysicalConfigDedicated-NB* | Configuration parameter for physical Config Dedicate | physicalConfigDedicated |
| **else** | | |
| N/A | N/A | N/A |

### 4.7.5 Return Value

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Description** | **Data Type** |
| N/A | N/A | N/A |