

# ETSI TS 138 314 V17.0.0 (2022-05)



**5G;  
NR;  
Layer 2 measurements  
(3GPP TS 38.314 version 17.0.0 Release 17)**

[ETSI TS 138 314 V17.0.0 \(2022-05\)](https://standards.iteh.ai/catalog/standards/sist/a7b97ca3-d537-4768-91fa-7fd4feba4d15/etsi-ts-138-314-v17-0-0-2022-05)  
<https://standards.iteh.ai/catalog/standards/sist/a7b97ca3-d537-4768-91fa-7fd4feba4d15/etsi-ts-138-314-v17-0-0-2022-05>



---

Reference

---

RTS/TSGR-0238314vh00

---

Keywords

---

5G

**ETSI**

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

---

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° w061004871

---

**Important notice**

---

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at [www.etsi.org/deliver](http://www.etsi.org/deliver).

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our

Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

---

**Notice of disclaimer & limitation of liability**

---

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

---

**Copyright Notification**

---

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2022.

All rights reserved.

---

# Intellectual Property Rights

## Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

---

## Legal Notice

(standards.iteh.ai)

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

---

## Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"should"**, **"should not"**, **"may"**, **"need not"**, **"will"**, **"will not"**, **"can"** and **"cannot"** are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

**"must"** and **"must not"** are **NOT** allowed in ETSI deliverables except when used in direct citation.

# Contents

Intellectual Property Rights .....	2
Legal Notice .....	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope .....	5
2 References .....	5
3 Definitions of terms, symbols and abbreviations .....	5
3.1 Terms.....	5
3.2 Abbreviations .....	5
4 Layer 2 measurements.....	5
4.1 General .....	5
4.2 NR measurements performed by the gNB.....	6
4.2.1 Measurements valid for all gNB deployment scenarios.....	6
4.2.1.1 Received Random Access Preambles.....	6
4.2.1.1.1 Received Random Access Preambles per cell .....	6
4.2.1.1.2 Received Random Access Preambles per SSB .....	6
4.2.1.2 Packet delay .....	6
4.2.1.2.1 General .....	6
4.2.1.2.2 Average over-the-air interface packet delay in the UL per DRB per UE .....	7
4.2.1.2.3 Average RLC packet delay in the UL per DRB per UE .....	8
4.2.1.2.4 Average PDCP re-ordering delay in the UL per DRB per UE .....	8
4.2.1.3 Number of active UEs in RRC_CONNECTED .....	9
4.2.1.3.1 General .....	9
4.2.1.3.2 Mean number of Active UEs in the DL per DRB per cell.....	9
4.2.1.3.3 Max number of Active UEs in the DL per DRB per cell.....	10
4.2.1.3.4 Mean number of Active UEs in the UL per DRB per cell.....	10
4.2.1.3.5 Max number of Active UEs in the UL per DRB per cell.....	11
4.2.1.3.6 Mean number of Active UEs per cell.....	12
4.2.1.3.7 Max number of Active UEs per cell.....	13
4.2.1.3.8 Mean number of Active UEs per DRB per cell.....	13
4.2.1.3.9 Max number of Active UEs per DRB per cell.....	14
4.2.1.4 Number of stored inactive UE contexts .....	15
4.2.1.4.1 General .....	15
4.2.1.4.2 Mean number of stored inactive UE contexts.....	15
4.2.1.4.3 Max number of stored inactive UE contexts .....	16
4.2.1.5 Packet Loss Rate .....	16
4.2.1.5.1 Packet Uu Loss Rate in the DL per DRB per UE.....	16
4.2.1.6 Other measurements defined in TS 28.552 [2].....	17
4.2.1.7.3 PDSCH PRB Usage based on statistical MIMO layer in the DL per cell.....	19
4.2.1.7.4 PUSCH PRB Usage based on statistical MIMO layer in the UL per cell.....	19
4.2.1.7.5 Enhanced PDSCH PRB Usage for MIMO in the DL per cell .....	20
4.2.1.7.6 Enhanced PUSCH PRB Usage for MIMO in the UL per cell .....	21
4.3 NR measurements performed by the UE .....	22
4.3.1 Packet delay.....	22
4.3.1.1 UL PDCP Packet Average Delay per DRB per UE .....	22
4.3.1.2 UL PDCP Excess Packet Delay per DRB .....	23
4.3.1.2.1 Measurement report mapping for PDCP Excess Packet Delay .....	24
<b>Annex A (informative): Change history .....</b>	<b>26</b>
History .....	27

---

## Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

**ITeH STANDARD  
PREVIEW  
(standards.iteh.ai)**

ETSI TS 138 314 V17.0.0 (2022-05)  
<https://standards.iteh.ai/catalog/standards/sist/a7b97ca3-d537-4768-91fa-7fd4feba4d15/etsi-ts-138-314-v17-0-0-2022-05>

---

# 1 Scope

The present document contains the description and definition of the measurements performed by network or the UE that are transferred over the standardised interfaces in order to support NR radio link operations, radio resource management (RRM), network operations and maintenance (OAM), minimization of drive tests (MDT) and self-organising networks (SON).

Only the differences relative to TS 28.552 v16.2.0 [2] are specified in this specification.

---

# 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 28.552: "5G performance measurements".
- [3] 3GPP TS 38.331: "Radio Resource Control (RRC) protocol specification".
- [4] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

---

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

---

# 4 Layer 2 measurements

## 4.1 General

All the per DRB per cell measurements and per DRB per UE measurements can be aggregated into per QoS level per cell and per PLMN ID per cell by network implementation. All the performance measurements for gNB defined in TS 28.552 [2] 5.1 can be calculated into per PLMN ID level by network implementation. Per QoS level refers to per mapped 5QI for NR SA or per QCI for EN-DC.

## 4.2 NR measurements performed by the gNB

### 4.2.1 Measurements valid for all gNB deployment scenarios

#### 4.2.1.1 Received Random Access Preambles

##### 4.2.1.1.1 Received Random Access Preambles per cell

A use case for this measurement is RACH configuration optimization, where Received Random Access Preambles is signalled across an OAM interface.

Protocol Layer: MAC

**Table 4.2.1.1.1-1: Definition for Received Random Access Preambles per cell**

Definition	<p>Received Random Access Preambles per cell. This measurement is applicable to PRACH. The reference point is the Service Access Point between MAC and L1. The measured quantity is the number of received Random Access preambles during a time period over all PRACHs configured in a cell. The measurement is done separately for:</p> <ul style="list-style-type: none"> <li>- Dedicated preambles</li> <li>- Randomly selected preambles in the low range</li> <li>- Randomly selected preambles in the high range.</li> </ul> <p>The unit of the measured value is [/s].</p>
------------	--

##### 4.2.1.1.2 Received Random Access Preambles per SSB

A use case for this measurement is RACH configuration optimization, where Received Random Access Preambles is signalled across an OAM interface.

Protocol Layer: MAC

**Table 4.2.1.1.2-1: Definition for Received Random Access Preambles per SSB**

Definition	<p>Received Random Access Preambles per SSB. This measurement is applicable to PRACH. The reference point is the Service Access Point between MAC and L1. The measured quantity is the number of received Random Access preambles during a time period over all PRACHs configured in the SSB of the cell. The measurement is done separately for:</p> <ul style="list-style-type: none"> <li>- Dedicated preambles</li> <li>- Randomly selected preambles in the low range</li> <li>- Randomly selected preambles in the high range.</li> </ul> <p>The unit of the measured value is [/s].</p>
------------	--

#### 4.2.1.2 Packet delay

##### 4.2.1.2.1 General

Packet delay includes RAN part of delay and CN part of delay.

The RAN part of DL packet delay measurement comprises:

- D1 (DL delay in over-the-air interface), referring to Average delay DL air-interface in TS 28.552 [2] 5.1.1.1.1.
- D2 (DL delay on gNB-DU), referring to Average delay in RLC sublayer of gNB-DU in TS 28.552 [2] 5.1.3.3.3.
- D3 (DL delay on F1-U), referring to Average delay on F1-U in TS 28.552 [2] 5.1.3.3.2.
- D4 (DL delay in CU-UP), referring to Average delay DL in CU-UP in TS 28.552 [2] 5.1.3.3.1.



The DL packet delay measurements, i.e. D1 (the DL delay in over-the-air interface ), D2 (the DL delay in gNB-DU), D3 (the DL delay on F1-U) and D4 (the DL delay in CU-UP), should be measured per DRB per UE.

NOTE: The delay measurements D1, D2 and D4 are also applicable for EUTRA in case of EN-DC related DL delay measurements on the MN side.

The RAN part (including UE) of UL packet delay measurement comprises:

- D1 (UL PDCP packet average delay, as defined in clause 4.3.1.1).
- D2.1 (average over-the-air interface packet delay, as defined in 4.2.1.2.2).
- D2.2 (average RLC packet delay, as defined in 4.2.1.2.3).
- D2.3 (average delay UL on F1-U, it is measured using the same metric as the average delay DL on F1-U defined in TS 28.552 [2] clause 5.1.3.3.2).
- D2.4 (average PDCP re-ordering delay, as defined in 4.2.1.2.4).

The UL packet delay measurements, i.e. D1(UL PDCP packet average delay), D2.1(average over-the-air interface packet delay), D2.2(average RLC packet delay), D2.3(average delay UL on F1-U) and D2.4(average PDCP re-ordering delay), should be measured per DRB per UE. The unit of D1, D2.1, D2.2, D2.3 and D2.4 is 0.1ms.

NOTE: The delay measurements D1, D2.1, D2.2 and D2.4 are also applicable for EUTRA in case of EN-DC related UL delay measurements on the MN side.

For non CU-UP and DU split case, RAN part of packet delay excludes the delay at FI-U interface, i.e. D2.3 and D3.

If network disables the PDCP re-ordering function, the value of Average PDCP re-ordering delay i.e. D2.4 should be set to 0.

For the QoS monitoring in TS 23.501 [4], RAN informs the RAN part of UL packet delay measurement, or the RAN part of DL packet delay measurement, or both to the CN.

#### 4.2.1.2.2 Average over-the-air interface packet delay in the UL per DRB per UE

The objective of this measurement is to measure air interface UL packet delay for OAM performance observability or for QoS verification of MDT or for the QoS monitoring as defined in TS 23.501 [4].

Protocol Layer: MAC

**Table 4.2.1.2.2-1: Definition for Average over-the-air packet delay in the UL per DRB per UE**

Definition	<p>Average over-the-air packet delay in the UL per DRB per UE. This measurement is applicable for EN-DC and SA. This measurement refers to packet delay for DRBs. This measurement provides the average (arithmetic mean) time it takes to successfully receive a transport block from the time of UL transmission indicated in scheduling grant.</p> <p>Detailed Definition:</p> $M(T, drbid) = \left\lfloor \frac{\sum_{vi} t_{Succ}(i, drbid) - t_{Sched}(i, drbid)}{I(T)} \right\rfloor, \text{ where}$ <p>explanations can be found in the table 4.2.1.2.2-2 below.</p>
------------	--



**Table 4.2.1.2.2-2: Parameter description for Average over-the-air packet delay in the UL per DRB per UE**

$M(T, drbid)$	Over-the-air packet delay in the UL per DRB per UE, averaged during time period $T$ . Unit: 0.1 ms.
$tSched(i, drbid)$	The point in time when the UL MAC SDU $i$ is scheduled in MAC layer as per the scheduling grant provided.
$tSucc(i, drbid)$	The point in time when the UL MAC SDU $i$ is successfully sent to RLC.
$i$	A UL MAC SDU that arrives at the MAC during time period $T$ .
$I(T)$	Total number of UL MAC SDUs $i$ .
$T$	Time Period during which the measurement is performed
$drbid$	The identity of the measured DRB.

#### 4.2.1.2.3 Average RLC packet delay in the UL per DRB per UE

The objective of this measurement is to measure RLC delay in the UL for OAM performance observability or for QoS verification of MDT or for the QoS monitoring as defined in TS 23.501 [4].

Protocol Layer: RLC

**Table 4.2.1.2.3-1: Definition for Average RLC packet delay in the UL per DRB per UE**

Definition	<p>Average RLC delay in the UL per DRB per UE. This measurement is applicable for EN-DC and SA. This measurement refers to packet delay for DRBs. For CU-UP and DU split scenario or DC scenario, this measurement refers to the RLC delay on each DU or RAN node. This measurement provides the average (arithmetic mean) time it takes from the RLC PDU including the first part of an RLC SDU is received to the RLC SDU is sent to PDPCP or CU-UP for split gNB.</p> <p>Detailed Definition:</p> $M(T, drbid) = \left\lfloor \frac{\sum_{i=1}^{I(T)} tSent(i, drbid) - tReceiv(i, drbid)}{I(T)} \right\rfloor, \text{ where}$ <p>explanations can be found in the table 4.2.1.2.3-2 below.</p>
------------	--

**Table 4.2.1.2.3-2: Parameter description for Average RLC packet delay in the UL per DRB per UE**

$M(T, drbid)$	RLC delay in the UL per DRB per UE, averaged during time period $T$ . Unit: 0.1 ms.
$tReceiv(i, drbid)$	The point in time when the UL RLC PDU including the first part of the UL RLC SDU $i$ is received.
$tSent(i, drbid)$	The point in time when the UL RLC SDU $i$ is sent to PDPCP or CU-UP for split gNB.
$i$	A UL RLC SDU that is received by the RLC during time period $T$ .
$I(T)$	Total number of UL RLC SDUs $i$ .
$T$	Time Period during which the measurement is performed
$drbid$	The identity of the measured DRB.

#### 4.2.1.2.4 Average PDPCP re-ordering delay in the UL per DRB per UE

The objective of this measurement is to measure PDPCP re-ordering delay in the UL for OAM performance observability or for QoS verification of MDT or for the QoS monitoring as defined in TS 23.501 [4].

Protocol Layer: PDPCP

**Table 4.2.1.2.4-1: Definition for Average PDCP re-ordering delay in the UL per DRB per UE**

Definition	<p>Average PDCP re-ordering delay in the UL per DRB per UE. This measurement is applicable for EN-DC and SA. This measurement refers to packet delay for DRBs. This measurement provides the average (arithmetic mean) time it takes from the point a PDCP PDU is received to the PDCP SDU is sent to upper SAP.</p> <p>Detailed Definition:</p> $M(T, drbid) = \left\lfloor \frac{\sum_{\forall i} tSent(i, drbid) - tReceiv(i, drbid)}{I(T)} \right\rfloor, \text{ where}$ <p>explanations can be found in the table 4.1.1.2.4-2 below.</p>
------------	---

**Table 4.2.1.2.4-2: Parameter description for Average PDCP re-ordering delay in the UL per DRB per UE**

$M(T, drbid)$	PDCP re-ordering delay in the UL per DRB per UE, averaged during time period $T$ . Unit: 0.1 ms.
$tReceiv(i, drbid)$	The point in time when the UL PDCP PDU including the UL PDCP SDU $i$ is received.
$tSent(i, drbid)$	The point in time when the UL PDCP SDU $i$ is sent to upper SAP.
$i$	A UL PDCP SDU that is received by the PDCP during time period $T$ .
$I(T)$	Total number of UL PDCP SDUs received during time period $T$ .
$T$	Time Period during which the measurement is performed
$drbid$	The identity of the measured DRB.

### 4.2.1.3 Number of active UEs in RRC\_CONNECTED

#### 4.2.1.3.1 General

The objective of the measurement is to measure the number of active UEs per QoS level for OAM performance observability or for SON functions e.g., mobility load balancing. It is intended to be part of a calculation to determine the bitrate UEs achieve when they are active, i.e. when applications are transmitting and receiving data. The measurements are applicable for both non-split gNB and split gNB deployment scenario.

#### 4.2.1.3.2 Mean number of Active UEs in the DL per DRB per cell

Protocol Layer: MAC, RLC

**Table 4.2.1.3.2-1: Definition for Mean number of Active UEs in the DL per DRB per cell**

Definition	<p>Mean number of Active UEs in the DL per DRB per cell. The DRBs are mapped with the same 5QI for NR SA or mapped with the same QCI for EN-DC. This measurement refers to UEs for which there is data available for transmission for the DL for DRBs.</p> <p>Detailed Definition:</p> $M(T, drbid, p) = \left\lfloor \frac{\sum_{\forall i} N(i, drbid)}{I(T, p)} * 10 \right\rfloor, \text{ where}$ <p>explanations can be found in the table 4.2.1.3.2-2 below.</p>
------------	--

**Table 4.2.1.3.2-2: Parameter description for Mean number of Active UEs in the DL per DRB per cell**

$M(T, drbid, p)$	Mean number of Active UEs in the DL per DRB per cell, averaged during time period $T$ . Unit: 0.1.
$N(i, drbid)$	Number of UEs for which there is data available for transmission for the DL in MAC or RLC protocol layers for a Data Radio Bearer of traffic class at sampling occasion $i$ . Data available for transmission includes data for which HARQ transmission has not yet terminated.
$i$	Sampling occasion during time period $T$ . A sampling occasion shall occur once every $p$ seconds.
$p$	Sampling period length. Unit: second. The sampling period shall be at most 0.1 s.
$I(T, p)$	Total number of sampling occasions during time period $T$ .
$T$	Time Period during which the measurement is performed, Unit: second.
$drbid$	The DRBs mapped with the same 5QI for NR SA or mapped with the same QCI for EN-DC.

#### 4.2.1.3.3 Max number of Active UEs in the DL per DRB per cell

Protocol Layer: MAC, RLC

**Table 4.2.1.3.3-1: Definition for Max number of Active UEs in the DL per DRB per cell**

Definition	Maximum number of Active UEs in the DL per DRB per cell. The DRBs are mapped with the same 5QI for NR SA or mapped with the same QCI for EN-DC. This measurement refers to UEs for which there is data available for transmission for the DL for DRBs. Detailed Definition: $M(T, drbid, p) = \max_T(N(i, drbid))$ , where explanations can be found in the table 4.2.1.3.3-2 below.
------------	---

**Table 4.2.1.3.3-2: Parameter description for Max number of Active UEs in the DL per DRB per cell**

$M(T, drbid, p)$	Maximum number of Active UEs in the DL per DRB per cell, averaged during time period $T$ . Unit: Integer.
$N(i, drbid)$	Number of UEs for which there is data available for transmission for the DL in MAC or RLC protocol layers for a Data Radio Bearer of traffic class at sampling occasion $i$ . Data available for transmission includes data for which HARQ transmission has not yet terminated.
$i$	Sampling occasion during time period $T$ . A sampling occasion shall occur once every $p$ seconds.
$p$	Sampling period length. Unit: second. The sampling period shall be at most 0.1 s.
$T$	Time Period during which the measurement is performed, Unit: second.
$drbid$	The DRBs mapped with the same 5QI for NR SA or mapped with the same QCI for EN-DC.

#### 4.2.1.3.4 Mean number of Active UEs in the UL per DRB per cell

Protocol Layer: MAC