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Part 3: Protocol Test Suites

(Release 17)



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# 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;

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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.

The present document is part 3 of a multi-part deliverable covering the 5G System (5GS) User Equipment (UE) protocol conformance specification, as identified below:

- 3GPP TS 38.523-1 [8]: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".

- 3GPP TS 38.523-2 [9]: "5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases".

- **3GPP TS 38.523-3: "5GS; User Equipment (UE) conformance specification; Part 3: Protocol Test Suites"** (the present document).

# 1 Scope

The present document specifies the protocol and signalling conformance testing in TTCN-3 for the 3GPP UE connecting to the 5G System (5GS) via its radio interface(s).

The following TTCN test specification and design considerations can be found in the present document:

- the test system architecture;

- the overall test suite structure;

- the test models and ASP definitions;

- the test methods and usage of communication ports definitions;

- the test configurations;

- the design principles and assumptions;

- TTCN styles and conventions;

- the partial PIXIT proforma;

- the test suites.

The Test Suites designed in the document are based on the test cases specified in prose in 3GPP TS 38.523‑1 [8]. The applicability of the individual test cases is specified in 3GPP TS 38.523‑2 [9].

The present document is valid for TTCN development for 5GS UE conformance test according to 3GPP Releases starting from Release 15 up to the Release indicated on the cover page of the present document.

# 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] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[3] ISO/IEC 9646-7: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[4] ETSI ES 201 873: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3".

[5] 3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment".

[6] 3GPP TS 38.508-2: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

[7] 3GPP TS 38.509: "5GS; Special conformance testing functions for User Equipment (UE)".

[8] 3GPP TS 38.523-1: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".

[9] 3GPP TS 38.523-2: "5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases".

[10] 3GPP TS 36.508: "Common test environments for User Equipment (UE) conformance testing".

[11] 3GPP TS 36.509: "Terminal logical test interface; Special conformance testing functions".

[12] 3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Test suites".

[13] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".

[14] 3GPP TS 38.322: "NR; Radio Link Control (RLC) protocol specification".

[15] 3GPP TS 38.323: "NR; Packet Data Convergence Protocol (PDCP) specification".

[16] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".

[17] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Resource Control (RRC); Protocol Specification".

[18] 3GPP TS 24.301: "Non-Access-Stratum (NAS) Protocol for Evolved Packet System (EPS); Stage 3".

[19] 3GPP TS 38.211: "NR; Physical channels and modulation".

[20] 3GPP TS 38.212: "NR; Multiplexing and channel coding".

[21] 3GPP TS 38.213: " NR; Physical layer procedures for control".

[22] 3GPP TS 38.214: "NR; Physical layer procedures for data".

[23] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation".

[24] 3GPP TS 38.304: "NR; User Equipment (UE) procedures in Idle mode and RRC Inactive state".

[25] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[26] 3GPP TS 24.501: "Non-Access-Stratum (NAS) Protocol for 5G System (5GS); Stage 3".

[27] RFC 5448: "Improved Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA’)".

[28] 3GPP TS 37.571-4: "User Equipment (UE) conformance specification for UE positioning; Part 4: Test Suites".

[29] 3GPP TS 37.355: " LTE Positioning Protocol (LPP)".

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP 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 3GPP TR 21.905 [1].

In addition for the purposes of the present document, the following terms, definitions, symbols and abbreviations apply:

- such given in ISO/IEC 9646-1 [2] and ISO/IEC 9646-7 [3]

NOTE: Some terms and abbreviations defined in [2] and [3] are explicitly included below with small modification to reflect the terminology used in 3GPP.

**Implementation eXtra Information for Testing (IXIT)**: A statement made by a supplier or implementer of an UEUT which contains or references all of the information (in addition to that given in the ICS) related to the UEUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the UEUT.

**IXIT proforma:** A document, in the form of a questionnaire, which when completed for an UEUT becomes an IXIT.

**Protocol Implementation Conformance Statement (PICS):** An ICS for an implementation or system claimed to conform to a given protocol specification.

**Protocol Implementation eXtra Information for Testing (PIXIT):** An IXIT related to testing for conformance to a given protocol specification.

## 3.2 Symbols

No specific symbols have been identified so far.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

5GC 5G Core Network

ASP Abstract Service Primitive

ATS Abstract Test Suite

AWGN Additive White Gaussian Noise

CA Carrier Aggregation

CBRA Contention Based Random Access

CC Component Carriers

CCE Control Channel Element

CFRA Contention Free Random Access

CORESET Control Resource Set

DAI Downlink Assignment Index

DCI Downlink Control Information

DL Downlink

DL-SCH Downlink Shared Channel

DMRS Demodulation Reference Signal

EHC Ethernet Header Compression

EN-DC E-UTRA-NR Dual Connectivity

EPC Evolved Packet Core

FR1 Frequency Range 1

FR2 Frequency Range 2

HO Handover

H-SFN Hyper SFN

ICS Implementation Conformance Statement

IUT Implementation Under Test

IXIT Implementation eXtra Information for Testing

LSB Least Significant Bit

MCG Master Cell Group

MN Master Node

MSB Most Significant Bit

NE-DC NR-E-UTRA Dual Connectivity

NR NR Radio Access

NR-DC NR-NR Dual Connectivity

PCell Primary Cell

PDCCH Physical Downlink Control Channel

PDSCH Physical Downlink Shared Channel

PRACH Physical Random Access Channel

PRB Physical Resource Block

PSCell Primary SCG Cell

PSS Primary Synchronisation Signal

PUCCH Physical Uplink Control Channel

PUSCH Physical Uplink Shared Channel

RA Random Access

RACH Random Access Channel

RAR Random Access Response

RAT Radio Access Technology

RMSI Remaining Minimum SI

SCell Secondary Cell

SCG Secondary Cell Group

SFN System Frame Number

SN Secondary Node

SRS Sounding Reference Signal

SS System Simulator

SSB Synchronization Signal and PBCH block

SSS Secondary Synchronisation Signal

TC Test Case

UL Uplink

UL-SCH Uplink Shared Channel

UT Upper Tester

VNG Virtual Noise Generator

# 4 Test system architecture

## 4.1 General system architecture

The architecture specified in TS 36.523-3 [12] subclause 4.1.1 applies to the present document.

## 4.2 Component architecture

The architecture specified in TS 36.523-3 [12] subclause 4.1.2 applies to the present document, with NR RAT as another separate TTCN-3 parallel component.

# 5 Test models

## 5.1 EN-DC

### 5.1.1 Layer 3

#### 5.1.1.1 Single NR carrier



Figure 5.1.1.1-1: Test model for EN-DC Layer3 testing (*MCG and SCG*)



Figure 5.1.1.1-2: Test model for EN-DC Layer3 testing (*MCG and split DRB*)



Figure 5.1.1.1-3: Test model for EN-DC Layer3 testing (*Split SRB(s)*, DRBs removed for clarity)

The UE is configured in normal mode. On the UE side Ciphering and Integrity (PDCP and NAS) are enabled and header compression is not configured.

On the SS Side L1, MAC and RLC (EUTRA/NR) and PDCP (EUTRA/NR) are configured in normal way and shall perform all their functions. SRB0, 1 & 2 are configured only in EUTRA. For SRB0 the DL and UL port is above RLC. For SRB1 and SRB2 the port is above/below the EUTRA RRC and NAS emulator, which is implemented as a parallel test component. For DRB, the port is above PDCP. PDCP Ciphering/Integrity is enabled. NAS integrity/Ciphering is enabled.

NOTE: PDCP (EUTRA/NR) is always configured in the EUTRA PTC for SRB1 & 2.

The EUTRA RRC/NAS emulator for SRB1 and SRB2 shall provide the Ciphering and Integrity functionality for the EPS NAS messages. In UL direction, SS shall report RRC messages, still containing (where appropriate) the secure and encoded NAS message, to the RRC port. In DL, RRC and NAS messages with same timing information shall be embedded in one PDU after integrity and ciphering for NAS messages.

SRB3 is connected directly to the SRB port in the NR PTC/dummy NR RRC/NAS emulator.

The NR PDCP can be configured in either the EUTRA or NR PTC for one or more SRBs or DRBs. If NR PDCP is configured, the bearer can be split. In this case the PDCP will be fully configured on the cell upon which the bearer is terminated and the other PTC will be configured with a proxy PDCP. Data shall be sent/received only on the PTC upon which the bearer is terminated. The SS shall route data to/from either cell, via the routing information provided.

#### 5.1.1.2 NR carrier aggregation

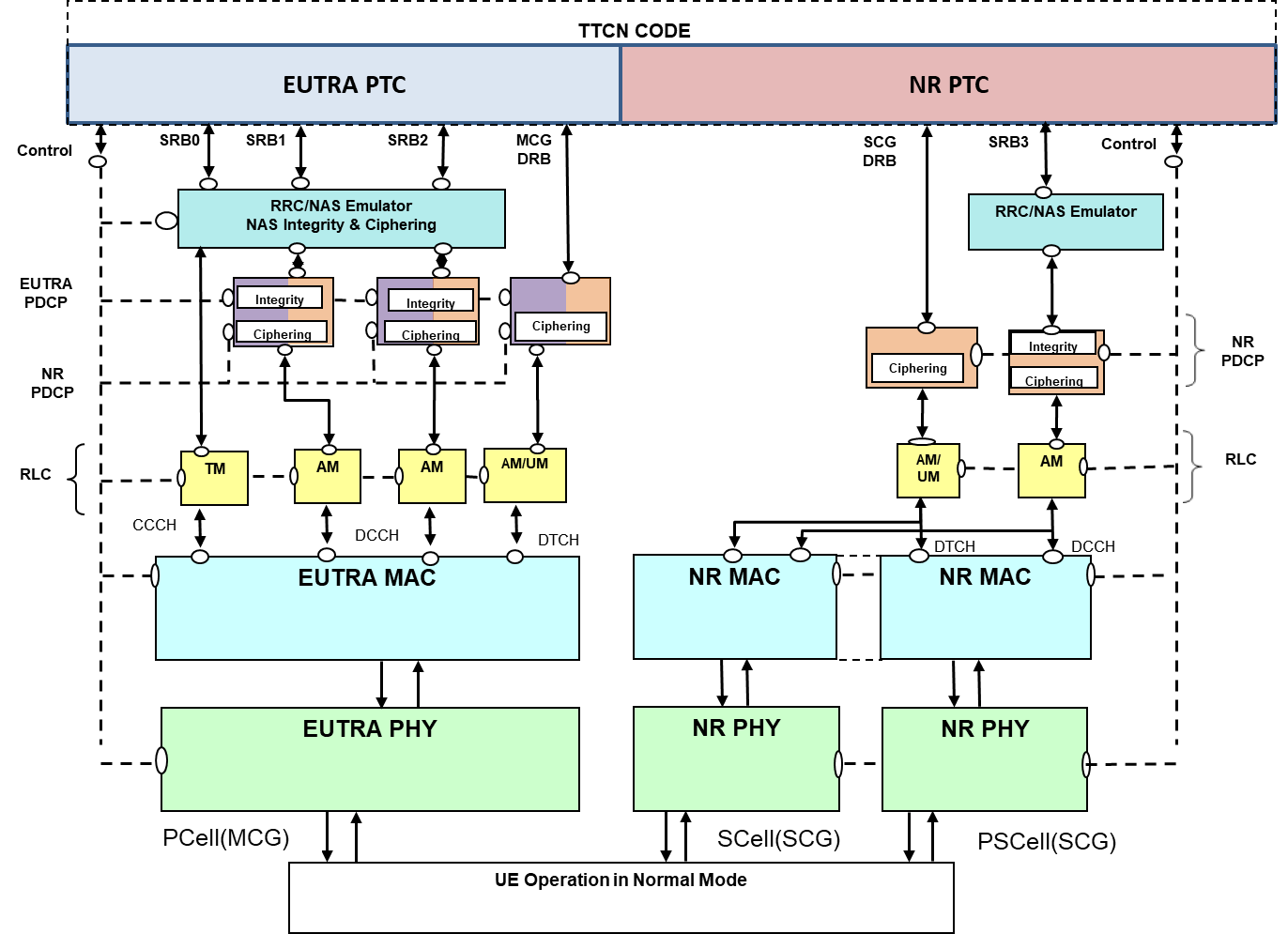


Figure 5.1.1.2-1: Test model for EN-DC Layer3 CA testing

The EN-DC Layer3 CA test model builds on top of the EN-DC Layer3 test model, with the differences specified hereafter.

On the SS NR side, in the SCG there is one PSCell and one SCell configured:

- PSCell: The associated SCell is linked to this PSCell,to enable the connection of the SCell MAC layer to the PSCell RLC/PDCP layers for DCCH/DTCH.

- SCell: Only PHY and MAC layers are configured, and MIB is broadcast.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception in PSCell over system indication port, if configured.

The NR data routing between the RLC layer of PSCell and the lower layers of either PSCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

In a similar way the reception of PRACH preambles in PSCell / SCell is reported by SS over the same port, if configured.

### 5.1.2 Layer 2

#### 5.1.2.1 PDCP

##### 5.1.2.1.1 Single NR carrier



Figure 5.1.2.1.1-1: Test model for EN-DC PDCP testing (*MCG and SCG*)



Figure 5.1.2.1.1-2: Test model for EN-DC PDCP testing (*MCG and split DRB*)

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer. On UE side Ciphering is enabled as null algorithm and header compression is not configured.

Test Loop Mode can be active on SCG DRB as shown in Figure 5.1.2.1.1-1 or active split DRB as shown in Figure 5.1.2.1.1-2.

NOTE: Test loop Mode activation on MCG DRB with NR-PDCP is not considered in Figure 5.1.2.1.1-2.

On the SS NR, Layer 1, MAC and RLC are configured in the normal operation. The PDCP is configured in a special mode, where SS does not add any PCDP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

On the SS side the EUTRA MCG layer 1, MAC, RLC and MCG DRB’s PDCP are configured in normal operation. They shall perform their functions. In case of split DRB, MCG leg’s PDCP layer is configured as Proxy mode, TTCN shall configure EUTRA for EN-DC PDCP testing only when a Test Loop Mode is active on a split DRB.

The SS shall route DL PDCP PDUs from TTCN to PCell and/or PSCell and SS shall indicate that the UL PDCP PDU is received from PCell or PSCell.

Duplication function:

- UL SS shall include routing information for each UL PDCP PDU.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.1.2.1.2 NR carrier aggregation

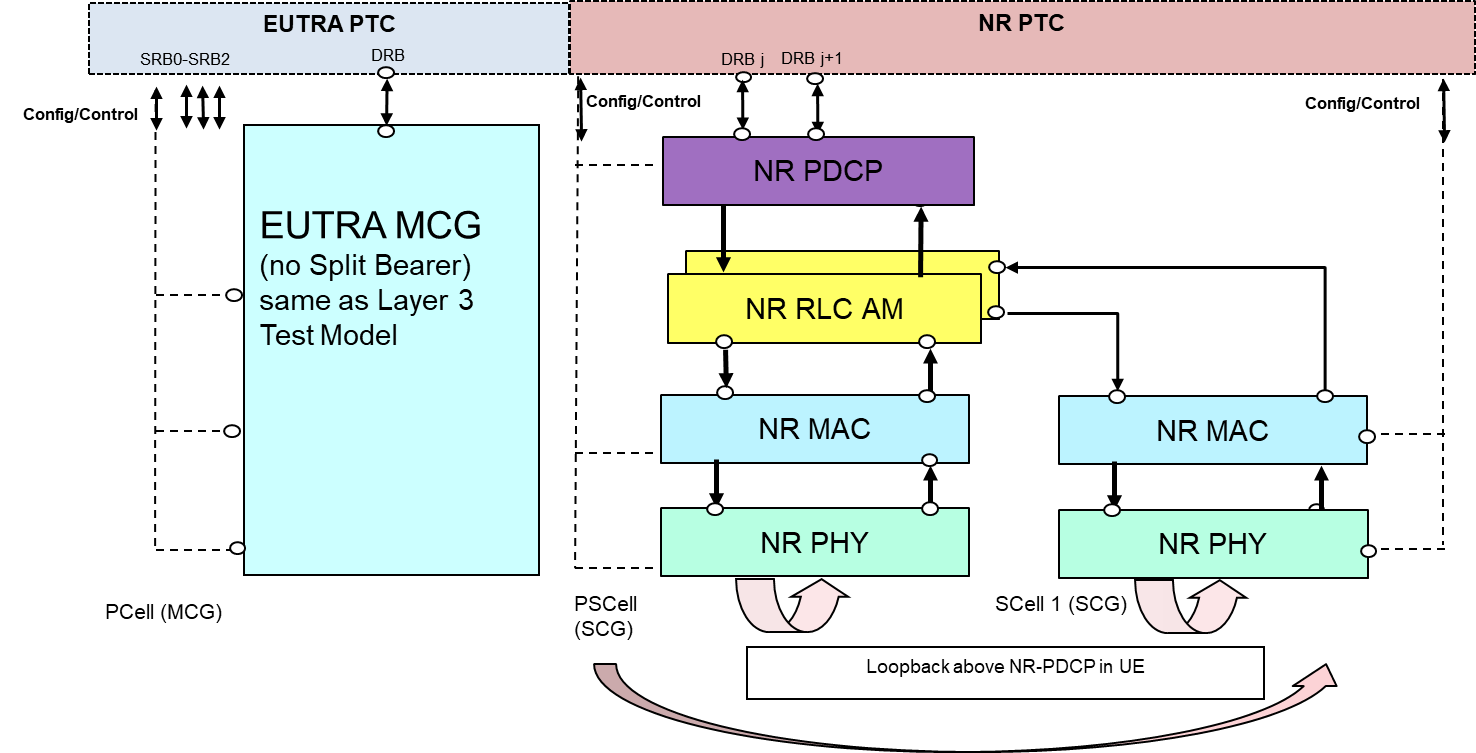


Figure 5.1.2.1.2-1: Test model for EN-DC with NR CA duplication PDCP testing (*MCG and SCG*)

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer. On UE side Ciphering is enabled as null algorithm and header compression is not configured. Test Loop Mode is activated on SCG DRB as shown in Figure 5.1.2.1.2-1.

On the SS side the EUTRA MCG layer 1, MAC, RLC and MCG DRB’s PDCP are configured in normal operation. They shall perform their functions.

On the NR side, the SS configures in the PSCell, Layer 1, MAC and RLC in the normal operation. The NR PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

The SS configures DRB j and DRB j+1 on the PSCell, every DRB is connected to an RLC entity. The RLC entity configured on DRB j is linked to the MAC entity on the PSCell, the RLC entity configured on DRB j+1 is linked to the MAC entity on the SCell.

The SS configures SCell with Layer 1, MAC in normal operation. The MAC entity of the SCell is linked to the RLC entity on DRB j+1 of the PSCell.

The NR data routing between the RLC layer of PSCell and the lower layers of either PSCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

#### 5.1.2.2 RLC



Figure 5.1.2.2-1: Test model for EN-DC RLC AM/UM testing

The PCell is an EUTRA Cell and PSCell is an NR cell on which testing happens. The UE is registered in EUTRA, using SRBs 0-2, and configured for EN-DC operation.

This model is suitable for testing both UM/AM mode of operation of DRBs on UE side.

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer. On UE side Ciphering is enabled (since mandatory) but with null ciphering algorithm, which is equivalent to not using ciphering. Header compression is not configured on UE side.

On the SS Side, L1 and MAC are configured in the normal way. The RLC of the SCG DRBs is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no PDCP configured on SS NR PTC side. The ports are directly above RLC.

The PDUs, exchanged between TTCN and SS, shall be the final RLC PDUs consisting of RLC and PDCP headers. TTCN code shall take care in DL of building RLC headers and PDCP headers and in UL handle RLC and PDCP headers. TTCN code shall take care of maintaining sequence numbers and state variables for RLC and PDCP layers. If RLC on UE side is in AM mode, TTCN shall take care of generating polls in DL and responding with RLC control PDUs on reception of UL Poll.

#### 5.1.2.3 MAC

##### 5.1.2.3.1 Single NR carrier



Figure 5.1.2.3.1-1: Test model for EN-DC MAC testing

The UE is configured in Test Loop Mode, to loop back the User Plane data above PDCP layer. On UE side Ciphering is enabled (since Mandatory) but with null ciphering algorithm, which is equivalent to not using ciphering. Header compression is not configured on UE side.

On the SS Side the EUTRA MCG is configured as per the EN-DC Layer 3 test model in normal operation. The EN-DC MAC test model expects no split bearers to be configured.

On the SS NR, Layer 1 is configured in the normal way. NR MAC is configured in a special mode, where it does not add any MAC headers in DL and /or not remove any MAC headers in UL directions respectively at DRB port. In this case, the TTCN shall provide the final MAC PDU, including padding. Except for this, the NR MAC layer shall perform all its other functions. SRB3 if present is configured as in Layer 3 test model in normal operation.

On DRBs the NR RLC is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no NR PDCP configured on SS Side. The ports are directly above NR RLC.

There are two different test modes in which NR MAC header addition/removal can be configured:

1. DL/UL header-transparent mode: no header addition in DL and no header removal in UL.

2. DL only header-transparent mode: no header addition in DL; UL NR MAC is configured in normal mode to remove MAC header and de-multiplex the MAC SDUs according to the logical channel Ids.

If SS NR MAC is configured in DL/UL header-transparent mode, the PDUs, exchanged at the DRB port between TTCN and SS, shall be the final MAC PDUs consisting of MAC, RLC and PDCP headers. TTCN code shall take care in DL of building MAC header, RLC headers and PDCP headers and in UL handle MAC, RLC and PDCP headers. TTCN code shall take care of maintaining sequence numbers and state variables for RLC and PDCP layers. During testing of multiple DRBs at the UE side, it shall still be possible to configure only one DRB on SS side with configuration in the figure 5.1.2.3-1. Other DRBs will not be configured, to facilitate routing of UL MAC PDUs. Multiplexing/de-multiplexing of PDUs meant/from different DRBs shall be performed in TTCN. Since the MAC layer does not evaluate the MAC headers in UL it cannot distinguish between SRB and DRB data in UL. There shall be no SRB3 traffic while MAC is configured in this test mode. The SS MAC shall take care of automatic repetitions/retransmission in UL and DL, based on normal MAC HARQ behaviour.

If SS NR MAC is configured in DL only header-transparent mode, the UL PDUs exchanged at the DRB port between TTCN and SS shall be final RLC PDUs consisting of RLC and PDCP headers. SS shall route these PDUs based on logical channel IDs. In DL, TTCN sends fully encoded MAC PDUs at the DRB port (consisting of MAC, RLC and PDCP headers). In this case TTCN needs to take care of maintaining sequence numbers and state variables for RLC and PDCP layers. Furthermore, in UL and DL the SS MAC layer shall be capable of dealing with SRB3 data (i.e. it shall handle DL RLC PDUs coming from SRB3 RLC layer or de-multiplex UL RLC PDUs to SRB3) as in normal mode. The SS MAC shall take care of automatic repetitions/retransmissions in UL and DL, based on normal MAC HARQ behaviour. TTCN shall ensure that no DL MAC SDUs in normal mode and DL MAC PDUs in test mode are mixed for the same TTI.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured. In a similar way the reception of PRACH preambles is reported by SS over the same port.

When SS is configured either with *pusch-AggregationFactor* > 1 or with *pusch-RepTypeIndicatorDCI-0-1-r16* set to *pusch-RepTypeB* and SS NR MAC is configured in DL/UL header-transparent mode, SS shall handle UE automatic subsequent repetitions/retransmissions in UL on the same HARQ process according to TS 38.214[22] clause 6.1.2.1, and in addition SS shall transmit to TTCN every received UL HARQ transmission/retransmission within a bundle as separate MAC PDUs.

##### 5.1.2.3.2 NR carrier aggregation



Figure 5.1.2.3.2-1: Test model for EN-DC MAC CA testing

The EN-DC MAC CA test model builds on top of the EN-DC MAC test model, with the differences specified hereafter.

On the SS NR side, in the SCG there is one PSCell and one SCell configured:

- PSCell only: On DRBs the NR RLC is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no NR PDCP configured in the SS. The ports are directly above NR RLC.

- PSCell / SCell: Layer 1 is configured in the normal way. NR MAC is configured in a special mode, where it does not add any MAC headers in DL and /or not remove any MAC headers in UL directions respectively at DRB port. In this case, the TTCN shall provide the final MAC PDU, including padding. Except for this, the MAC layer shall perform all of its other functions.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception in PSCell over system indication port, if configured. In a similar way the reception of PRACH preambles in PSCell / SCell is reported by SS over the same port, if configured.

The NR data routing between the RLC layer of PSCell and the lower layers of either PSCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

## 5.2 NR/5GC

### 5.2.1 Layer 3

#### 5.2.1.1 Single NR carrier



Figure 5.2.1.1-1: Test model for NR/5GC Layer3 testing

The UE is configured in normal mode. On the UE side Ciphering and Integrity (PDCP and NAS) are enabled and header compression is not configured.

On the SS Side L1, MAC, RLC, PDCP and SDAP are configured in the normal way and shall perform all their functions. For SRB0 the DL and UL port is above RLC. For SRB1 and SRB2 the port is above/below the NR RRC and NAS emulator, which is implemented as a parallel test component. For DRB, the port is above SDAP. PDCP Ciphering/Integrity is enabled. NAS integrity/Ciphering is enabled.

The RRC/NAS emulator for SRB1 and SRB2 shall provide the Ciphering and Integrity functionality for the 5GC NAS messages. In UL, the SS shall report RRC messages, still containing (where appropriate) the secure and encoded NAS message, to the RRC port. In DL, RRC and NAS messages with same timing information shall be embedded in one PDU after integrity and ciphering of the NAS messages.

#### 5.2.1.2 NR carrier aggregation

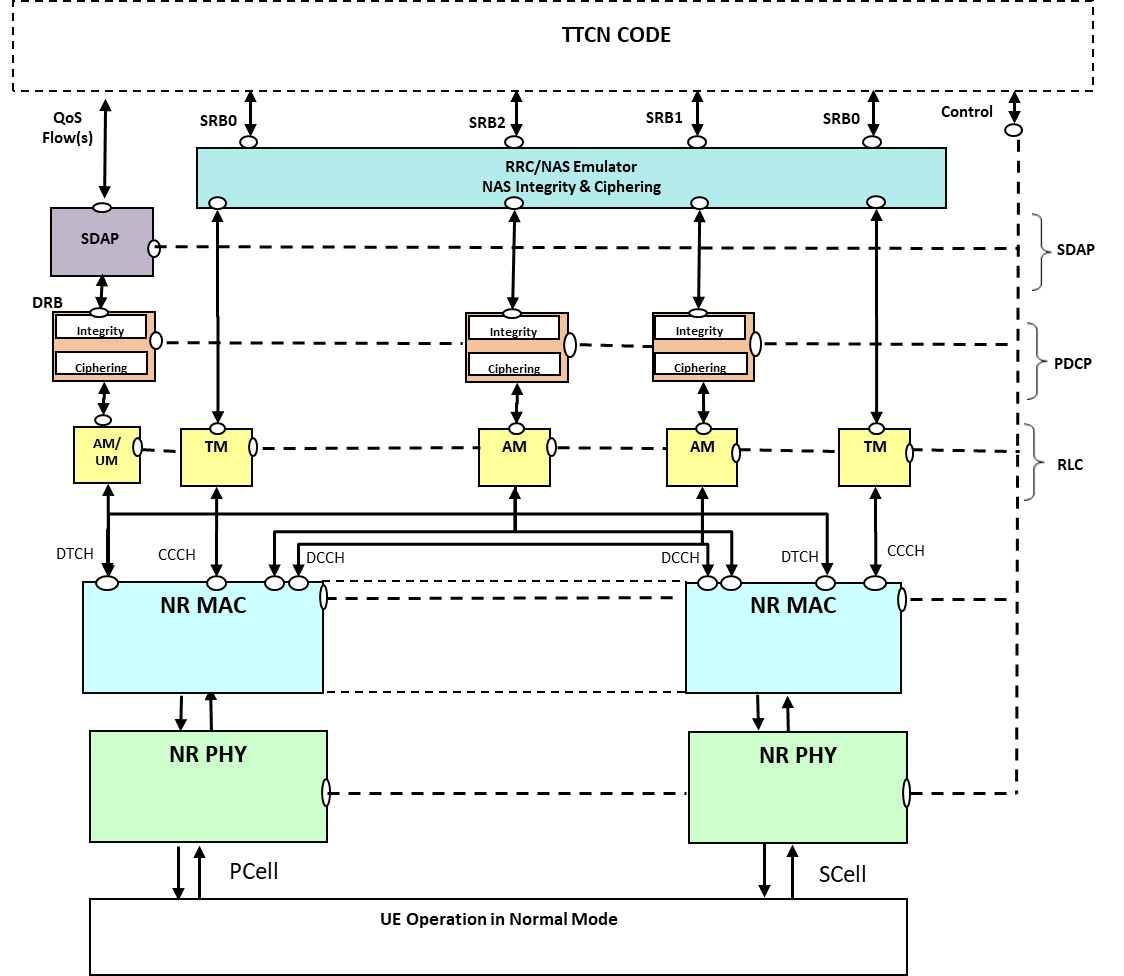


Figure 5.2.1.2-1: Test model for NR/5GC Layer3 CA testing

The NR/5GC Layer3 CA test model builds on top of the NR/5GC Layer3 test model, with the differences specified hereafter.

In the SS side, there is one PCell and one SCell configured:

- PCell: The associated SCell is linked to this PCell to enable the connection of the SCell MAC layer to the PCell RLC/PDCP layers for DCCH/DTCH.

- SCell: PHY and MAC layers are configured in normal way. RLC layer is configured only for BCCH/PCCH/CCCH.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. The SS reports PUCCH scheduling information reception in PCell over system indication port, if configured.

The NR data routing between the RLC layer of PCell and the lower layers of either PCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

In a similar way the reception of PRACH preambles in PCell / SCell is reported by SS over the same port, if configured.

#### 5.2.1.3 NR/5GC Inter-RAT

##### 5.2.1.3.1 NR/E-UTRA Inter-RAT



Figure 5.2.1.3.1-1: Test model for NR/E-UTRA Inter-RAT testing

This test model is only relevant for NR/5GC to/from E-UTRA/EPC inter-RAT and is not applicable to E-UTRA/5GC. The model consists of a dual protocol stack: one for NR and one for E-UTRA. The TTCN implementation for NR and E-UTRA functionalities will be in separate Parallel Test Components.

The SS NR part is the same as the model defined in subclause 5.2.1.1 for NR/5GC L3 testing.

The SS E-UTRA part is the same as the model defined in 36.523-3 [12] clause 4.2.2 for RRC testing.

The UE is configured in normal mode. Ciphering/Integrity (PDCP and NAS) are enabled and header compression is not configured.

##### 5.2.1.3.2 NR/UTRAN Inter-RAT

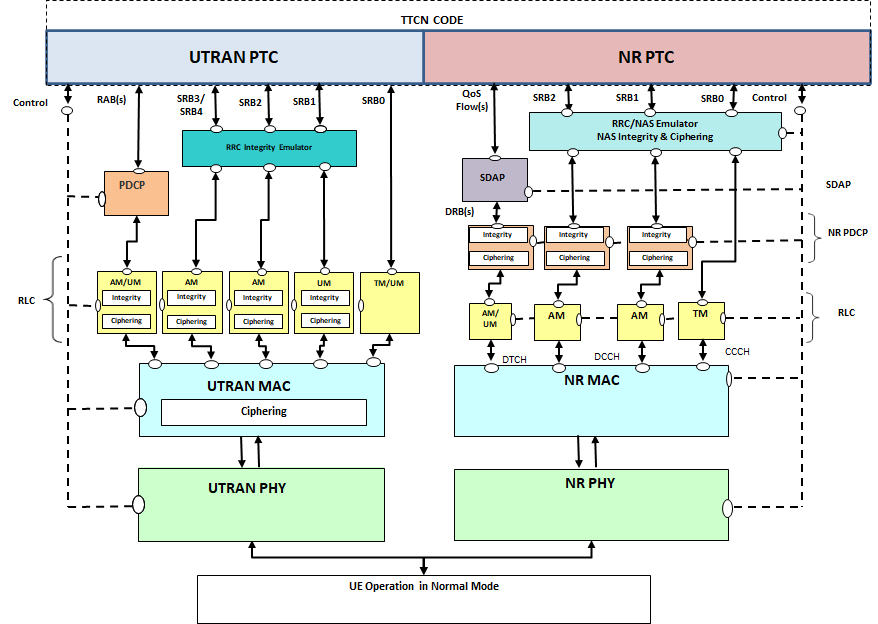


Figure 5.2.1.3.2-1: Test model for NR/UTRAN Inter-RAT testing

The model consists of a dual protocol stack: one for NR and one for UTRAN. The TTCN implementation for NR and UTRAN functionalities will be in separate Parallel Test Components.

The SS NR part is the same as the model defined in subclause 5.2.1.1 for NR/5GC L3 testing.

The SS UTRAN part consisting of PHY, MAC, RLC and PDCP (optionally, if PS user RB established only), are configured in normal mode. They shall perform all of their functions normally. Ciphering is enabled and shall be performed in RLC (AM/UM) and MAC (TM RLC). Integrity is enabled, and SS shall provide RRC emulator for integrity protection calculation and checking and 'Direct transfer' adaptation. Ports are above RLC (CS RAB and SRB0), PDCP (PS RAB) and RRC Emulator (SRB1 to SRB4).

The UE is configured in normal mode. Ciphering/Integrity (PDCP and NAS) are enabled. Ciphering is enabled in UTRAN and header compression is not configured.

##### 5.2.1.3.3 NR/WLAN Inter-RAT

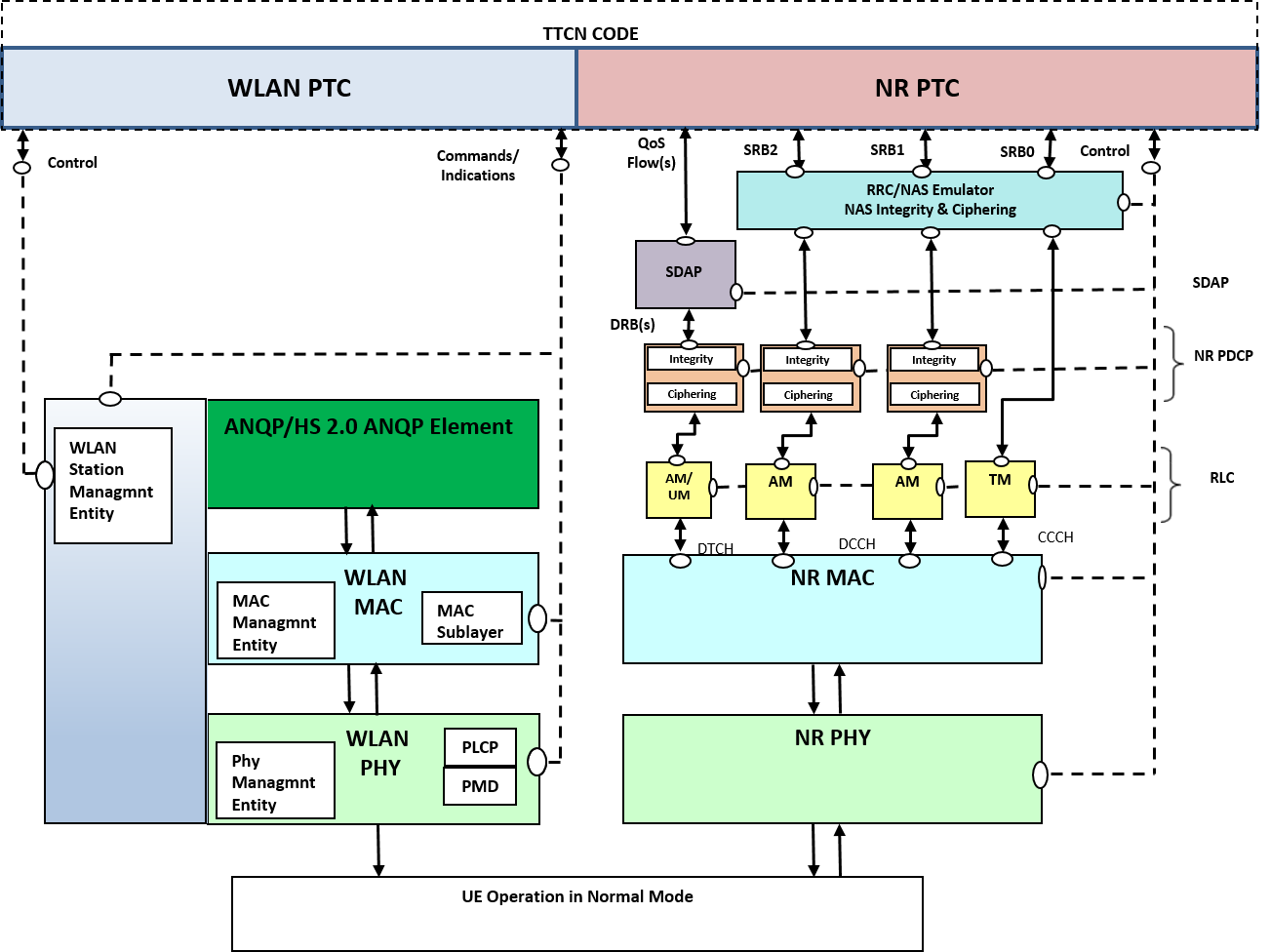


Figure 5.2.1.3.3-1: Test model for NR/WLAN Inter-RAT testing

The current test model is relevant for NR/5GC and is aimed to simulate solely the presence of the WLAN Access Point (AP) in the testing environment. It can be used by test cases where the UE is only required to measure the Beacon RSSI of the WLAN AP. No data transfer between the UE and the emulated WLAN AP is supported. The TTCN implementation for NR and WLAN functionalities is located in separate Parallel Test Components.

The SS NR part is the same as the model defined in subclause 5.2.1.1 for NR/5GC L3 testing.

The SS WLAN part is the same as the model defined in TS 36.523-3 [12] clause 4.5 with the following restrictions:

- WLAN AP shall be configured via SYS and SYS\_IND ports. WLAN AP Address Information provided during the configuration should be treated as a bogus data needed for the configuration but not actually used.

- SYS\_EPDG and SYS\_EPDG\_IND ports of WLAN PTC should not be used for any configuration.

The UE is configured in normal mode. Ciphering/Integrity (PDCP and NAS) are enabled and header compression is not configured.

##### 5.2.1.3.4 NR/GERAN Inter-RAT



Figure 5.2.1.3.4-1: Test model for NR/GERAN Inter-RAT testing

The model consists of dual protocol stack one for NR and one for GERAN. The TTCN implementation for NR and GERAN functionalities will be in separate Parallel Test Components.

This model may also be used in conjunction with the NR/UTRAN test model, defined in subclause 5.2.1.3.2, in order to provide all 3 RATs: NR, UTRAN and GERAN. The TTCN implementation for NR, UTRAN and GERAN functionalities will be in separate Parallel Test Components.

The SS NR part is the same as the model defined in subclause 5.2.1.1 for NR/5GC L3 testing.

The SS GERAN model for GPRS consists of L1, MAC/ RLC and LLC, configured in normal mode. SNDCP may also be configured. If SNDCP is configured, this shall reference the LL Entity by the LLMEId. They shall perform all of their functions normally. Ciphering is enabled and shall be performed in LLC. XIDs shall be sent/received by the TTCN and the TTCN will then send the XID information to the SS using the G\_CLLC\_XID\_Config\_REQ ASP. Ports are above RLC (GRR messages), LLC (NAS and Data) and SNDCP (User Data).

The SS GERAN model for GSM consists of L1, L2 (MAC/ RLC), configured in normal mode. They shall perform all of their functions normally. Ciphering is enabled and shall be performed in L1. Ports are above L2.

The UE is configured in normal mode. Ciphering/Integrity (PDCP and NAS) are enabled and header compression is not configured in NR. Ciphering is enabled in GERAN.

#### 5.2.1.4 NR supplementary uplink



Figure 5.2.1.4-1: Test model for NR/5GC Layer3 supplementary uplink testing

The NR/5GC Layer3 supplementary uplink test model builds on top of the NR/5GC Layer3 test model, with the differences specified hereafter.

In the SS side:

- The NR cell is configured with one uplink (NUL) carrier and one supplementary uplink (SUL) carrier. See NOTE 1.

- The SUL routing information shall be provided by SS in the common part of the indication ASP when the data is received from the SUL carrier.

- The SS shall monitor both NUL carrier and SUL carrier for PRACH reception. TTCN checks whether RA Msg1 and RA Msg3 are received from NUL or SUL carrier using the SUL routing information in the indication ASP.

- The UL scheduling Grants are configured from TTCN over the system control port for PUSCH transmission on the NUL carrier or the SUL carrier.

NOTE 1: While TS 38.508-1 [5] defines an SUL carrier as a pseudo-standalone NR Cell 33, in the present test model, the SUL carrier is an additional carrier to the NR Cell operating on the NUL carrier. So NR Cell of identity 33 is not used in TTCN.

#### 5.2.1.5 NR-NR dual connectivity

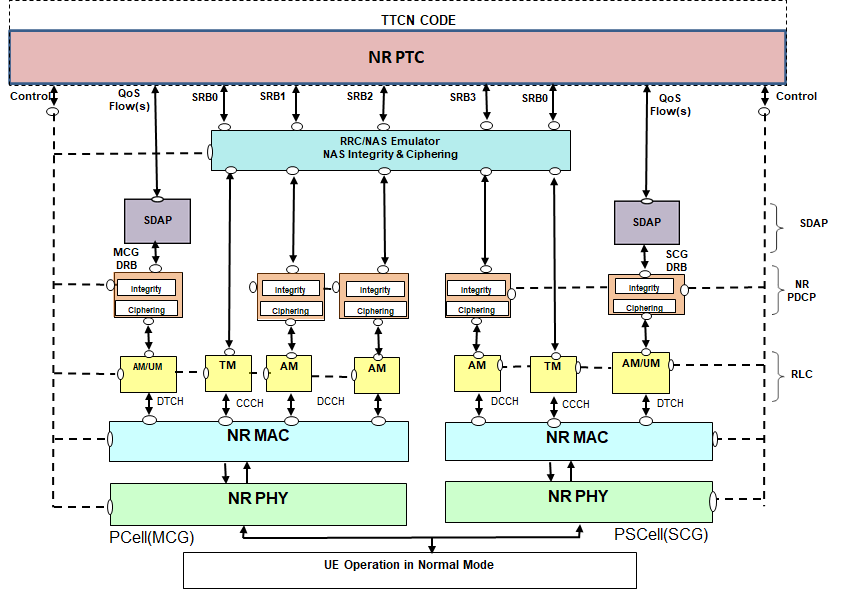


Figure 5.2.1.5-1: Test model for NR/5GC NR-DC Layer3: MCG and SCG

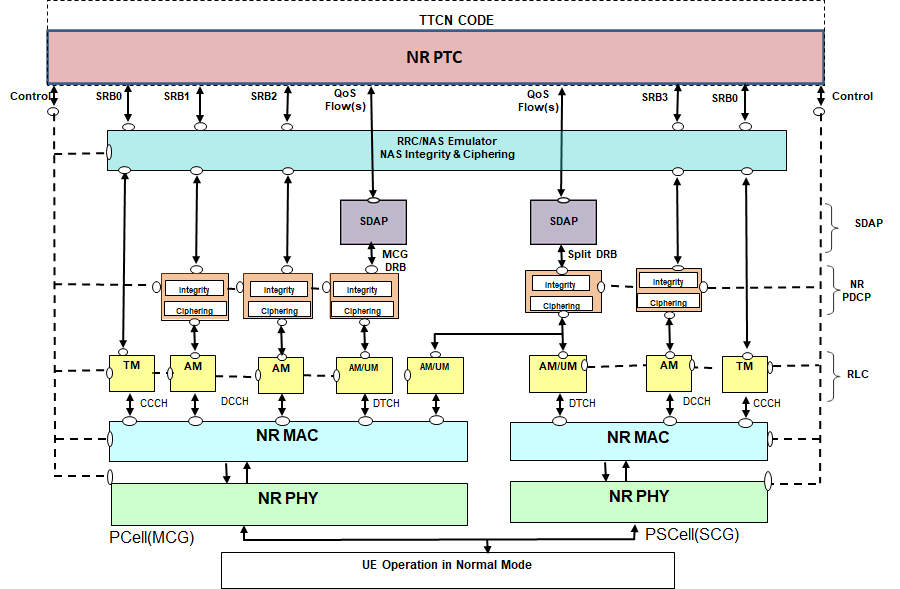


Figure 5.2.1.5-2: Test model for NR/5GC NR-DC Layer3 testing: MCG and split DRB



Figure 5.2.1.5-3: Test model for NR/5GC NR-DC Layer3 testing: Split SRB(s), DRBs removed for clarity

The NR/5GC Layer3 NR-DC test model builds on top of the NR/5GC Layer3 test model, with the differences specified hereafter:

- SRB1 and SRB2 are configured only in the PCell,

- SRB3 can be configured in the PSCell,

- The NR PDCP can be configured in split for one or more SRBs or DRBs. In this case NR PDCP is configured in one cell and a proxy PDCP will be configured in the other cell. The SS shall route data to/from either cell, via the routing information provided.

#### 5.2.1.5A NR-E-UTRA dual connectivity

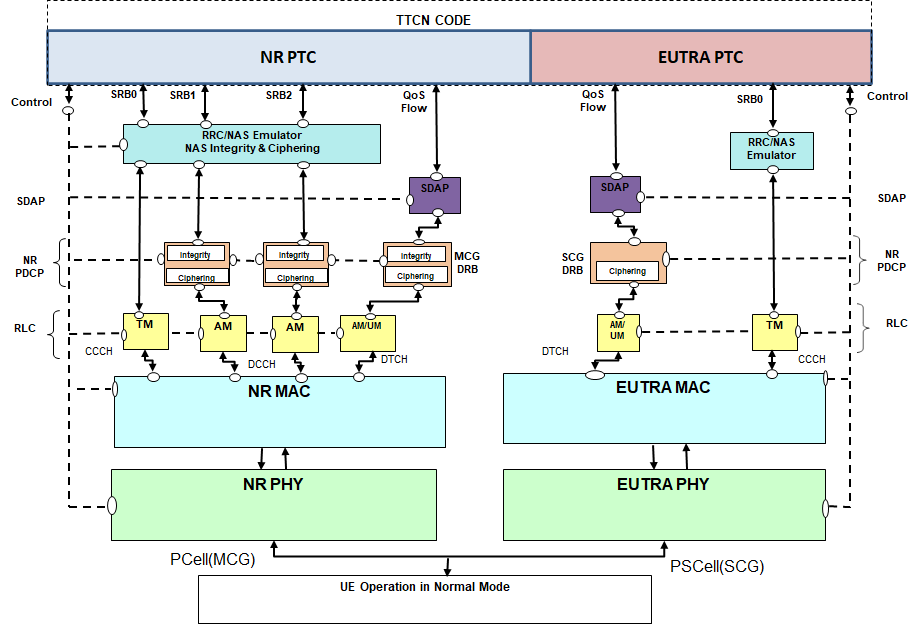


Figure 5.2.1.5A-1: Test model for NR/5GC NE-DC Layer3: MCG and SCG

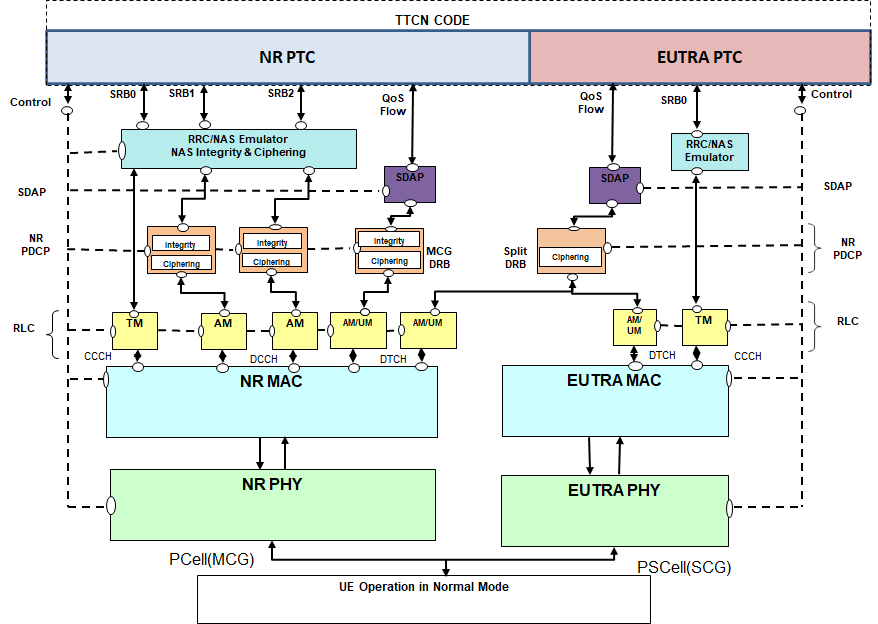


Figure 5.2.1.5A-2: Test model for NR/5GC NE-DC Layer3 testing: MCG and split DRB, E-UTRA terminated

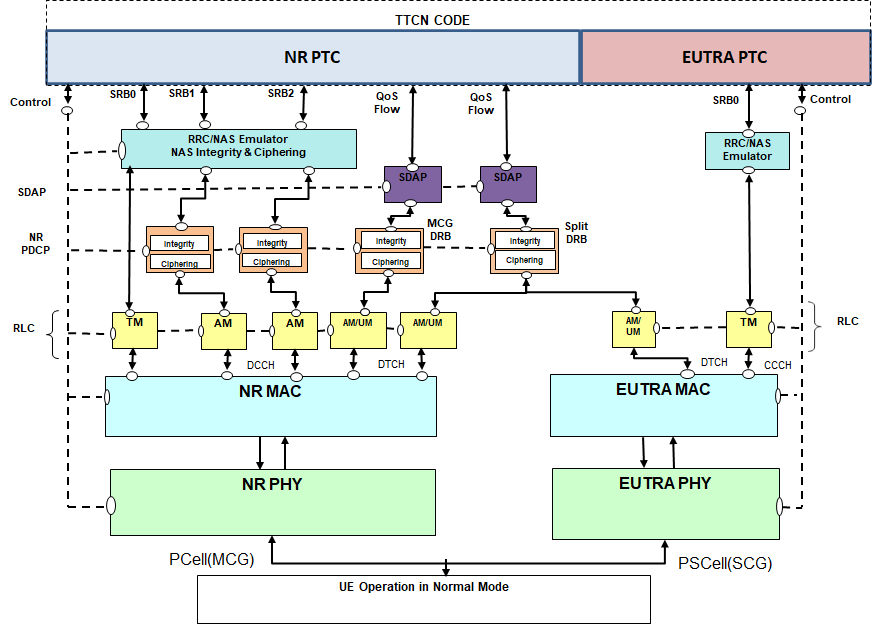


Figure 5.2.1.5A-3: Test model for NR/5GC NE-DC Layer3 testing: MCG and split DRB, NR terminated

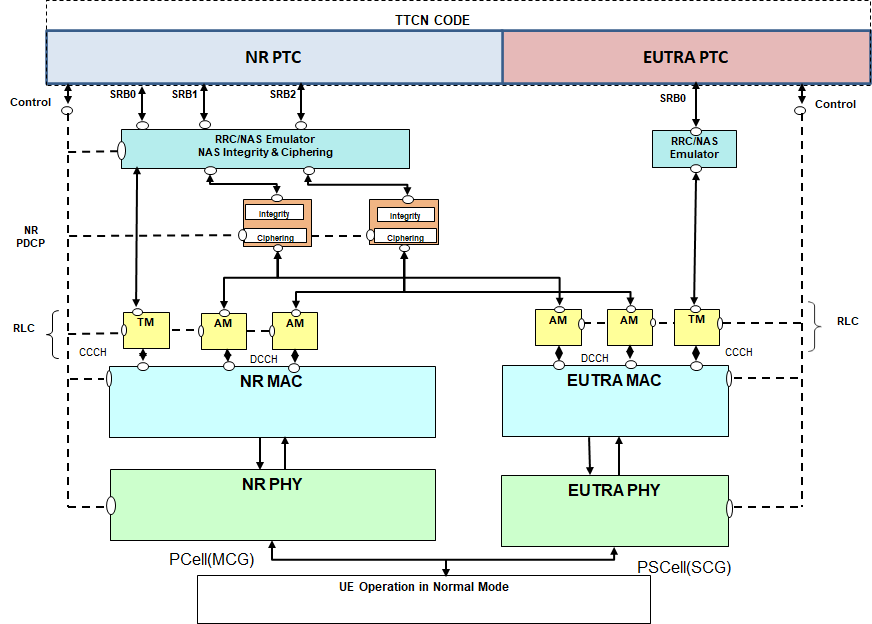


Figure 5.2.1.5A-4: Test model for NR/5GC NE-DC Layer3 testing: Split SRB(s), DRBs removed for clarity

The NR/5GC Layer3 NE-DC test model builds on top of the NR/5GC Layer3 test model, with the differences specified hereafter:

- SRBs 0, 1 and 2 are configured in NR.

- Only SRB0 is configured in E-UTRA and is connected directly to the SRB port in the E-UTRA RRC/NAS emulator.

- On the SS side E-UTRA L1, MAC and RLC are configured in normal way and shall perform all their functions.

- Only NR PDCP is configured in both NR and E-UTRA (E-UTRA PDCP is not used). This can be configured in split for one or more SRBs or DRBs. In this case NR PDCP is configured in one cell and a proxy PDCP will be configured in the other cell. The SS shall route data to/from either cell, via the routing information provided.

- SDAP can be configured in both NR and E-UTRA.

#### 5.2.1.6 Void

### 5.2.2 Layer 2

#### 5.2.2.1 SDAP



Figure 5.2.2.1-1: Test model for NR/5GC SDAP testing

The UE is configured in Test Loop Mode, to loop back the user domain data above SDAP layer. On UE side Ciphering is enabled with null algorithm and header compression is not configured.

On the SS, Layer 1, MAC, RLC and PDCP are configured in the normal operation. The SDAP is configured in a special mode, where SS does not add any SDAP header in DL and does not remove any SDAP header in UL at the DRB port on the NR PTC. The TTCN code will take care of the SDAP header handling and of the QoS flow to DRB mapping, i.e. the SS will route DL SDAP PDUs from TTCN to the corresponding DRB.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port.

#### 5.2.2.2 PDCP

##### 5.2.2.2.1 Single NR carrier



Figure 5.2.2.2.1-1: Test model for NR/5GC PDCP testing

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer. On UE side Ciphering is enabled as null algorithm and header compression is not configured.

On the SS NR, Layer 1, MAC and RLC is configured in the normal operation.

The PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.2.2.2.2 NR-NR dual connectivity



Figure 5.2.2.2.2-1: Test model for NR/5GC NR-DC PDCP testing (*split DRB*)

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer.

On UE side Ciphering is enabled as null algorithm and header compression is not configured.

The SS configures in the First Cell, Layer 1, MAC and RLC in the normal operation. The NR PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

The SS configures in the Second Cell, Layer 1, MAC and RLC in the normal operation. The NR PDCP is configured as Proxy. DRB data will be sent between the NR PDCP Proxy and the NR PDCP.

Note that the First Cell refers to MCG PCell and the Second Cell to SCG PSCell, or vice versa.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.2.2.2.3 NR-E-UTRA dual connectivity

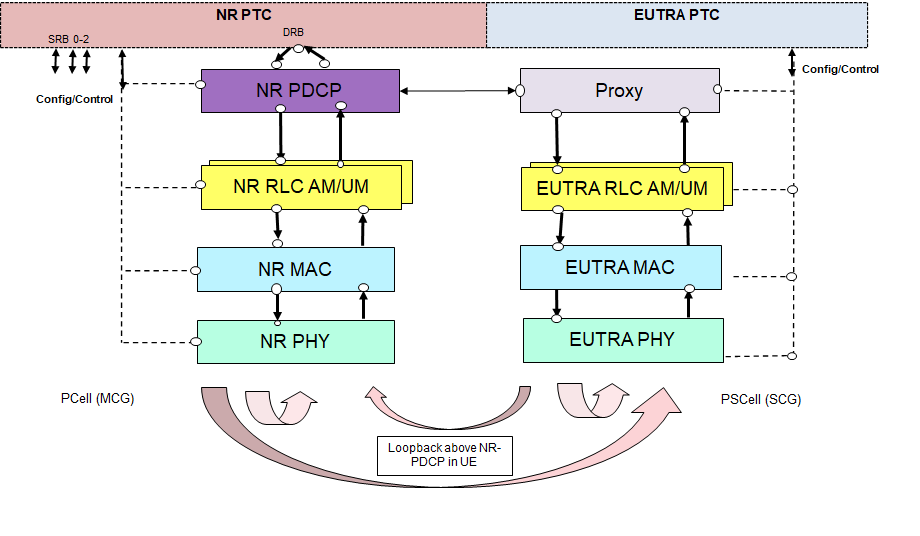


Figure 5.2.2.2.3-1: Test model for NE-DC PDCP testing (*split DRB*)

The UE is configured in Test Loop Mode, to loop back the user domain data above NR PDCP layer.

On UE side Ciphering is enabled as null algorithm and header compression is not configured.

Test Loop Mode can be active on split DRB as shown in Figure 5.2.2.2.3-1.

On the SS NR, SRBs 0,1 and 2 are configured as per Layer3 test model. The Layer1, MAC and RLC of the MCG bearer are configured in normal operation. The PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

On the SS E-UTRA the Layer1, MAC and RLC of the SCG bearer are configured in normal operation. The PDCP layer of the SCG leg is configured as Proxy mode, TTCN shall configure E-UTRA for NE-DC PDCP testing only when a Test Loop Mode is active on a split DRB.

The SS shall route DL PDCP PDUs from TTCN to PCell and/or PSCell and SS shall indicate that the UL PDCP PDU is received from PCell or PSCell.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.2.2.2.4 NR carrier aggregation

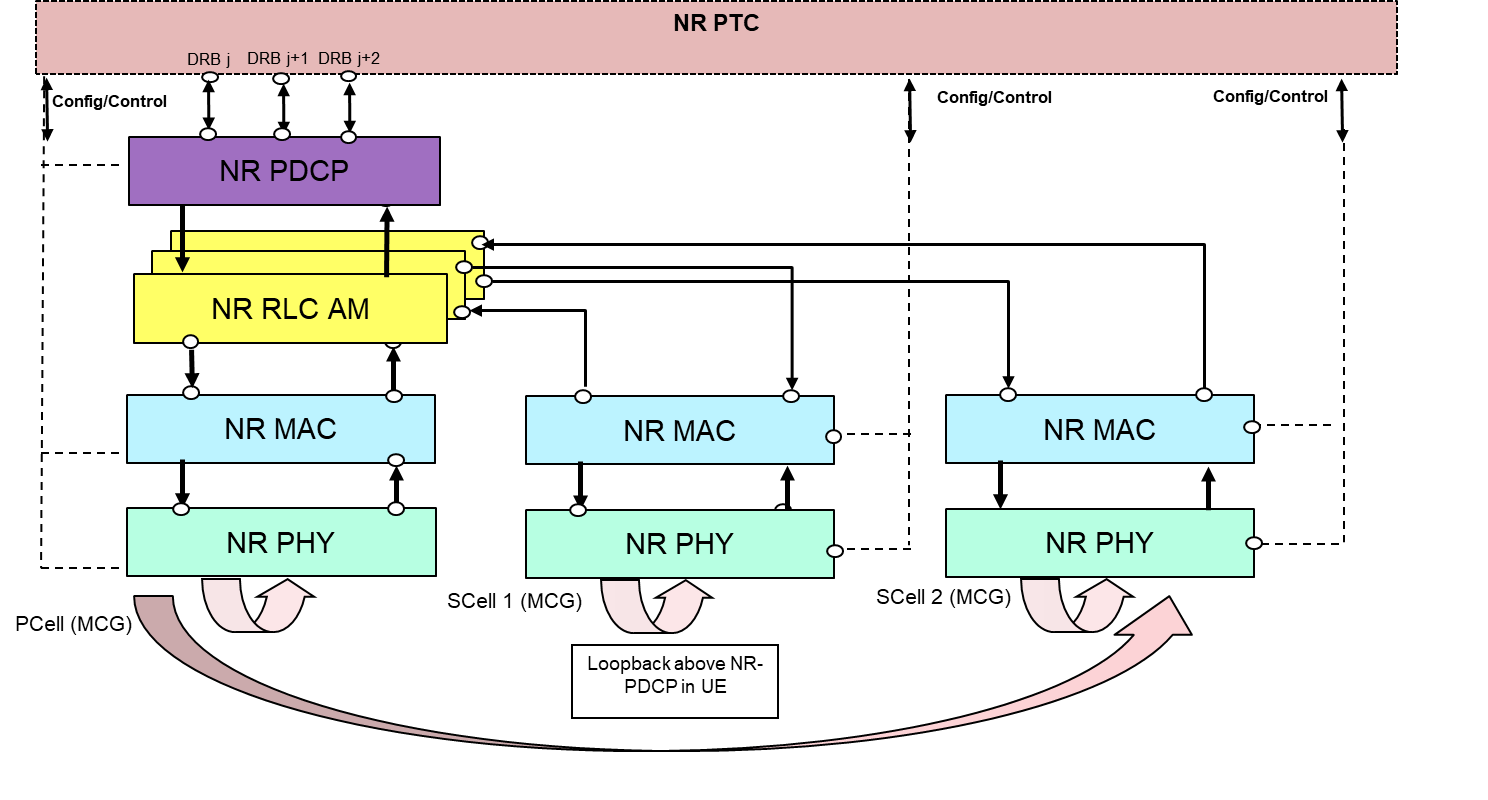


Figure 5.2.2.2.4-1: Test model for NR CA PDCP testing

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer.

On UE side Ciphering is enabled as null algorithm and header compression is not configured.

The SS configures in the PCell, Layer 1, MAC and RLC in the normal operation. The NR PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

The SS is configured with one or two SCell(s), the figure 5.2.2.2.4-1 shows 2 SCells.

The SS configures DRB j, DRB j+1 and DRB j+2 on the PCell, every DRB is connected to an RLC entity. The RLC entity configured on DRB j is linked to the MAC entity on the PCell, the RLC entity configured on DRB j+1 is linked to the MAC entity on the SCell 1 and the DRB j+2 is linked to the MAC entity on the SCell 2.

The SS configures SCell 1 with Layer 1, MAC in normal operation. The MAC entity of each SCell is linked to the RLC entity on DRB j+1 of the PCell.

The SS configures SCell 2 with Layer 1, MAC in normal operation. The MAC entity of each SCell is linked to the RLC entity on DRB j+2 of the PCell.

The NR data routing between the RLC layer of PCell and the lower layers of either PCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.2.2.2.5 NR-NR dual connectivity with NR carrier aggregation

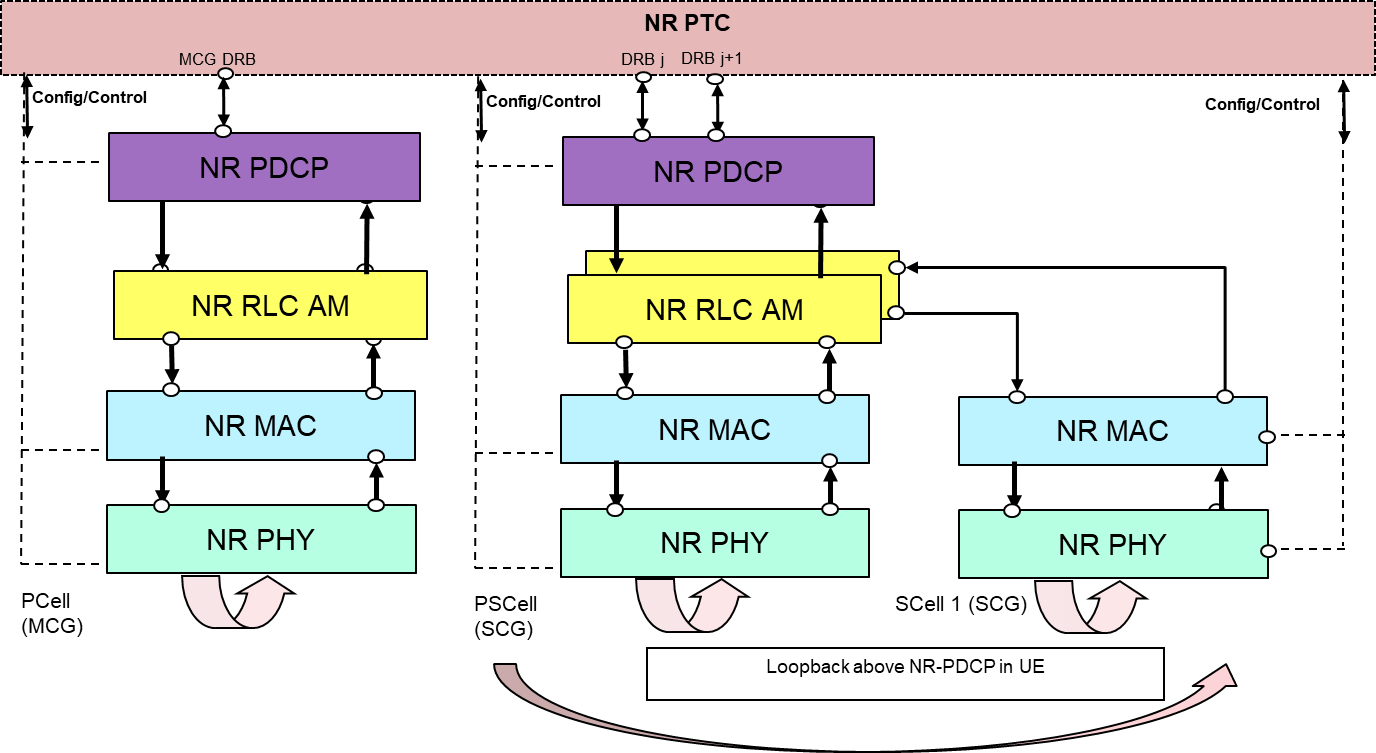


Figure 5.2.2.2.5-1: Test model for NR/5GC NR-DC with NR CA duplication in PDCP testing

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer.

On UE side Ciphering is enabled as null algorithm and header compression is not configured.

The SS configures in the PCell, Layer 1, MAC and RLC in the normal operation.

On the NR side, the SS configures in the PSCell, Layer 1, MAC and RLC in the normal operation. The NR PDCP is configured in a special mode, where SS does not add any PDCP headers in DL and/or not remove any PDCP headers in UL directions respectively at DRB port on the NR PTC. The TTCN maintains sequence numbers and state variables for the PDCP layer.

The SS configures DRB j and DRB j+1 on the PSCell, every DRB is connected to an RLC entity. The RLC entity configured on DRB j is linked to the MAC entity on the PSCell, the RLC entity configured on DRB j+1 is linked to the MAC entity on the SCell.

The SS configure SCell with Layer 1, MAC in normal operation. The MAC entity of the SCell is linked to the RLC entity on DRB j+1 of the PSCell.

The NR data routing between the RLC layer of PSCell and the lower layers of either PSCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured.

##### 5.2.2.2.6 Ethernet header compression

EHC testing uses the PDCP test model specified in subclause 5.2.2.2.1, with the following differences.

EHC is configured in both directions (DRB created in pre-test conditions).

TTCN implements and operates the EHC compressor and the EHC decompressor. The PDCP layer at the SS handles EHC compressed packets (i.e. EHC full header packets and EHC compressed header packets) to/from the TTCN. These PDUs are each associated with one PDCP SDU.

The UE is expected to be configured with an Ethernet MAC address.

#### 5.2.2.3 RLC



Figure 5.2.2.3-1: Test model for NR/5GC RLC testing

The UE is registered in NR, using SRBs 0-2, and configured for NR/5GC operation.

This model is suitable for testing both UM/AM mode of operation of DRBs on UE side.

The UE is configured in Test Loop Mode, to loop back the user domain data above PDCP layer. On UE side Ciphering is enabled (since mandatory) but with null ciphering algorithm, which is equivalent to not using ciphering. Header compression is not configured on UE side.

On the SS Side, L1 and MAC are configured in the normal way. The RLC of the DRBs is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no PDCP configured on SS side. The ports are directly above RLC.

The PDUs, exchanged between TTCN and SS, shall be the final RLC PDUs consisting of RLC and PDCP headers. TTCN code shall take care in DL of building RLC headers and PDCP headers and in UL handle RLC and PDCP headers. TTCN code shall take care of maintaining sequence numbers and state variables for RLC and PDCP layers. If RLC on UE side is in AM mode, TTCN shall take care of generating polls in DL and responding with RLC control PDUs on reception of UL Poll.

#### 5.2.2.4 MAC

##### 5.2.2.4.1 Single NR carrier



Figure 5.2.2.4.1-1: Test model for NR/5GC MAC testing

The UE is configured in Test Loop Mode A, to loop back the User Plane data above PDCP layer. On UE side Ciphering is enabled (since Mandatory) but with null ciphering algorithm, which is equivalent to not using ciphering. Header compression is not configured on UE side.

On the SS Side the NR MAC test model expects no split bearers to be configured.

On the SS NR, Layer 1 is configured in the normal way. NR MAC is configured in a special mode, where it does not add any MAC headers in DL and /or not remove any MAC headers in UL directions respectively at DRB port. In this case, the TTCN shall provide the final MAC PDU, including padding. Except for this, the NR MAC layer shall perform all its other functions. SRBs are configured as in Layer 3 test model in normal operation.

On DRBs the NR RLC is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no NR PDCP and SDAP configured on SS Side. The ports are directly above NR RLC.

There are two different test modes in which NR MAC header addition/removal can be configured:

1. DL/UL header-transparent mode: no header addition in DL and no header removal in UL.

2. DL only header-transparent mode: no header addition in DL; UL NR MAC is configured in normal mode to remove MAC header and de-multiplex the MAC SDUs according to the logical channel Ids.

If SS NR MAC is configured in DL/UL header-transparent mode, the PDUs, exchanged at the DRB port between TTCN and SS, shall be the final MAC PDUs consisting of MAC, RLC and PDCP headers. TTCN code shall take care in DL of building MAC header, RLC headers and PDCP headers and in UL handle MAC, RLC and PDCP headers. TTCN code shall take care of maintaining sequence numbers and state variables for RLC and PDCP layers. During testing of multiple DRBs at the UE side, it shall still be possible to configure only one DRB on SS side with configuration in the figure 5.2.2.4.1-1. Other DRBs will not be configured, to facilitate routing of UL MAC PDUs. Multiplexing/de-multiplexing of PDUs meant/from different DRBs shall be performed in TTCN. Since the MAC layer does not evaluate the MAC headers in UL it cannot distinguish between SRB and DRB data in UL. There shall be no SRB traffic while MAC is configured in this test mode. The SS MAC shall take care of automatic repetitions/retransmission in UL and DL, based on normal MAC HARQ behaviour.

NOTE: There is no need to handle SDAP headers in TTCN for UL/DL as UE Test loop Mode A is above PDCP.

If SS NR MAC is configured in DL only header-transparent mode, the UL PDUs exchanged at the DRB port between TTCN and SS shall be final RLC PDUs consisting of RLC and PDCP headers. SS shall route these PDUs based on logical channel IDs. In DL, TTCN sends fully encoded MAC PDUs at the DRB port (consisting of MAC, RLC and PDCP headers). In this case TTCN needs to take care of maintaining sequence numbers and state variables for RLC and PDCP layers. Furthermore, in UL and DL the SS MAC layer shall be capable of dealing with SRB data (i.e. it shall handle DL RLC PDUs coming from SRB RLC layers or de-multiplex UL RLC PDUs to SRB's) as in normal mode. The SS MAC shall take care of automatic repetitions/retransmissions in UL and DL, based on normal MAC HARQ behaviour. TTCN shall ensure that no DL MAC SDUs in normal mode and DL MAC PDUs in test mode are mixed for the same TTI.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception over system indication port, if configured. In a similar way the reception of PRACH preambles is reported by SS over the same port.

When SS is configured either with *pusch-AggregationFactor* > 1 or with *pusch-RepTypeIndicatorDCI-0-1-r16* set to *pusch-RepTypeB* and SS NR MAC is configured in DL/UL header-transparent mode, SS shall handle UE automatic subsequent repetitions/retransmissions in UL on the same HARQ process according to TS 38.214[22] clause 6.1.2.1, and in addition SS shall transmit to TTCN every received UL HARQ transmission/retransmission within a bundle as separate MAC PDUs.

##### 5.2.2.4.2 NR carrier aggregation



Figure 5.2.2.4.2-1: Test model for NR/5GC MAC CA testing

The NR/5GC MAC CA test model builds on top of the NR/5GC MAC test model, with the differences specified hereafter.

On the SS NR side, there is one PCell and one SCell configured:

- PCell only: On DRBs the NR RLC is configured in transparent mode. Hence with this configuration PDUs out of SS RLC are same as the SDUs in it. There is no NR PDCP and SDAP configured in the SS. The ports are directly above NR RLC.

- PCell / SCell: Layer 1 is configured in the normal way. NR MAC is configured in a special mode, where it does not add any MAC headers in DL and /or not remove any MAC headers in UL directions respectively at DRB port. In this case, the TTCN shall provide the final MAC PDU, including padding. Except for this, the MAC layer shall perform all of its other functions.

The UL Scheduling Grant and DL Scheduling assignments are configured from TTCN over system control port. SS reports PUCCH scheduling information reception in PCell over system indication port, if configured. In a similar way the reception of PRACH preambles in PCell / SCell is reported by SS over the same port, if configured.

The NR data routing between the RLC layer of PCell and the lower layers of either PCell or SCell shall be provided to/by SS in the common part of the data ASP using the MacBearerRouting field.

## 5.3 NR sidelink

5.3.1 Layer 3

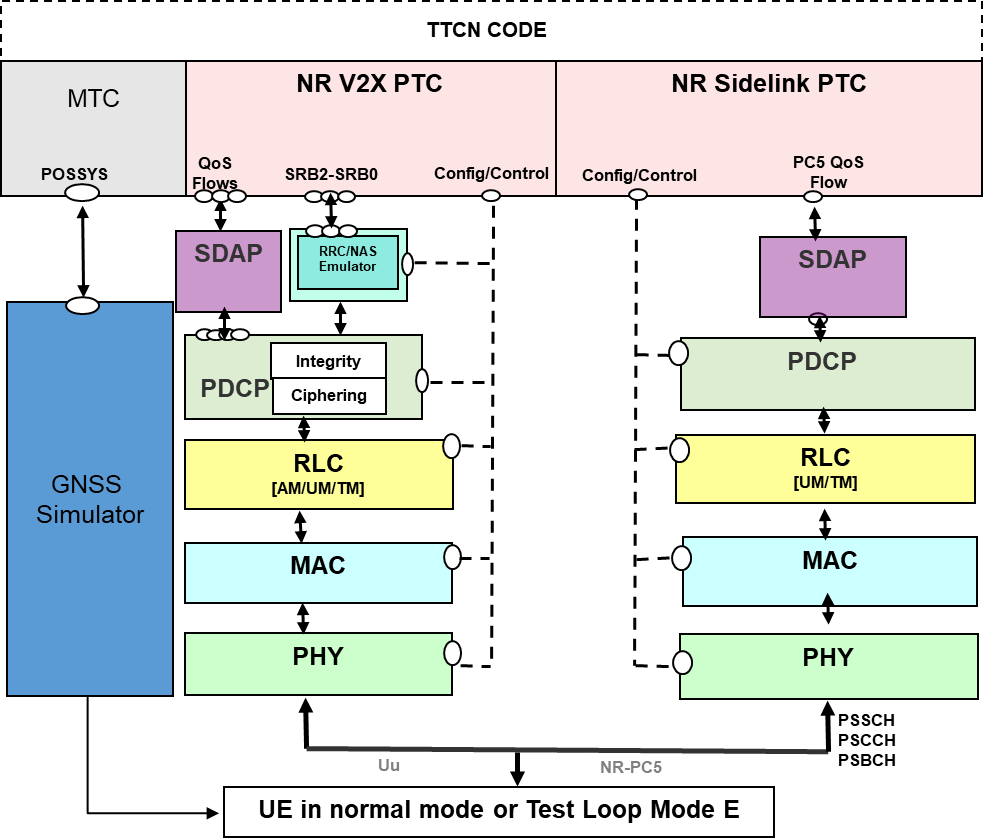


Figure 5.3.1-1: Test model for Layer 3 NR sidelink PC5 broadcast and groupcast in coverage

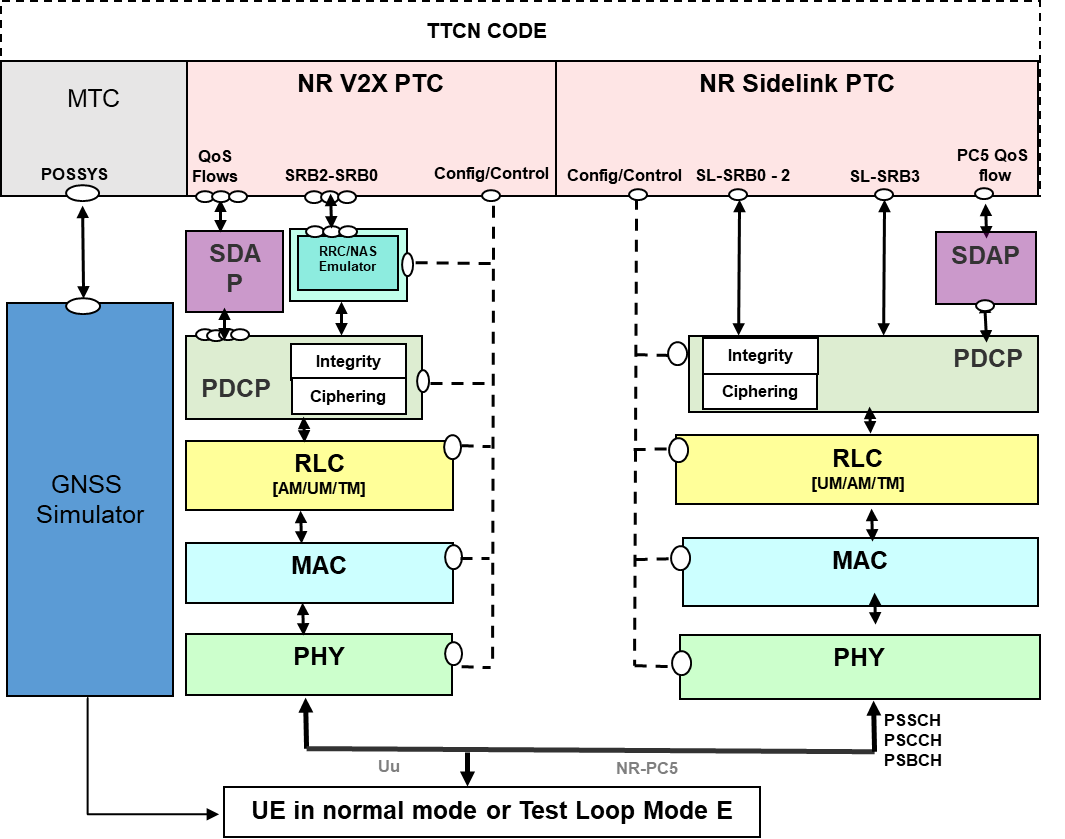


Figure 5.3.1-2: Test model for Layer 3 NR sidelink PC5 unicast in coverage

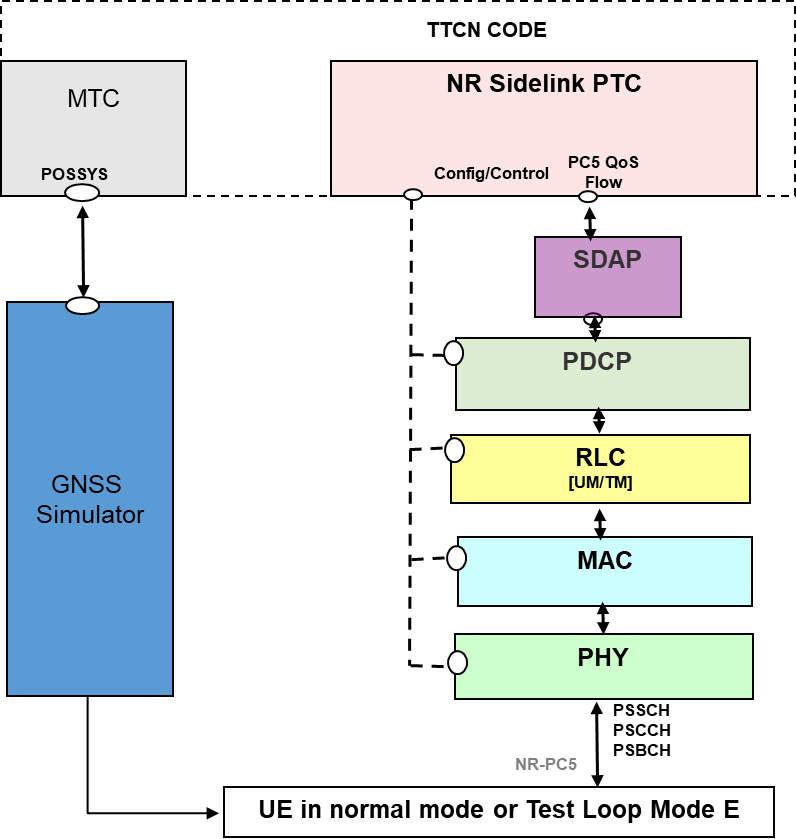


Figure 5.3.1-3: Test model for Layer 3 NR sidelink PC5 broadcast and groupcast out of coverage

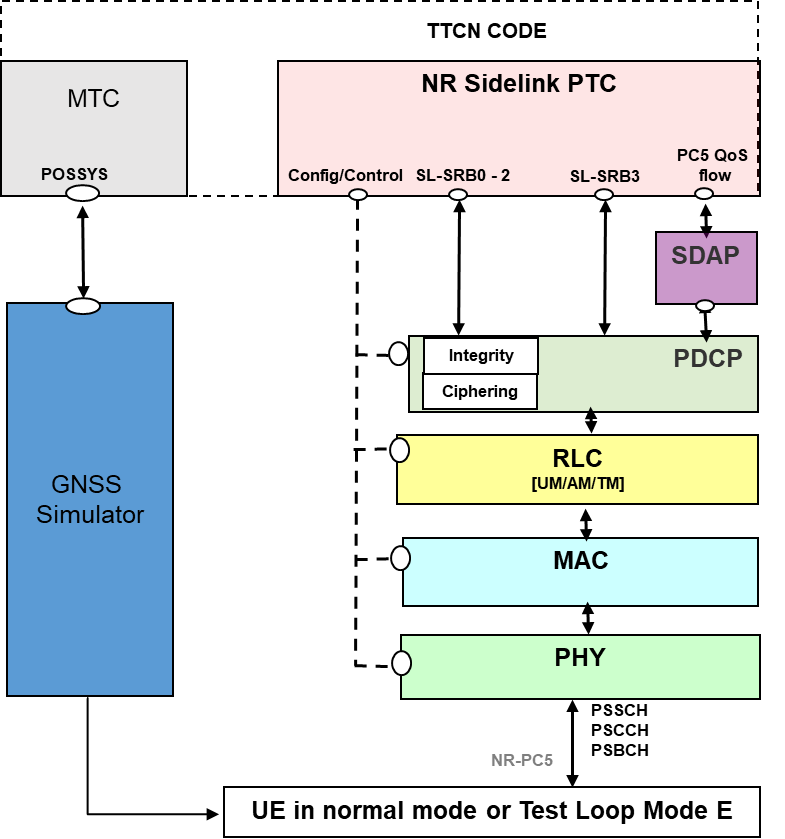


Figure 5.3.1-4: Test model for Layer 3 NR sidelink PC5 unicast out of coverage

The UE is configured in normal mode or in Test Loop Mode E. On the UE side on the Uu interface, ciphering and integrity (PDCP and NAS) are enabled and header compression is not configured. On the UE side on NR-PC5 interface, the NULL integrity algorithm and NULL ciphering is applied and header compression is not configured.

For testing NR sidelink, the system simulator (SS) can implement one or several simulated NR cells as specified in clause 5.1.1.1 and one or several simulated UEs, called hereafter NR-SS-UE. The NR-SS-UE is used to send/receive data with the UE under test over the PC5 interface. A GNSS Simulator is configured when GNSS synchronisation source or a geographical position is required in the test. The requirements for the GNSS simulator (also referred as positioning simulator) are specified in TS 37.571-4 [28]. When UE is in coverage of an NR cell, this is depicted in the NR sidelink test model of Figure 5.3.1-1 for PC5 broadcast and groupcast and Figure 5.3.1-2 for PC5 unicast. When UE is out of coverage of an NR cell, this is depicted in the NR sidelink test model of Figure 5.3.1-3 for PC5 broadcast and groupcast and Figure 5.3.1-4 for PC5 unicast.

The NR-SS-UE is controlled by TTCN in the NR Sidelink PTC and is configured for NR sidelink by TTCN over sidelink system control NR\_SL\_SYS port. The NR-SS-UE can be configured in coverage of an NR cell, out of coverage, UTC synchronised or synchronised on the UE under test. The NR-SS-UE can also be configured for transmission/reception of an SLSS/PSBCH. The NULL ciphering and integrity algorithms are applied. L1, MAC, RLC, PDCP and SDAP are configured in normal way; they shall perform all of their functions. The NR\_SL\_DATA port for transmission and reception of STCH data is above SDAP. The STCH data is considered as raw data.

Editor’s note: MAC, RLC, PDCP and SDAP transparent modes are FFS

# 6 System interface

## 6.1 Upper tester interface

The Upper Tester (UT) interface is the same as specified in TS 36.523-3 [12] clause 5.

In addition, the following MMI commands are defined.

Table 6.1-1: MMI commands

|  |  |  |
| --- | --- | --- |
| Command | Parameters | |
| Name | Value |
| "CAPABILIBY\_ENQUIRY" | "Freq. Band List" | <charstring> |
|  | "Two-Way" | "TRUE" / "FALSE" |
| "CLEAR\_RSNPN" | (none) | |
| "PERIODICAL\_ MEASUREMENT\_PSBCH\_RSRP" | "Report Interval" | <charstring> |
| "SL\_CSI\_RS\_CONFIGURATION" | "Freq. allocation One antenna Port" | <charstring> |
|  | “First symbol" | <charstring> |
|  | "Latency Bound" | <charstring> |
| "SNPN\_AUTOMATIC" | (none) | |
| "SNPN\_MANUAL" | "PLMN" | <PLMN ID> |
| "N\_ID" | <N ID> |
| "SNPN\_SUBSCRIBER\_DATA" | "PLMN" | <PLMN ID> |
| "N\_ID" | <N ID> |
| "UEAI" | "SL-QoS Flow ID" | <charstring> |
| "UNICAST\_SLDRB" | "Action" | "ESTABLISH" / "MODIFY" / "RELEASE" |

The following AT commands are also applied in the TTCN.

Table 6.1-2: AT Commands

|  |
| --- |
| Command |
| AT+C5GNSSAI |
| AT+C5GNSSAIRDP |
| AT+C5GQOS |
| AT+ CGBRRREQ |
| AT+CMICO |

AT commands are referred to TS 27.007 [49].

## 6.2 Abstract system primitives

### 6.2.1 Introduction

The present subclause 6.2 specifies the abstract system primitives (ASPs) used on the system interface to configure and control the SS.

### 6.2.2 General requirements and assumptions

The requirements and assumptions specified in TS 36.523-3 [12] subclause 6.1 apply to the present document.

### 6.2.3 E-UTRAN ASP definitions

Please refer to TS 36.523-3 [12] subclause 6.2.

### 6.2.4 NR ASP definitions

See Annex D.

### 6.2.5 UTRAN ASP definitions

Please refer to TS 36.523-3 [12] subclause 6.3.

### 6.2.6 WLAN ASP definitions

Please refer to TS 36.523-3 [12] Annex D.

### 6.2.7 GERAN ASP definitions

Please refer to TS 36.523-3 [12] subclause 6.4.

# 7 Test methods and design considerations

## 7.1 Common aspects

### 7.1.1 Introduction

Subclause 7.1 specifies test methods and design considerations that are common to all 5GS deployment options.

### 7.1.2 Physical layer aspects

#### 7.1.2.1 Search spaces and DCI

##### 7.1.2.1.1 Parameters

For each search space there are several parameters specifying the location of this search space in the time and frequency domain.

###### 7.1.2.2.1.1 Search space configuration

|  |  |
| --- | --- |
| **PDCCH monitoring periodicity** | |
| **Comment/description** | slot periodicity in time domain |
| **ASN.1 parameter** | SearchSpace.monitoringSlotPeriodicityAndOffset |
| **Core spec reference** | TS 38.213 [21] clause 10.1 |
| **PDCCH monitoring offset** | |
| **Comment/description** | slot offset |
| **ASN.1 parameter** | SearchSpace.monitoringSlotPeriodicityAndOffset |
| **Core spec reference** | TS 38.213 [21] clause 10.1 |
| **PDCCH monitoring pattern** | |
| **Comment/description** | first symbol(s) of the control resource set within a slot for PDCCH monitoring; in general a search space starts with first symbol of a slot; the duration is given by the L1 parameter 'CORESET-time-duration' |
| **ASN.1 parameter** | SearchSpace.monitoringSymbolsWithinSlot |
| **Core spec reference** | TS 38.213 [21] clause 10.1 |
| **CORESET time duration** | |
| **Comment/description** | Duration of a search space in time domain: 1, 2 or 3 symbols |
| **ASN.1 parameter** | ControlResourceSet.duration |
| **Core spec reference** | TS 38.213 [21] clause 10.1 |
| **CORESET frequency domain allocation** | |
| **Comment/description** | Bitmap specifying the frequency domain allocation of a search space  NOTE: The allocations needs to fit into the BWP to which the CORESET belongs |
| **ASN.1 parameter** | ControlResourceSet.frequencyDomainResources |
| **Core spec reference** | TS 38.213 [21] clause 10.1, TS 38.211 [19] clause 7.3.2.2 |

##### 7.1.2.1.2 PDCCH search spaces

For each configured DL BWP, the TTCN may configure one or several search spaces.

For each search space, TTCN configures the SS with:

- The configuration of this search space as given to the UE, enabling the SS to determine the PDCCH transmission occasions (same as the UE PDCCH monitoring occasions) and associated CORESET.  
For SearchSpaceZero the configuration according to TS 38.213 [21] clauses 10.1 and 13 is mapped to ASN.1 type SearchSpace to configure the SS; for CORESET#0 the configuration according to TS 38.211 [19] clause 7.3.2.2 is mapped to ASN.1 type ControlResourceSet to configure the SS.

- The CCE aggregation level *L* that the SS shall use for PDCCH transmission on this search space.  
In general an aggregation level of 4 is used for SearchSpaceZero, common and UE-specific search space.

- The priority *P* of this search space that the SS shall consider in its PDCCH candidate selection algorithm.

- a value of 0 represents the highest priority, a value of 1 the second highest priority and so on.

NOTE: “Search space” is used in terms of TS 38.213 [21] clause 10.1 and a single search space configuration (ASN.1 type ‘SearchSpace’) may contain several search spaces (see NR\_BWP\_SearchSpaceConfig\_Type in Annex D).

##### 7.1.2.1.3 DCI formats

###### 7.1.2.1.3.1 Introduction

The SS shall support several DCI formats. For each 5GS option, the set of DCI formats to support may be different (see relevant option-specific subclauses).

###### 7.1.2.1.3.2 Timing

The transmission of DCI formats may be explicitly requested from TTCN or semi-autonomously handled by the SS. In case of explicit request:

- If the associated timing information is explicit, the TTCN shall ensure that this timing information matches one of the configured PDCCH transmission occasions.

- If the associated timing information is now, the SS shall determine and use the next valid PDCCH transmission occasion.

###### 7.1.2.1.3.3 DAI

In the DCI formats to be used by the SS, TTCN may set the DAI fields explicitly or may configure the SS to set the DAI fields automatically. TTCN configures the DAI parameters in the SS according to one of the columns of Table 7.1.2.1.3.3-1.

Table 7.1.2.1.3.3-1: DAI parameter settings

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| DAI field \ HARQ-ACK Codebook | Semi-static | | Dynamic  with 1 sub-codebook | | Dynamic  with 2 sub-codebooks | |
| type | Explicit mode | Auto mode | Explicit mode | Auto mode | Explicit mode | Auto mode |
| DCI0\_1 FirstDAI | Index | Automatic | Index | Automatic | Index | Automatic |
| DCI0\_1 SecondDAI | None | None | None | None | Index | Automatic |
| DCI1\_0 DAI | Index | Automatic | Index | Automatic | Index | Automatic |
| DCI1\_1 DAI | None | None | Index | Automatic | Index | Automatic |

When TTCN configures the SS to use the automatic mode, the SS shall:

- Create DL association/transmission set, according to the setting by TTCN of TimeDomain, PdschHarqTimingIndicator and PucchResourceIndicator for DCI formats 1\_x, their associated transmission timing information, and the set of serving cells configured, then

- Identify the need to multiplex a HARQ-ACK codebook into a PUSCH transmission according to above DL association/transmission set and the transmission timing information of received UL Grant(s), then

- Set the DAI fields in the DCI formats 1\_x and 0\_1 according to the above and the requirements on DAI values specified in TS 38.213 [21] subclause 9.1.2 for semi-static HARQ-ACK Codebook or subclause 9.1.3 for dynamic HARQ-ACK Codebook.

##### 7.1.2.1.4 PDCCH candidate selection

The SS shall consider search space priorities as configured by TTCN to find appropriate PDCCH candidates for scheduling of DCI formats in case of:

a) Overlapping search spaces:

- Depending on system configuration and slot number candidates of the different search spaces may be located in same (or overlapping) CCEs.

- Example: system information is automatically scheduled by the SS and UE-specific data transmission requires scheduling of PDCCH for the same slot and symbols

=> Candidates of the UE-specific search space may collide with actual PDCCH of a common search space (e.g. system information).

b) Within a search space if different search space types are mapped to the same search space configuration.

For every PDCCH assignment (in terms of TS 38.213 [21] clause 10.1) the SS shall apply the PDCCH candidate selection algorithm specified hereafter:

1) For each search space the SS selects the PDCCH candidate with index m(search space, L) = 0

With (see TS 38.213 [21] subclause 10.1):

- candidate index m(search space, L) := 0 .. M(search space, L) - 1;

- M(search space, L): number of PDCCH candidates per CCE aggregation level for the given search space;

- L: CCE aggregation level

2) If there is an overlapping of the selected candidates, the SS shall:

- keep the PDCCH candidate of the search space with higher priority *P*,

- increment m for the search space with lower priority;

3) The SS shall repeat 2) until there is no overlapping anymore.

In the following cases the SS shall raise an error:

i) Collision of PDCCH candidates of search spaces with the same priority,

ii) When a DL transmission or a single UL grant is scheduled with specific TimingInfo and after applying the above rules there is no PDCCH candidate left anymore.  
NOTE: For TimingInfo 'Now' there is no error as the SS can shift the transmission to the next PDCCH occasion

In case of continuous UL grant configuration, the SS shall not raise an error when a grant cannot be scheduled at a specific point in time but skip it, if the grant is configured to be at every occasion, or shift it to the next occasion otherwise.

#### 7.1.2.2 Downlink resource allocation

##### 7.1.2.2.1 Parameters

There are several parameters specifying the resource allocation on PDCCH (see subclause 7.1.2.2.1.1) and PDSCH for a DL transmission. The following sub-clauses summarise the parameters being most relevant for downlink resource allocation from the test model’s point of view.

###### 7.1.2.2.1.1 Time domain resource allocation

For time domain resource allocation, either a default PDSCH time domain allocation according to TS 38.214 [22] clause 5.1.2.1.1 is applied or a table (pdsch-AllocationList) is configured via RRC signalling (pdsch-ConfigCommon.pdsch-TimeDomainAllocationList or pdsch-Config.pdsch-TimeDomainAllocationList, see TS 38.331 [16]). This table corresponds to L1 parameter “pdsch-AllocationList” and the entries are referred to by DCI.

pdsch-AllocationList has the following fields:

|  |  |
| --- | --- |
| **PDSCH slot offset (K0)** | |
| **Comment/description** | Slot offset of PDSCH transmission based on the corresponding PDCCH transmission (DCI) Assuming the same numerology for PDSCH and PDCCH:  K0 = 0 PDCCH and corresponding PDSCH transmission are in the same slot K0 > 0 PDCCH and corresponding PDSCH transmission are in different slots |
| **ASN.1 parameter** | PDSCH-TimeDomainResourceAllocation.k0 |
| **Core spec reference** | TS 38.214 [22] clause 5.1.2.1 |
| **PDSCH mapping type** | |
| **Comment/description** | PDSCH mapping type A or B NOTE: In general - at least for early releases - type A is expected to be used by conformance testing (Type B seems to be intended for mini-slots) |
| **ASN.1 parameter** | PDSCH-TimeDomainResourceAllocation.mappingType |
| **Core spec reference** | TS 38.214 [22] clause 5.1.2.1 |
| **Start and length indicator (SLIV)** | |
| **Comment/description** | The SLIV specifies the starting symbol (S) and the number of symbols (L) of the PDSCH resource assignment according to TS 38.214 [22] clause 5.1.2.1; valid start/length combinations depend on the PDSCH mapping type |
| **ASN.1 parameter** | PDSCH-TimeDomainResourceAllocation.startSymbolAndLength |
| **Core spec reference** | TS 38.214 [22] clause 5.1.2.1 |

###### 7.1.2.2.1.2 Frequency domain resource allocation configured at the UE via RRC signalling

|  |  |
| --- | --- |
| **Resource allocation type** | |
| **Comment/description** | Specifies the format of the frequency domain resource assignment field of DCI format 1\_1 (resource allocation type 0, resource allocation type 1 or both)  NOTE: for DCI format 1\_0 this parameter seems to be not relevant. |
| **ASN.1 parameter** | PDSCH-Config.resourceAllocation |
| **Core spec reference** | TS 38.212 [20] clause 7.3.1.2.2 |

###### 7.1.2.2.1.3 DCI parameters

|  |  |
| --- | --- |
| **Frequency domain resource assignment** | |
| **Comment/description** | Resource allocation type 0: bitmap indicating resource block groups (RBGs) being allocated to the UE  Resource allocation type 1: resource indication value (RIV) indicating start and length of a set  of contiguously allocated resource blocks  NOTE: for DCI format 1\_0 only resource allocation type 1 is applicable (according to TS 38.214 [22] clause 5.1.2.2) |
| **Core spec reference** | TS 38.212 [20] clauses 7.3.1.2.1 and 7.3.1.2.2, TS 38.214 [22] clause 5.1.2.2 |
| **Time domain resource assignment** | |
| **Comment/description** | Index addressing pre-configured time domain resource allocation (see clause 7.1.2.2.1.1) |
| **Core spec reference** | TS 38.212 [20] clauses 7.3.1.2.1 and 7.3.1.2.2 |
| **VRB-to-PRB mapping** | |
| **Comment/description** | To distinguish non-interleaved and interleaved allocation of virtual resource blocks in case of resource allocation type 1 |
| **Core spec reference** | TS 38.212 [20] clauses 7.3.1.2.1 and 7.3.1.2.2, TS 38.214 [22] clause 5.1.2.2 |
| **Modulation and coding scheme (MCS)** | |
| **Comment/description** | Modulation and coding scheme according to TS 38.214 [22] clause 5.1.3: The DCI provides the MCS index (**IMCS**) which refers to the respective tables in clause 5.1.3.1 of TS 38.214 [22] |
| **Core spec reference** | TS 38.212 [20] clauses 7.3.1.2.1 and 7.3.1.2.2, TS 38.214 [22] clause 5.1.3 |
| **Antenna port configuration** | |
| **Comment/description** | Configuration of antenna port(s) according to tables 7.3.1.2.2-1/2/3/4 of TS 38.212 [20] for DCI format 1\_1: Specifies the number of CDM groups without data and the antenna ports being used for a transmission. The number of CDM groups affects the number of REs which cannot be used for PDSCH transmission according to step 1 of clause 5.1.3.2 in TS 38.214 [22]. The number of antenna ports being used for the DL transmission corresponds to the number of layers **υ** being used for the respective transport block transmission (1, 2, 3 or 4 layers per transport block). DCI format 1\_0 does not have any field for antenna port configuration:  TS 38.214 [22] clause 5.1.6.2 specifies that in general the UE shall assume 2 CDM groups i.e. there are no REs available for PDSCH transmission in any symbol where DMRS is sent. Regarding the number of layers υ=1 is assumed for PDSCH transmissions scheduled with DCI format 1\_0 |
| **Core spec reference** | TS 38.212 [20] clauses 7.3.1.2.2, TS 38.214 [22] clause 5.1.3, TS 38.211 [19] clause 7.3.1.3/4 |

##### 7.1.2.2.2 Timing

The timing information provided by the request ASP for a DL transmission specifies the slot in which the DCI on PDCCH is transmitted scheduling the corresponding PDSCH transmission. The exact timing of the PDSCH transmission is depending on the parameters for time domain resource allocation as described in the previous clause. If the timing information specifies a specific slot it is up to TTCN that an appropriate search space is configured for this slot. The SS shall not schedule the DL transmission otherwise and may raise an error.

In case of TimingInfo indicating “Now” or “Any slot” it is up to the SS to find the appropriate slot for scheduling of the DCI. The SS shall not use slots in which SS/PBCH blocks are scheduled.  
NOTE: The restriction for slots containing SS/PBCH can be removed when there is clarification in core specs (e.g. TS 38.214 [22]) how “rate matching around” SS/PBCH blocks is reflected in the calculation of the transport block size (see clause 7.1.2.2.4).

In case of TimingInfo not being “Now” TTCN shall ensure that the data is scheduled at least 100ms in advance. Furthermore, it is up to the test case prose to avoid any overlapping of PDSCH and PDCCH transmissions in time domain and it is up to TTCN implementation to address an appropriate slot for which the TBS size determination is well-defined according to clause 7.1.2.2.4; the SS shall raise an error otherwise.

When SS is configured with *pdsch-AggregationFactor*, SS shall repeat PDSCH data on the same HARQ process automatically in *pdsch-AggregationFactor* consecutive slots. As according to TS 38.214[22] clause 5.1.2.1, for any of the consecutive slots, if at least one symbol from a set of symbols where SS schedules PDSCH transmission in the slot is an uplink symbol, then SS shall skip transmission in that slot.

Figures 7.1.2.2.2-1 and 7.1.2.2.2-2 illustrate the timing for K0 = 0 and K0 > 0.

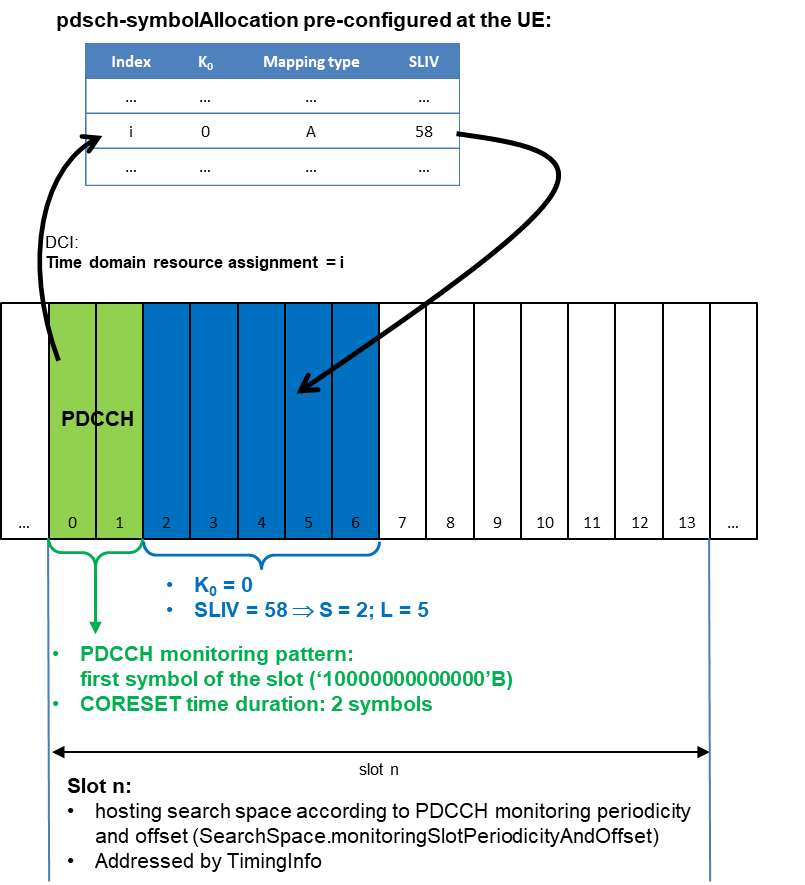


Figure 7.1.2.2.2-1: Example for time domain resource allocation for K0 = 0

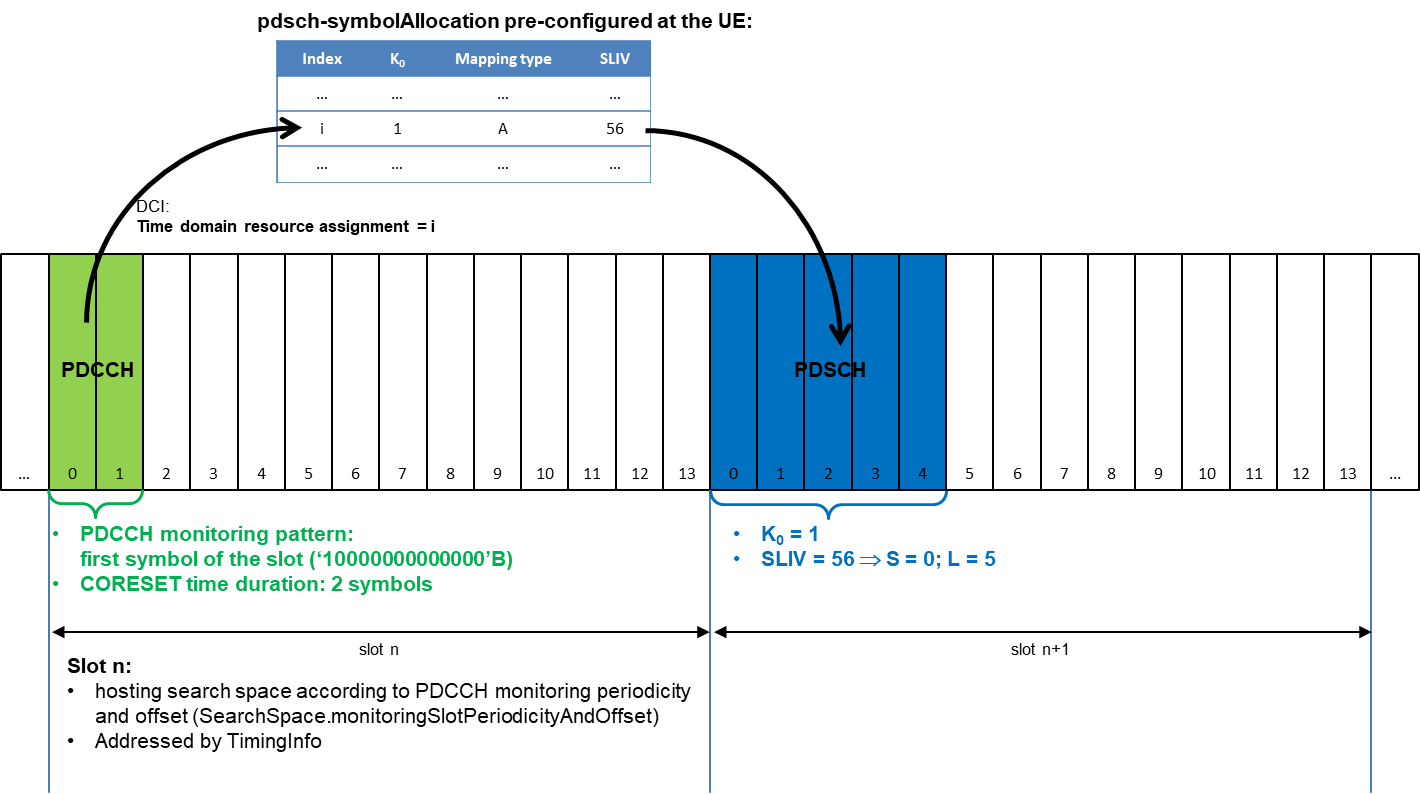


Figure 7.1.2.2.2-2: Example for time domain resource allocation for K0 > 0

##### 7.1.2.2.3 DL scheduling scheme

Different kinds of PDSCH transmissions need to be scheduled:

- System information (SI: SIB1 and other system information)

- Paging

- Random access response (RAR)

- DCCH/DTCH transmissions

The scheduling needs to be done so that there is no overlapping in frequency or time domain.

In general there are different ways to do the scheduling:

a) Multiplexing in frequency domain of a single BWP

b) Multiplexing in time domain of a single BWP (at slot or at symbol level)

c) Use of different BWPs: e.g. initial BWP for SI, RAR, Paging + dedicated BWP for DCCH/DTCH

d) Combinations of the above

In frequency domain the different kinds of PDSCH transmissions may use different resource allocation types (TS 38.214 [22] clause 5.1.2.2):

- Resource allocation (RA) type 0: Bitmap-based allocation of Resource Block Groups (RBGs):  
Applicable only for DCI format 1\_1 ⇒ not applicable for scheduling of SI, Paging and RAR

- Resource allocation (RA) type 1, non-interleaved: continuous allocation of RBs with one-by-one mapping of virtual resource blocks (VRBs) to physical resource blocks (PRBs).

- Resource allocation (RA) type 1, interleaved: continuous allocation of RBs with interleaved VRB-to-PRB mapping according to TS 38.211 [19] clause 6.3.1.7.

###### 7.1.2.2.3.1 DL scheduling scheme: Frequency domain multiplexing, RA type1, non-interleaved

This scheduling scheme multiplexes the different kinds of PDSCH transmissions in the frequency domain of a single BWP by exclusively using resource allocation type 1 with non-interleaved VRB-to-PRB mapping. Assuming the resource blocks being numbered from 0 to NBWP-1 (with NBWP being the size of the BWP) the following allocation is done:

Table 7.1.2.2.3.1-1: Resource allocation for frequency domain multiplexing, RA type1, non-interleaved

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Kind of PDSCH transmission (Note 1) | CORESET# | SSB index of the cell (Note 4) | Resource block allocation (Note 2) | |
|  | RBstart  (Note 2) | LRBs,max (Note 2) |
| System information | 0 | SSB#1 | 0 | 7 |
|  | SSB#0 | NBWP-7 | 7 |
| Paging (Note 3) | 0 | SSB#1 | 7 | NBWP-7 |
|  | SSB#0 | 0 | NBWP-7 |
| Random access response (Note 3) | 0 | SSB#1 | 7 | NBWP-7 |
|  | SSB#0 | 0 | NBWP-7 |
| CCCH and DCCH transmission on CSS (Note 3) | 0 | SSB#1 | 7 | NBWP-7 |
| SSB#0 | 0 | NBWP-7 |
| DCCH/DTCH transmissions (Note 3) | 1 | SSB#1 | 7+ Offset Carrier CORESET#0 [RBs] (Note 5) | NBWP-7 |
|  | SSB#0 | 0 | NBWP-7 |
| NOTE 1: In context of a generic 5G test model it is not relevant whether or not there is SI and Paging for a given deployment option (e.g. EN-DC).  NOTE 2: LRBs ≤ LRBs,max with LRBs: number of resource blocks being eventually used for a particular transmission. LRBs and RBstart are as specified in TS 38.214 [22] subclause 5.1.2.2.2.  NOTE 3: In general Paging, Random access response and CCCH/DCCH/DTCH transmissions are mutual exclusive and therefore share the same allocation.  NOTE 4: The SSB index used by an NR Cell is specified in TS 38.508-1 [5] Table 4.4.2-2.  NOTE 5: Offset Carrier CORESET#0 [RBs] values are specified in the frequency tables in TS 38.508-1 [5]. | | | | |

In order to achieve a test case behaviour being independent from the frequency channel bandwidth NBWP is limited to the minimum value of 24 RBs in accordance to Table 5.3.2-1 of TS 38.101-1/2 [5, 6]. This implies that LRBs,max< 24 RBs for all configurations.

In general PDCCH and corresponding PDSCH transmissions are in the same slot (K0 = 0).

##### 7.1.2.2.4 Transport block size determination

TS 38.214 [22] clause 5.1.3.2 describes the transport block size (TBS) determination from the UE’s point of view: the UE calculates the TBS depending on several parameters. From a test model’s point of view appropriate values need to be found for the parameters to achieve a given TBS.

There are two modes specified for DL scheduling:

- automatic mode

- explicit mode

In explicit mode all parameters for the TBS determination are provided by TTCN, i.e. it is up to the TTCN implementation to find proper values. In automatic mode TTCN only provides RBstart and LRBs,max and it is up to the SS to determine the values of LRBs and IMCS to achieve the TBS which is needed for a particular DL transmission.

The SS shall apply the rules as described in clause 7.1.2.2.4.2.

###### 7.1.2.2.4.1 Parameters affecting TBS determination

The following parameters need to be considered for TBS determination:

Table 7.1.2.2.4.1-1: Parameters affecting TBS determination

|  |  |  |
| --- | --- | --- |
| Parameter | Comment/Description | Reference |
| Number of RBs in frequency domain | Indicated by DCI | Clause 7.1.2.2.1.3 |
| Number of symbols in time domain | Pre-configured at UE, selected by DCI;  corresponds to “PDSCH duration” TS 38.211 [19] clause 7.4.1.1.2 | Clause 7.1.2.2.1.1 |
| MCS index IMCS | Indicated by DCI: Modulation Order **Qm**, Target code Rate **R** | Clause 7.1.2.2.1.3;  TS 38.214 [22] Table 5.1.3.1-1 and 5.1.3.1-2 |
| Number of layers **υ** | The number of layers being used for transmission of a transport block can be derived from the antenna port configuration provided by DCI format 1\_1 taking into account the layer mapping according to TS 38.211 clause 7.3.1.3. For DCI format 1\_1 in general **υ** = 1 according to TS 38.508-1 [5] Table 4.3.6.1.2.2-1.  For DCI format 1\_0 **υ** = 1 is assumed (in accordance to TS 38.214 [22] clause 5.1.6.2 specifying antenna port 1000 to be used for DMRS). | TS 38.214 [22] clause 5.1.1.1 and 5.1.6.2,  TS 38.211 [19] clause 7.3.1.4,  TS 38.212 [20] clause 7.3.1.2.2 and tables 7.3.1.2.2-1/2/3/4 |
| PDSCH mcs-Table | Pre-configured at the UE via RRC signalling: PDSCH-Config.mcs-Table := {qam64, qam256}; indicates which MCS table to be applied when DL transmission is scheduled with C-RNTI  NOTE: qam256 is applicable only when DCI format 1\_1 is used. | TS 38.214 [22] clause 5.1.3.1 |
| Number of REs per PRB | Number of REs per PRB which are applicable for the PDSCH transmission | Table 7.1.2.2.4.1-2 |
| Rate matching | TS 38.214 [22] clause 5.1.3.2 does not specify how rate matching needs to be considered for TBS determination  ⇒ at least for early implementations slots containing SS/PBCH block transmission shall not be used for PDSCH transmissions and further rate matching is assumed not to be configured via RRC signalling | TS 38.214 [22] clause 5.1.4 |

Table 7.1.2.2.4.1-2: Parameters affecting number of REs allocated for PDSCH per PRB

|  |  |  |
| --- | --- | --- |
| Parameter | Comment/Description | Reference |
| PDSCH mapping type | Type A or B | Clause 7.1.2.2.1.1;  TS 38.211 [19] clause 7.4.1.1.2 |
| dmrs-Type | DMRS Configuration type 1 or 2 as indicated to the UE by DMRS-DownlinkConfig.dmrs-Type | TS 38.211 [19] clause 7.4.1.1.2 |
| dmrs-AdditionalPosition | Number of additional DMRS positions:  For DCI format 1\_1 as indicated to the UE by  DMRS-DownlinkConfig.dmrs-AdditionalPosition 0, 1, 2 or 3 additional positions.  For DCI format 1\_0 according to TS 38.214 [22] clause 5.1.6.2 the UE shall assume dmrs-AdditionalPosition='pos2' | TS 38.211 [19] clause 7.4.1.1.2 and tables 7.4.1.1.2-3/4 |
| maxLength | Number of OFDM symbols used for DMRS:  For DCI format 1\_1 as indicated to the UE by  DMRS-DownlinkConfig.maxLength:  Single or double symbol DM-RS.  For DCI format 1\_0 according to TS 38.214 [22] clause 5.1.6.2 single symbol DM-RS is applied. | TS 38.211 [19] clause 7.4.1.1.2 and table 7.4.1.1.2-5 |
| number of CDM groups without data | The maximum number of CDM groups without data depends on the DMRS Configuration type (dmrs-Type):  type 1: up to 2 CDM groups (TS 38.211 [19] Table 7.4.1.1.2-1)  type 2: up to 3 CDM groups (TS 38.211 [19] Table 7.4.1.1.2-2)  For DCI format 1\_1 the number of CDM groups without data for a single transmission is determined by the antenna port configuration provided in the DCI (TS 38.212 [20] tables 7.3.1.2.2-1/2/3/4)  For DCI format 1\_0 according to TS 38.214 [22] clause 5.1.6.2 for mapping type A and PDSCH duration > 2 the UE shall assume that the number of DM-RS CDM groups without data is 2 (what results in PDSCH not being present in any symbol carrying DM-RS) | TS 38.211 [19] clause 7.4.1.1.2,  TS 38.212 [20] clause 7.3.1.2.2 and tables 7.3.1.2.2-1/2/3/4,  TS 38.214 [22] clause 5.1.3.2 and 5.1.6.2 |
| xOverhead | Number of REs used for additional overhead as indicated to the UE by  PDSCH-ServingCellConfig.xOverhead:  0, 6, 12, 18 REs | TS 38.214 [22] clause 5.1.3.2 |
| PDSCH duration | Number of symbols allocated for the PDSCH transmission | Clause 7.1.2.2.1.1 |

Table 7.1.2.2.4.1-3 gives examples for the position of DMRS within a resource block depending on different parameters, with DMRS CDM group 0 shown in blue and DMRS CDM group 1 (if any) shown in green. For DCI format 1\_0 and PDSCH mapping type A the UE assumes both CDM groups to be used; for DCI format 1\_1 the number of DMRS CDM groups without data depends on the antenna port configuration of the DCI: In case of dmrs-Type=1, maxLength=1 and only one code word TS 38.212 [20] table 7.3.1.2.2-1 is applied and ‘0000’B (as specified in TS 38.508-1 [5] table 4.3.6.1.2.2-1) corresponds one DRMS CDM group at port 1000 which results in the REs shown in blue.

Table 7.1.2.2.4.1-3: Examples for the position of DMRS in an RB with   
PDSCH mapping type A, DMRS configuration type 1, maxLength=1, dmrs-AdditionalPosition=2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **DL-DMRS-add-pos = 0:**  k = 4n + 2k’ + Δ; k’ = 0, 1; Δ = 0, 1  l0 = 2 | | | | | | | | | | | | | | **DL-DMRS-add-pos = 1, PDSCH duration = 13, 14:**  k = 4n + 2k’ + Δ; k’ = 0, 1; Δ = 0, 1  l0 = 2, l1 = 11 | | | | | | | | | | | | | |
|  | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | | | | | | |
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| **DL-DMRS-add-pos = 2, PDSCH duration = 10, 11, 12:**  k = 4n + 2k’ + Δ; k’ = 0, 1; Δ = 0, 1  l0 = 2, l1 = 6, l2 = 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

For PDSCH mapping type A and single-symbol DMRS according to TS 38.211 [19] Table 7.4.1.1.2-3 the number NSymbols with DMRS of symbols with DMRS per resource block is as shown in table 7.1.2.2.4.1-4.

Table 7.1.2.2.4.1-4: Number of symbols with DMRS per resource block

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PDSCH duration | dmrs-AdditionalPosition | | | |
| 0 | 1 | 2 | 3 |
| 2 | 1 | 1 | 1 | 1 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 | 2 | 2 | 2 |
| 9 |
| 10 | 3 | 3 |
| 11 |
| 12 | 4 |
| 13 |
| 14 |

Assuming DMRS configuration type 1, maxLength=1, Xoh-PDSCH=0 and no rate matching, depending on the number of CDM groups without data, this results in the number of REs for DMRS per PRB including the overhead of the DMRS CDM groups without data as shown in Table 7.1.2.2.4.1-5.

Table 7.1.2.2.4.1-5: Number of REs for DMRS per PRB including the overhead of the DMRS CDM groups without data for DMRS configuration type 1, maxLength=1, Xoh-PDSCH=0, no rate matching

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **dmrs-AdditionalPosition** | **PDSCH duration** | **Number of REs for DMRS** | |
| DCI format 1\_1 indicating one DMRS CDM group without data according to TS 38.212 [20] Table 7.3.1.2.2-1 | 0 (NOTE 1) | any | 6 | 6 \* NSymbols with DMRS |
| 1 (NOTE 1) | < 8 | 6 |
| ≥ 8 | 12 |
| DCI format 1\_0 | 2 (NOTE 2) | < 8 | 12 | 12 \* NSymbols with DMRS |
| 8, 9 | 24 |
| > 9 | 36 |
| NOTE 1: TS 38.508-1 [5] table 4.6.3-36 specifies pos0 or pos1  NOTE 2: pos2 for DCI format 1\_0 according to TS 38.214 clause 5.1.6.2 | | | | |

###### 7.1.2.2.4.2 Automatic mode - Determination of TBS and corresponding **IMCS** and **LRBs**

In automatic mode, for each PDSCH transmission, the SS shall autonomously select a TBS and a **LRBs / IMCS** pair for this TBS.

Common requirements for TBS determination:

The SS shall follow the below rules to determine the TBS for a PDSCH transmission:

- The SS shall maximise the data being sent in a single transmission  
(i.e. the SS shall not do RLC segmentation without need);

- The SS shall minimise padding (i.e. the SS shall not use a TBS greater than needed);

- If the maximum TBS for a given configuration is not sufficient to carry all data then:

- if the RLC layer configuration at the SS allows segmentation for the given bearer then:

- the SS shall apply RLC segmentation with minimised number of segments;

- else:

- the SS shall raise an error.

**LRBs / IMCS** pair determination**:**

Using the selected TBS, the SS shall apply the following rules:

- When the TBS can be achieved with more than one **LRBs / IMCS** pairs the SS shall choose the **LRBs / IMCS** pairs with maximum **LRBs**;

- When there is more than one **LRBs / IMCS** pair with maximum **LRBs** the pair with minimum **IMCS** shall be chosen.

The SS implementation shall comply to the above requirements and be based on the following assumptions (unless stated otherwise for a specific table):

- Number of layers υ = 1

- PDSCH mapping type A

- dmrs-Type: type1

- maxLength: single symbol DM-RS

- xOverhead = 0

Further details are left up to SS implementation.

###### 7.1.2.2.4.3 Explicit mode - Determination of **IMCS** and **LRBs** for given TBS

In explicit mode, for a PDSCH scheduled by a PDCCH with CRC scrambled by C-RNTI, it is up to the TTCN to determine the values of IMCS and LRBs to achieve the TBS specified in a test case prose.

Annex B.1 may be used to select a valid pair of {LRBs ; IMCS}. The NR TBS table to be used is based on the TS 38.508-1 [5] default configurations outlined in Tables 7.1.2.2.4.3-1 and 7.1.2.2.4.3-2 below.

Table 7.1.2.2.4.3-1: TS 38.508-1 [5] default configurations for DCI format 1\_0 affecting DL scheduling

|  |  |  |
| --- | --- | --- |
| Parameter | Value | Reference(s) |
| MCS index table | table 5.1.3.1-1 (MCS index table 1) | TS 38.214 [22] clause 5.1.3.1 with DCI format 1\_0 |
| dmrs-AdditionalPosition | 2 | Table 7.1.2.2.4.1-2 with DCI format 1\_0 |
| number of CDM groups | 2 | Table 7.1.2.2.4.1-2 with DCI format 1\_0, mapping type A and PDSCH duration > 2 |
| PDSCH duration | 12 (mapping type A) | TS 38.508-1 [5] Tables 4.6.3-76 (*PDSCH-ConfigCommon*) and 4.6.3-78 (*PDSCH-TimeDomainResourceAllocationList*) and DCI format with “Time domain resource assignment”=0 |

Table 7.1.2.2.4.3-2: TS 38.508-1 [5] default configurations for DCI format 1\_1 affecting DL scheduling

|  |  |  |
| --- | --- | --- |
| Parameter | Value | Reference(s) |
| MCS index table | table 5.1.3.1-1 (MCS index table 1) | TS 38.214 [22] clause 5.1.3.1 with DCI format 1\_1 and mcs-Table=qam64 as according to TS 38.508-1 [5] Tables 4.6.3-75 |
| dmrs-AdditionalPosition | 1 (FR1) 0 (FR2) | TS 38.508-1 [5] Table 4.6.3-36 (DMRS-DownlinkConfig) |
| number of CDM groups | 1 | according to antenna port configuration (TS 38.508-1 [5] Table 4.3.6.1.2.2-1) |
| PDSCH duration | 12 (mapping type A) | TS 38.508-1 [5] Tables 4.6.3-76 (*PDSCH-ConfigCommon*) and 4.6.3-78 (*PDSCH-TimeDomainResourceAllocationList*) and DCI format with “Time domain resource assignment”=0 |

#### 7.1.2.3 Uplink grant

##### 7.1.2.3.1 General principles and grant allocation types

Uplink grants assignments for NR follow similar principles as for LTE (TS 36.523-3 [12] clause 7.2).

###### 7.1.2.3.1.1 PUCCH synchronisation in connected mode

To prevent the UE from doing RACH procedure for purpose of PUCCH synchronisation the SS gets configured to maintain PUCCH synchronisation at UE by periodically sending a MAC PDU containing the MAC control element 'Timing Advance Command'. The period as configured by TTCN is set to 80 % of the ‘*timeAlignmentTimer*' value configured at UE.

As in general the PUCCH synchronisation is not time critical, the SS shall choose the next possible occasion for sending of the Timing Advance Command from expiry of the period onward (i.e. the SS shall not raise an error when sending of the Timing Advance Command is not possible at the calculated end of the period).

###### 7.1.2.3.1.2 Grant allocation types

In general PUCCH synchronisation is configured at the SS for the different grant allocation types when the UE is in connected mode.

7.1.2.3.1.2.1 Grant allocation by RACH procedure

The UE gets assigned an uplink grant by the Random Access Response message being configured at the SS: Per default an UL grant as according to Table 7.1.2.3.3-1 is configured by TTCN.

7.1.2.3.1.2.2 Grant allocation type 1: Uplink grant triggered by SR

The SS gets configured to automatically assign an uplink grant when requested by the UE with a Scheduling Request (SR). The size of this UL grant is configured by TTCN, i.e. there is no requirement for SS implementation to determine the grant size but the configured value shall be used regardless of how much data the UE wants to send. The SS shall assign the UL grant within less than 10ms after it has received the scheduling requests.

7.1.2.3.1.2.3 Grant allocation type 2: Periodic uplink grant

The SS gets configured to assign uplink grants periodically irrespective of any Scheduling Request sent by the UE. The configuration specifies:

- the uplink grant size

- the periodicity: once, several times, continuous

- the period in number of slots (e.g. every slot, every second slot, etc.)

The first uplink grant transmitted is as specified in the explicit timing information. If timing information is "now" the SS selects the first suitable subframe for UL transmission.

The SS shall not assign any additional uplink grant due to a Scheduling Request sent by the UE.

7.1.2.3.1.2.4 Grant allocation type 3: Single uplink grant

Special case of Grant allocation type 2: Uplink grant is assigned only once.

7.1.2.3.1.2.5 Grant allocation type 4: Periodic uplink grant triggered by SR

Combination of Grant allocation type 1 and 2: Periodic uplink grant according to clause 7.1.2.3.1.2.3 is triggered by a Scheduling Request sent by the UE.

##### 7.1.2.3.2 Determination of explicit uplink grants

###### 7.1.2.3.2.1 Parameters

Similar as for the downlink the UE gets preconfigured with parameters for time and frequency domain and a particular UL transmission is addressed by DCI:

1. Time domain resource allocation:  
Similar parameters are defined for UL as for DL (see clause 7.1.2.2.1.1, TS 38.214 [22] clause 6.1.2.1).

2. Frequency domain resource allocation:  
Similar as for the DL there is resource allocation type 0 and 1 for the UL (see clause 7.1.2.2.1.2, TS 38.214 [22] clause 6.1.2.2).  
Uplink resource allocation type 1 is assumed to be used for signalling conformance testing.

3. DCI parameters:  
Similar parameters are defined for UL as for DL (see clause 7.1.2.2.1.3, TS 38.212 [20] clauses 7.3.1.1.1 and 7.3.1.1.2, TS 38.214 [22] clause 6.1).

In detail for a particular uplink grant the parameters listed in tables 7.1.2.3.2.1-1 and 7.1.2.3.2.1-2 need to be considered.

Table 7.1.2.3.2.1-1: Parameters affecting TBS determination

|  |  |  |
| --- | --- | --- |
| Parameter | Comment/Description | Reference |
| Number of RBs in frequency domain | Indicated by DCI |  |
| Number of symbols in time domain | Pre-configured at UE, selected by DCI;  corresponds to “Duration in symbols” TS 38.211 [19] clause 6.4.1.1.3 |  |
| MCS index IMCS | Indicated by DCI: Modulation Order **Qm**, Target code Rate **R** | TS 38.214 [22] clause 6.1.4.1;  TS 38.214 [22] Table 5.1.3.1-1, 5.1.3.1-2, 6.1.4.1-1 |
| Number of layers **υ** | The number of layers being used for transmission of a transport block can be derived from the precoding information and the antenna port configuration provided by DCI format 0\_1.  For DCI format 0\_1 in general υ = 1 according to TS 38.508-1 [5] Table 4.3.6.1.1.2-1.  For DCI format 0\_0 υ = 1 is assumed. | TS 38.214 [22] clause 6.1.1.1,  TS 38.211 [19] clause 6.3.1.5,  TS 38.212 [20] clause 7.3.1.1.2 and tables Table 7.3.1.1.2-2..5 |
| PUSCH Parameters mcs-Table, mcs-TableTransformPrecoder, transformPrecoder, msg3-transformPrecoder | Pre-configured at the UE via RRC signalling:  PUSCH-Config.mcs-Table := {qam64, qam256};  (NOTE 1)  PUSCH-Config.mcs-TableTransformPrecoder := {qam64, qam256}; (NOTE 1)  PUSCH-Config.transformPrecoder := {enabled, disabled}; or RACH-ConfigCommon.msg3-transformPrecoder := {enabled, disabled} (NOTE 2)  indicates which MCS table to be applied  NOTE 1: qam256 is applicable only when DCI format 0\_1 is used.  NOTE 2: msg3-transformPrecoder applies when DCI format 0\_0 is used or when transformPrecoder is not configured; transformPrecoder applies only when DCI format 0\_1 is used. | TS 38.214 [22] clause 6.1.4.1 and clause 6.1.3 |
| Support of pi/2 BPSK modulation | In case of transformPrecoder==enabled and mcs-TableTransformPrecoder,==qam64 the first two entries of TS 38.214 [22] Table 6.1.4.1-1 depend on whether or not the UE supports pi/2 BPSK modulation. | TS 38.214 [22] clause 6.1.4.1 |
| Number of REs per PRB | Number of REs per PRB which are applicable for the PUSCH transmission | Table 7.1.2.3.2.1-2 |

Table 7.1.2.3.2.1-2: Parameters affecting number of REs allocated for PUSCH per PRB

|  |  |  |
| --- | --- | --- |
| Parameter | Comment/Description | Reference |
| PUSCH mapping type | Type A or B | TS 38.211 [19] clause 6.4.1.1.3 |
| dmrs-Type | DMRS Configuration type 1 or 2 as indicated to the UE by DMRS-UplinkConfig.dmrs-Type | TS 38.211 [19] clause 6.4.1.1.3 |
| dmrs-AdditionalPosition | Number of additional DMRS positions:  For DCI format 0\_1 as indicated to the UE by DMRS-UplinkConfig.dmrs-AdditionalPosition: 0, 1, 2 or 3 additional positions.  For DCI format 0\_0 according to TS 38.214 [22] clause 6.2.2 the UE shall assume dmrs-AdditionalPosition='pos2' when frequency hopping is disabled and dmrs-AdditionalPosition='pos1' when frequency hopping is enabled. | TS 38.211 [19] clause 6.4.1.1.3and tables 6.4.1.1.3-3/4,  TS 38.214 [22] clause 6.2.2 |
| maxLength | Number of OFDM symbols used for DMRS:  For DCI format 0\_1 as indicated to the UE by DMRS-UplinkConfig.maxLength: Single or double symbol DM-RS.  For DCI format 0\_0 according to TS 38.214 [22] clause 6.2.2 single symbol DM-RS is applied. | TS 38.211 [19] clause 6.4.1.1.3 and table 6.4.1.1.3-5,  TS 38.214 [22] clause 6.2.2 |
| number of CDM groups without data | The maximum number of CDM groups without data depends on the DMRS Configuration type (dmrs-Type):  type 1: up to 2 CDM groups (TS 38.211 [19] Table 6.4.1.1.3-1)  type 2: up to 3 CDM groups (TS 38.211 [19] Table 6.4.1.1.3-2)  For DCI format 0\_1 the number of CDM groups without data for a single transmission is determined by the antenna port configuration provided in the DCI (TS 38.212 [20] tables 7.3.1.1.2-6..23)  For DCI format 0\_0 according to TS 38.214 [22] clause 6.2.2 for PUSCH duration > 2 the UE shall assume that the number of DM-RS CDM groups without data is 2 (what results in PUSCH not being present in any symbol carrying DM-RS); for PUSCH duration = 2 the number of DM-RS CDM groups without data is 1. | TS 38.211 [19] clause 6.4.1.1.3,  TS 38.212 [20] clause 7.3.1.1.2 and tables 7.3.1.1.2-6..23,  TS 38.214 [22] clause 6.1.4.2 and 6.2.2 |
| xOverhead | Number of REs used for additional overhead as indicated to the UE by  PUSCH-ServingCellConfig.xOverhead:  0, 6, 12, 18 REs | TS 38.214 [22] clause 6.1.4.2 |
| PUSCH duration | Number of symbols allocated for the PUSCH transmission by DCI |  |

The number of REs for DMRS and PDSCH per PRB is determined in the same way for UL as for DL (TS 38.211 [19] clause 7.4.1.1.2) ⇒ The same values are applicable for UL and DL (see Table 7.1.2.2.4.1-4).

###### 7.1.2.3.2.2 Determination of **IMCS** and **LRBs** for given TBS

Uplink grant assignments are fully controlled by TTCN, i.e. it is up to the TTCN to determine the values of IMCS and LRBs to achieve the TBS specified in a test case prose.

Annex B.2 may be used to select a valid pair of {LRBs ; IMCS}, based on the following assumptions (unless stated otherwise for a specific table):

- Number of layers υ = 1

- PUSCH mapping type A (as according to PUSCH-TimeDomainResourceAllocationList and PUSCH-Config in TS 38.508-1 [5])

- dmrs-Type: type1

- maxLength: single symbol DM-RS

- xOverhead = 0

The NR TBS tables for uplink grants in annex B.2 are based on the TS 38.508-1 [5] default configurations outlined in Tables 7.1.2.3.2.2-1 and 7.1.2.3.2.2-2 below.

Table 7.1.2.3.2.2-1: TS 38.508-1 [5] default configurations for DCI format 0\_0 affecting UL scheduling

|  |  |  |
| --- | --- | --- |
| Parameter | Value | Reference(s) |
| MCS index table | table 5.1.3.1-1 (MCS index table 1) | TS 38.214 [22] clause 6.1.4.1 with DCI format 0\_0, transform precoding disabled as per TS 38.508-1 [5] Table 4.6.3-97 (*RACH-ConfigCommon.msg3-transformPrecoder*) |
| dmrs-AdditionalPosition | 2 | Table 7.1.2.3.2.1-2 with DCI format 0\_0, no frequency hopping as per TS 38.508-1 [5] Table 4.3.6.1.1.1-1 |
| number of CDM groups | 2 | Table 7.1.2.3.2.1-2 with DCI format 0\_0, transform precoding disabled as per TS 38.508-1 [5] Table 4.6.3-97 (*RACH-ConfigCommon.msg3-transformPrecoder*) |
| PUSCH duration in symbols | 14 | TS 38.508-1 [5] Tables 4.6.3-90 (PUSCH-ConfigCommon) and 4.6.3-93 (PUSCH-TimeDomainResourceAllocationList) and DCI format with “Time domain resource assignment”=0 |

Table 7.1.2.3.2.2-2: TS 38.508-1 [5] default configurations for DCI format 0\_1 affecting UL scheduling

|  |  |  |
| --- | --- | --- |
| Parameter | Value | Reference(s) |
| MCS index table | table 5.1.3.1-1 (MCS index table 1) | TS 38.214 [22] clause 6.1.4.1 with DCI format 0\_1, transform precoding disabled as per TS 38.508-1 [5] Table 4.6.3-89 (*PUSCH-Config.transformPrecoder*) |
| dmrs-AdditionalPosition | 1 (FR1) 0 (FR2) | TS 38.508-1 [5] Table 4.6.3-37 (DMRS-UplinkConfig) |
| number of CDM groups | 1 | according to antenna port configuration (TS 38.508-1 [5] Table 4.3.6.1.1.2-1) |
| PUSCH duration in symbols | 14 | TS 38.508-1 [5] Tables 4.6.3-90 (*PUSCH-ConfigCommon*) and 4.6.3-93 (*PUSCH-TimeDomainResourceAllocationList*) and DCI format with “Time domain resource assignment”=0 |

NOTE: Configuration according to Table 7.1.2.3.2.2-2 with PUSCH duration of 14 symbols and one CDM group results in the same TBS sizes for dmrs-AdditionalPosition=0 and dmrs-AdditionalPosition=1 as according to step 1 of TS 38.214 [22] clause 5.1.3.2 the number of resource elements allocated for PDSCH per resource block is limited by 156.  
⇒ The transport block sizes corresponding to Table 7.1.2.3.2.2-2 are the same for FR1 and FR2.

##### 7.1.2.3.3 Default grants

In general test cases for layer 3 and above do not need test case specific grants but use default grants as listed in table 7.1.2.3.3-1.

Table 7.1.2.3.3-1: Default grants

|  |  |  |
| --- | --- | --- |
| Purpose | Grant size (NOTE 1) or  {LRBs IMCS} pair | Comment |
| Scheduling of Random Access Msg3, initial access | 256 bits (NOTE 2) | grant provided by Random Access Response (Msg2) |
| Scheduling of Random Access Msg3, handover, EN-DC or RRC Re-establishment complete | 48 bits (NOTE 2, 3) | grant provided by Random Access Response (Msg2) |
| Random Access Msg4 for C-RNTI based CBRA for synchronisation (e.g. EN-DC) | LRBs = 1, IMCS = 0 | minimum grant (24 or 32 bits) |
| Random Access Msg4 for C-RNTI based CBRA for handover or RRC Re-establishment complete | 144 bits (NOTE 4) | initial UL grant after handover |
| Default USS grant | LRBs = 24, IMCS = 9 (NOTE 5) | default grant: e.g. for test cases with main focus on control plane signalling |
| NOTE 1: In general for a given grant size TTCN uses the {LRBs IMCS} pair according to annex B.2.  NOTE 2: According to TS 38.213 [21] subclause 8.3, the RAR UL grant is always interpreted according to DCI format 0\_0, so contents of Table 7.1.2.3.2.2-1 apply.  NOTE 3: Minimum grant which can be assigned by the Random Access Response: The grant is sufficient to convey C-RNTI (3 bytes) and short BSR (2 bytes) or long BSR (minimum of 3 bytes). Even with short BSR there is not enough space to convey any segment of the *RRCReconfigurationComplete* or *RRCReestablishmentComplete* (at least 6 bytes: 2 bytes MAC header + 3 bytes RLC header + 1 byte payload).  NOTE 4: Initial grant of RA procedure big enough to completely convey the *RRCReconfigurationComplete* (10 bits) or *RRCReestablishmentComplete* (<10 bits). This requires a minimum of 13 bytes (2 bytes MAC header + 3 bytes RLC header + 6 bytes PDCP header + 2 bytes payload). Additionally an optional PHR MAC element (3 bytes) needs to be considered since the PHR has higher priority than the MAC SDU. Any further user data would require a minimum of 6 additional bytes (2 bytes MAC header + 3 bytes RLC header + 1 byte payload, it is assumed that if UE has any data to transmit that will be on AM DRB).  NOTE 5: Applicable only when MCS index table 5.1.3.1-1 or 6.1.4.1-1 is configured to be used for UL grants (e.g. in case of mcs-Table = qam256, a different IMCS value needs to be defined) | | |

7.1.2.4 Data scheduling

As according to TS 38.508-1[5] the SSB periodicity is set to 20ms, TTCN configures the SS to broadcast the SSB burst in half-frame 0 of frames with even SFN.

For scheduling of DL data or UL Grant, when timing information is explicit, the timing provided by TTCN corresponds to the time at which the SS shall transmit to the UE the PDCCH carrying the DCI message. The data scheduling applied by TTCN is specified in Tables 7.1.2.4-1 to 7.1.2.4-4.

Table 7.1.2.4-1: Data scheduling for FR1: FDD, SCS=15kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Frame** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Subframe 0** | | | **Subframe 1** | | | **Subframe 2** | | | **Subframe 3** | | | **Subframe 4** | | | **Subframe 5** | | | **Subframe 6** | | | **Subframe 7** | | | **Subframe 8** | | | **Subframe 9** | | |
| Slot 0 | 0 | PDCCH (UL) | Slot 0 | 0 |  | Slot 0 | 0 | PDCCH (DL) | Slot 0 | 0 |  | Slot 0 | 0 | PUSCH | Slot 0 | 0 | PDCCH (UL) | Slot 0 | 0 |  | Slot 0 | 0 | PDCCH (DL) | Slot 0 | 0 |  | Slot 0 | 0 | PUSCH |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | SSB#0 | 2 | 2 | PDSCH | 2 | 2 | 2 |  | 2 | 2 | PDSCH | 2 | 2 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6 |  | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 8 | SSB#1 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| 12 |  | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| NOTE 1: The PDCCH assignment in subframe 2 and 7 address DL transmissions in the same (K0 = 0).  NOTE 2: The UL grants in subframe 0 and 5 address UL transmissions in subframe 4 and 9 respectively (K2 = 4). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 7.1.2.4-2: Data scheduling for FR1: TDD, SCS=15kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Frame | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Subframe 0 | | | | Subframe 1 | | | | Subframe 2 | | | | Subframe 3 | | | | Subframe 4 | | | | Subframe 5 | | | | Subframe 6 | | | | Subframe 7 | | | | Subframe 8 | | | | Subframe 9 | | | |
| Slot 0 | 0 | DL | PDCCH (UL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | UL | PUSCH | Slot 0 | 0 | DL | PDCCH (UL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | UL | PUSCH |
| 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL |
| 2 | DL | SSB#0 | 2 | DL | 2 | DL | PDSCH | 2 | DL | 2 | UL | 2 | DL |  | 2 | DL | 2 | DL | PDSCH | 2 | DL | 2 | UL |
| 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL |
| 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL |
| 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL |
| 6 | DL |  | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL |
| 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL |
| 8 | DL | SSB#1 | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL |
| 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL |
| 10 | DL | 10 | DL | 10 | DL | 10 |  | 10 | UL | 10 | DL | 10 | DL | 10 | DL | 10 |  | 10 | UL |
| 11 | DL | 11 | DL | 11 | DL | 11 |  | 11 | UL | 11 | DL | 11 | DL | 11 | DL | 11 |  | 11 | UL |
| 12 | DL |  | 12 | DL | 12 | DL | 12 | UL | 12 | UL | 12 | DL | 12 | DL | 12 | DL | 12 | UL | 12 | UL |
| 13 | DL | 13 | DL | 13 | DL | 13 | UL | 13 | UL | 13 | DL | 13 | DL | 13 | DL | 13 | UL | 13 | UL |
| NOTE 1: The PDCCH assignment in subframe 2 and 7 address DL transmissions in the same (K0 = 0).  NOTE 2: The UL grants in subframe 0 and 5 address UL transmissions in subframe 4 and 9 respectively (K2 = 4). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 7.1.2.4-3: Data scheduling for FR1: TDD, SCS=30kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Frame** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Subframe 0** | | | | **Subframe 1** | | | | **Subframe 2** | | | | **Subframe 3** | | | | **Subframe 4** | | | | **Subframe 5** | | | | **Subframe 6** | | | | **Subframe 7** | | | | **Subframe 8** | | | | **Subframe 9** | | | |
| Slot 0 | 0 | DL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | UL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | DL |  | Slot 0 | 0 | UL |  |
| 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL |
| 2 | DL | SSB#0 | 2 | DL | 2 | DL | PDSCH | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | PDSCH | 2 | DL | 2 | UL |
| 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL |
| 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL |
| 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL |
| 6 | DL |  | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL |
| 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL |
| 8 | DL | SSB#1 | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL |
| 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL |
| 10 | DL | 10 | DL | 10 | DL | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 | DL | 10 | DL | 10 | UL |
| 11 | DL | 11 | DL | 11 | DL | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 | DL | 11 | DL | 11 | UL |
| 12 | DL |  | 12 | DL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | DL | 12 | DL | 12 | UL |
| 13 | DL | 13 | DL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | DL | 13 | DL | 13 | UL |
| Slot 1 | 0 | DL | Slot 1 | 0 | DL | Slot 1 | 0 | DL | PDCCH (UL) | Slot 1 | 0 | DL | Slot 1 | 0 | UL | PUSCH | Slot 1 | 0 | DL | Slot 1 | 0 | DL | Slot 1 | 0 | DL | PDCCH (UL) | Slot 1 | 0 | DL | Slot 1 | 0 | UL | PUSCH |
| 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL |
| 2 | DL | 2 | DL | 2 | DL |  | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL |  | 2 | DL | 2 | UL |
| 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL |
| 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL |
| 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL |
| 6 | DL | 6 | DL | 6 | DL | 6 |  | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 |  | 6 | UL |
| 7 | DL | 7 | DL | 7 | DL | 7 |  | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 |  | 7 | UL |
| 8 | DL | 8 | DL | 8 | DL | 8 |  | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 |  | 8 | UL |
| 9 | DL | 9 | DL | 9 | DL | 9 |  | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 |  | 9 | UL |
| 10 | DL | 10 | DL | 10 | DL | 10 | UL | 10 | UL | 10 | DL | 10 | DL | 10 | DL | 10 | UL | 10 | UL |
| 11 | DL | 11 | DL | 11 | DL | 11 | UL | 11 | UL | 11 | DL | 11 | DL | 11 | DL | 11 | UL | 11 | UL |
| 12 | DL | 12 | DL | 12 | DL | 12 | UL | 12 | UL | 12 | DL | 12 | DL | 12 | DL | 12 | UL | 12 | UL |
| 13 | DL | 13 | DL | 13 | DL | 13 | UL | 13 | UL | 13 | DL | 13 | DL | 13 | DL | 13 | UL | 13 | UL |
| NOTE 1: The DL assignments in slots 0 of subframe 2 and 7 address DL transmissions in the same slots (K0 = 0).  NOTE 2: The UL grants in slots 1 of subframe 2 and 7 address UL transmissions in slot 1 of subframe 4 and 9 respectively (K2 = 4). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 7.1.2.4-4: Data scheduling for FR2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Frame** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Subframe 0** | | | | **Subframe 1** | | | | **Subframe 2** | | | | **Subframe 3** | | | | **Subframe 4** | | | | **Subframe 5** | | | | **Subframe 6** | | | | **Subframe 7** | | | | **Subframe 8** | | | | **Subframe 9** | | | |
| Slot 0 | 0 | DL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | UL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL |  | Slot 0 | 0 | DL | PDCCH (DL) | Slot 0 | 0 | UL |  | Slot 0 | 0 | DL |  |
| 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL |
| 2 | DL | 2 | DL | 2 | DL | PDSCH | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | PDSCH | 2 | UL | 2 | DL |
| 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL |
| 4 | DL | SSB#0 | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL |
| 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL |
| 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL |
| 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL |
| 8 | DL | SSB#1 | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL |
| 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL |
| 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL |
| 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL |
| 12 | DL |  | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL |
| 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL |
| Slot 1 | 0 | DL | Slot 1 | 0 | UL | Slot 1 | 0 | DL |  | Slot 1 | 0 | DL | Slot 1 | 0 | DL | Slot 1 | 0 | DL | Slot 1 | 0 | UL | Slot 1 | 0 | DL |  | Slot 1 | 0 | DL | Slot 1 | 0 | DL |
| 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL |
| 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL |
| 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL |
| 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL |
| 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL |
| 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL |
| 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL |
| 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL |
| 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL |
| 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  |
| 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  |
| 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL |
| 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL |
| Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | UL | Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | DL | Slot 2 | 0 | UL |
| 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL |
| 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL |
| 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL |
| 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL |
| 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL |
| 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL |
| 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL |
| 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL |
| 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL |
| 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL |
| 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL |
| 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL |
| 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL |
| Slot 3 | 0 | DL | Slot 3 | 0 | DL | Slot 3 | 0 | UL | Slot 3 | 0 | DL | Slot 3 | 0 | DL | PDCCH (UL) | Slot 3 | 0 | DL | Slot 3 | 0 | DL | Slot 3 | 0 | UL | Slot 3 | 0 | DL | Slot 3 | 0 | DL | PDCCH (UL) |
| 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL |
| 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL |  | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL |  |
| 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL |
| 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL |
| 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL |
| 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL |
| 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL |
| 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL |
| 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL |
| 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL |
| 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL |
| 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL |
| 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL |
| Slot 4 | 0 | UL | Slot 4 | 0 | DL | Slot 4 | 0 | DL | Slot 4 | 0 | DL | Slot 4 | 0 | DL | Slot 4 | 0 | UL | Slot 4 | 0 | DL | Slot 4 | 0 | DL | Slot 4 | 0 | DL | Slot 4 | 0 | DL |
| 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL |
| 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL |
| 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL |
| 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL |
| 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL |
| 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL |
| 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL |
| 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL |
| 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL |
| 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL |
| 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL |
| 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL |
| 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL |
| Slot 5 | 0 | DL | Slot 5 | 0 | DL | Slot 5 | 0 | DL | Slot 5 | 0 | UL | Slot 5 | 0 | DL | Slot 5 | 0 | DL | Slot 5 | 0 | DL | Slot 5 | 0 | DL | Slot 5 | 0 | UL | Slot 5 | 0 | DL |
| 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL |
| 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL |
| 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL |
| 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL |
| 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL |
| 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL |
| 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL |
| 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL |
| 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL |
| 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL |
| 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL |
| 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL |
| 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL |
| Slot 6 | 0 | DL | Slot 6 | 0 | UL | Slot 6 | 0 | DL | Slot 6 | 0 | DL | Slot 6 | 0 | DL | Slot 6 | 0 | DL | Slot 6 | 0 | UL | Slot 6 | 0 | DL | Slot 6 | 0 | DL | Slot 6 | 0 | DL |
| 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL |
| 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL |
| 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL |
| 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL |
| 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL |
| 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL |
| 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL |
| 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL |
| 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL |
| 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  |
| 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  |
| 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL |
| 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL |
| Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | UL | PUSCH | Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | DL | Slot 7 | 0 | UL | PUSCH |
| 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL | 1 | DL | 1 | DL | 1 | DL | 1 | DL | 1 | UL |
| 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL | 2 | DL | 2 | DL | 2 | DL | 2 | DL | 2 | UL |
| 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL | 3 | DL | 3 | DL | 3 | DL | 3 | DL | 3 | UL |
| 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL | 4 | DL | 4 | DL | 4 | DL | 4 | DL | 4 | UL |
| 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL | 5 | DL | 5 | DL | 5 | DL | 5 | DL | 5 | UL |
| 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL | 6 | DL | 6 | DL | 6 | DL | 6 | DL | 6 | UL |
| 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL | 7 | DL | 7 | DL | 7 | DL | 7 | DL | 7 | UL |
| 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL | 8 | DL | 8 | DL | 8 | DL | 8 | DL | 8 | UL |
| 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL | 9 | DL | 9 | DL | 9 | DL | 9 | DL | 9 | UL |
| 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL | 10 | DL | 10 | DL | 10 |  | 10 | DL | 10 | UL |
| 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL | 11 | DL | 11 | DL | 11 |  | 11 | DL | 11 | UL |
| 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL | 12 | DL | 12 | DL | 12 | UL | 12 | DL | 12 | UL |
| 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL | 13 | DL | 13 | DL | 13 | UL | 13 | DL | 13 | UL |
| NOTE 1: The DL assignments in slots 0 of subframe 2 and 7 address DL transmissions in the same slots (K0 = 0).  NOTE 2: The UL grants in slots 3 of subframe 4 and 9 address UL transmissions in slot 7 of the same subframe (K2 = 4). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

#### 7.1.2.5 Noise generator

Several test cases require one or several NR cells to be subject to noise interference at a well-defined level. To achieve this, a Virtual Noise Generator (VNG) is modelled, located in the SS and controlled by TTCN.

A VNG instance has a one-to-one relation with an NR cell instance and therefore operates on the same frequency as the operating frequency of the associated NR cell. Default configuration of VNG models AWGN transmission across the whole carrier bandwidth and in every time slot. The test model allows varying the power level of the AWGN referred to as a *CellNocLevel* and measured in dBm/SCS.

The NR cell shall be configured before the associated VNG instance is configured. A VNG instance is first configured with noise source being “off”, and subsequently activated to a specified *CellNocLevel*. VNG instance deactivation stops the noise generation.

### 7.1.3 System information

TTCN provides the MIB message to the SS as a structured ASN.1 type using a control ASP (NR\_SYSTEM\_CTRL\_REQ). The SS shall:

- set the *systemFrameNumber* in the MIB to the 6 MSBs of the current SFN. A dummy value is provided by TTCN. The SS shall convey the 4 LSBs of the current SFN in the PBCH transport block. The SS shall fulfil current SFN mod 80 = 0.

- encode the MIB ASN.1 message as specified in Table 8.1-1.

- transmit the encoded MIB message periodically as specified in TS 38.331 [16]. For each transmission, the SS shall update *systemFrameNumber* value as specified above.

### 7.1.4 Cell(s) handling

#### 7.1.4.1 Multi-cells environment

The same principles and rules are applied as according to clause 7.4.5 of TS 36.523-3 [12] to both E-UTRA and NR cells.

#### 7.1.4.2 Cell power change

The same principles and rules are applied as according to clause 7.4.2 of TS 36.523-3 [12].

### 7.1.5 Timing aspects

#### 7.1.5.1 SS time

The SS shall provide one system time common across all RATs and cells being configured in a test case. The timing of each configured cell is specified as an offset to this common system time.

#### 7.1.5.2 Cell(s) timing

The timing of E-UTRA cells is specified in TS 36.523-3 [12] subclause 7.4.3.1.

The timing information used in an NR cell is specified in terms of H-SFN / SFN / subframe / slot. In the context of NR cells, the Hyper SFN (H-SFN) is used as an SFN wraparound counter (0..1023).

The DL timing offset of each NR cell is specified in Table 7.1.5.2-1.

Table 7.1.5.2-1: DL timing parameters of simulated NR cells

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NR cell Id | H-SFN-offset  (note 1) | SFN-offset for FDD  (note 2) | SFN-offset for TDD  (note 2) | Tcell  (note 3) | Tc-offset  (note 4) |
| NR Cell 1 | 0 | 0 | 0 | 0 | 0 |
| NR Cell 2 | 0 | 124 | 0 | 0 | 0 |
| NR Cell 3 | 0 | 257 | 257 | 0 | 0 |
| NR Cell 4 | 0 | 1000 | 0 | 0 | 0 |
| NR Cell 6 | 0 | 656 | 656 | 0 | 0 |
| NR Cell 10 | 0 | 129 | 129 | 0 | 0 |
| NR Cell 11 | 0 | 956 | 0 | 0 | 0 |
| NR Cell 12 | 0 | 1015 | 257 | 0 | 0 |
| NR Cell 13 | 0 | 890 | 656 | 0 | 0 |
| NR Cell 14 | 0 | 680 | 680 | 0 | 0 |
| NR Cell 23 | 0 | 383 | 257 | 0 | 0 |
| NR Cell 28 | 0 | 890 | 890 | 0 | 0 |
| NR Cell 29 | 0 | 680 | 890 | 0 | 0 |
| NR Cell 30 | 0 | 1015 | 129 | 0 | 0 |
| NR Cell 31 | 0 | 53 | 129 | 0 | 0 |
| NOTE 1: H-SFN-offset corresponds to the offset applied on H-SFN as defined for E-UTRA. It shall be set to 0 for an NR cell.  NOTE 2: SFN-offset corresponds to the offset applied on system frame number (0..1023).  NOTE 3: Tcell corresponds to the timing offset in Ts. Ts = 1/(15000 \* 2048) as for E-UTRA.  NOTE 4: Tc-offset corresponds to the timing offset in Tc. κ = Ts/Tc = 64 with Tc = 1/(480000 \* 4096). See TS 38.211 [19] subclause 4.1 and TS 36.211 [23] subclause 4).  NOTE 5: For each NR cell, its SSB-Index is specified in TS 38.508-1 [5] Table 4.4.2-2. | | | | | |

The UL timing offset of each NR cell is configured as an offset (timing advance) to its DL timing specified in Table 7.1.5.2-1. By default, the timing advance is initialised to 0 (unless specifically specified otherwise in the test case prose).

In test cases involving configuration of SCell(s), the H-SFN-offset / SFN-offset / Tcell / Tc-offset of SCell(s) are set to the same values as that of associated PCell(s).

In test cases involving NR-DC configuration, the H-SFN-offset / SFN-offset / Tcell / Tc-offset of PSCell(s) are set to the same values as that of associated PCell(s).

### 7.1.6 Test modes

#### 7.1.6.1 RLC test modes

The RLC test modes specified in TS 36.523-3 [12] clause 7.6.1 apply to the NR RLC entities as well.

## 7.2 EN-DC

### 7.2.1 Introduction

Subclause 7.2 specifies test methods and design considerations that are specific to EN-DC.

### 7.2.2 Physical layer aspects

#### 7.2.2.1 Search spaces and DCI

For EN-DC test cases, TTCN provides the DCI configuration only for the following PDCCH search spaces on the active DL BWP:

- Type1-PDCCH common search space: used for the Random Access procedure on the NR cell, and

- UE specific search space (UL and DL): used for data exchange in RRC\_CONNECTED state on the NR cell.

- For the default NR cell operation, TTCN configures DCI formats 0\_1 and 1\_1 in the SS.

### 7.2.3 System information

For EN-DC only MIB is configured and broadcast. SIB1 (RMSI) and Other SI are not configured.

### 7.2.4 Bearers

From a 3GPP network perspective, each bearer (MCG, SCG and split bearer) can be terminated either in MN or in SN.

From a EN-DC Test Model and PTC architecture perspective however, there is no dependency between the PTC on which the NR PDCP of a bearer is configured and the type of bearer (MN terminated or SN terminated), e.g. an SCG bearer may have its NR PDCP configured on the NR PTC and act as a MN terminated bearer.

### 7.2.5 Random Access procedure

#### 7.2.5.1 NR

In EN-DC on NR side, when *reconfigurationWithSync* is indicated by RRC signalling, the UE performs a Random Access procedure, which is either contention free (CFRA) or contention based (CBRA) with C-RNTI based contention resolution. This is distinguished by whether or not *RACH-ConfigDedicated* is provided in the *reconfigurationWithSync* field of *CellGroupConfig*.

TTCN configures the SS accordingly, and in case of CBRA with C-RNTI based contention resolution, the UE gets a temporary C-RNTI being different than the C-RNTI the UE has got already and the UE gets an UL grant as according to Table 7.1.2.3.3-1.

#### 7.2.5.2 E-UTRA

In EN-DC on E-UTRA side, in case of E-UTRA handover (when *mobilityControlInfo* is indicated in the *RRCConnectionReconfiguration* message), a Random Access procedure will take place. In that case TS 36.523-3 [12] subclause 7.16.3 applies, with the following amendment:

Initial grant: 208 bits.

NOTE: The *RRCConnectionReconfigurationComplete* including NR *RRCReconfigurationComplete* (5 bytes) shall completely be conveyed in the initial grant of RA procedure. This requires a minimum of 13 or 14 bytes (1 byte MAC header + 2 bytes RLC header + 6 bytes PDCP header (in case of NR PDCP) or 5 bytes PDCP header (in case of E-UTRA PDCP) + 5 bytes payload). Additionally an optional DC-PHR MAC element (9 bytes) needs to be considered since the DC-PHR has higher priority than the MAC SDU. Any further user data would require a minimum of 5 additional bytes (2 bytes MAC header + 2 bytes RLC header + 1 byte payload).

### 7.2.6 PSCell change

#### 7.2.6.1 Sequence of EN-DC NR inter-cell PSCell change

In general, the NR inter-cell PSCell change is done without activation time, i.e. the timing information for configuration of the SS and sending of the *RRCConnectionReconfiguration* is ‘Now'.

1. NR Target Cell: Configuration of SRB3 (if necessary) and DRBs

2. Transfer of the PDCP Count for DRBs and SRB3 (if necessary) from NR source to NR target cell:

a) NR Source Cell: Get PDCP COUNT.

b) NR Target Cell: Set PDCP COUNT.

NOTE 1: No further sending/receiving of DRB data before the PSCell change is done.

NOTE 2: For AM DRBs the PDCP count is maintained. For SRB3 (if applied) and UM DRBs, the PDCP count is maintained or reset depending on the *RRCConnectionReconfiguration* message content.

3. NR Target Cell: Inform the SS about the PSCell change and about the source cell id.

4. NR Target Cell: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 3: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

5. NR Target Cell: Activate security.

6. NR Target Cell: Configure UL grant configuration ("OnSR", default grant).

NOTE 4: Unless explicitly specified UL grant configuration keeps configured as per default at the NR source cell.

7. E-UTRA Cell: Send *RRCConnectionReconfiguration*.

8. E-UTRA Cell: Receive *RRCConnectionReconfigurationComplete*.

9. NR Target Cell: Inform the SS about completion of the PSCell change (e.g. to trigger PDCP STATUS REPORT PDU).

10. NR Source Cell: Release SRB3 (if necessary) and DRBs.

#### 7.2.6.2 Sequence of EN-DC NR intra-cell PSCell change

For EN-DC NR intra-cell PSCell change dedicated timing information is used: the sequence starts at time T with sending of the *RRCConnectionReconfiguration*. T is set to 300 ms in advance of the PSCell change.

1. NR Cell before T: Get PDCP count for DRBs and SRB3 (if applied).

2. E-UTRA Cell at T: Send *RRCConnectionReconfiguration*.

3. NR Cell at T: Release SRB3 (if necessary) and DRBs.

4. NR Cell at T: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 1: The FollowOnFlag is set to true in the ASPs reconfiguring the RadioBearerList (step 3) and C-RNTI (step 4).

5. NR Cell at T + 5ms: (Re-)configure SRB3 (if necessary) and DRBs.

6. NR Cell at T + 5ms: Restore the PDCP counts

NOTE 2: For AM DRBs the PDCP count is maintained. For SRB3 (if applied) and UM DRBs, the PDCP count is maintained or reset depending on the *RRCConnectionReconfiguration* message content.

7. NR Cell at T + 5ms: Re-establish security.

8. E-UTRA Cell (after step 2): Receive *RRCConnectionReconfigurationComplete*.

9. Void

#### 7.2.6.3 UL grants used in RA procedure during EN-DC NR PSCell change

An UL grant is assigned to the UE by the RAR and in case of CBRA with C-RNTI based contention resolution, another UL grant, as initial grant, is assigned for contention resolution. The default Random Access procedure specified in clause 7.2.5.1 is applied.

#### 7.2.6.4 Sequence of EN-DC NR CA inter-cell PSCell change

This procedure is applicable when there are more than one CC in NR before and after the PSCell change.

In general, the NR CA inter-cell PSCell change is done without activation time, i.e. the timing information for configuration of the SS and sending of the *RRCConnectionReconfiguration* is ‘Now'.

1. NR Target PSCell: Configuration of SRB3 (if necessary) and DRBs

2. Transfer of the PDCP Count for DRBs and SRB3 (if necessary) from NR source PSCell to NR target PSCell:

a) NR Source PSCell: Get PDCP COUNT.

b) NR Target PSCell: Set PDCP COUNT.

NOTE 1: No further sending/receiving of DRB data before the PSCell change is done.

NOTE 2: For AM DRBs the PDCP count is maintained. For SRB3 (if applied) and UM DRBs, the PDCP count is maintained or reset depending on the *RRCConnectionReconfiguration* message content.

3. NR Target PSCell: Inform the SS about the PSCell change and about the source cell id.

4. NR Target PSCell: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 3: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

5. NR Target PSCell: Activate security.

6. NR Target PSCell: Configure UL grant configuration ("OnSR", default grant).

NOTE 4: Unless explicitly specified UL grant configuration keeps configured as per default at the NR source PSCell.

7. NR Target PSCell: Configure Target PSCell as PSCell.

NOTE 5: The FollowOnFlag is set to true in the ASP reconfiguring PSCell.

8. NR Target SCell: Configure Target SCell as SCell with new PSCell association.

9. E-UTRA Cell: Send *RRCConnectionReconfiguration*.

10. E-UTRA Cell: Receive *RRCConnectionReconfigurationComplete*.

11. NR Target PSCell: Inform the SS about completion of the PSCell change (e.g. to trigger PDCP STATUS REPORT PDU).

12. NR Source PSCell: If source PSCell is not the same as target SCell, Release SRB3 (if necessary) and DRBs, reconfigure the cell as a normal cell.

13. NR Source SCell: If source SCell is not the same as target SCell or target PSCell, reconfigure the cell as a normal cell.

NOTE 6: The FollowOnFlag is set to true in the ASP reconfiguring PSCell.

## 7.3 NR/5GC

### 7.3.1 Introduction

Subclause 7.3 specifies test methods and design considerations that are specific to NR/5GC.

### 7.3.2 Physical layer aspects

### 7.3.3 System information

#### 7.3.3.1 General SS requirements

TTCN provides the complete system information and scheduling information to the SS as a structured ASN.1 type using a single control ASP (NR\_SYSTEM\_CTRL\_REQ). The following rules apply:

- The system information is sent to SS using the asn.1 types. The SS shall encode each SI message as specified in Table 8.1-1 and add the necessary padding bits as specified in TS 38.331 [16], clause 8.5.

- The SS shall start scheduling all system information from the same SFN.

- The scheduling information sent to SS is the same as the scheduling information sent to the UE. For each SI message (including SI messages containing posSIBs), the slotOffset list in NR\_SYSTEM\_CTRL\_REQ indicates the exact point in time in the SI-window at which SS shall transmit the related SI to the UE.

- SI-window shall be calculated as per TS 38.331[16] clause 5.2.2.3.2 for all SI messages. For SI messages containing posSIBs, the parameter OffsetToSI\_Used indicates to SS the SI-window calculation to be applied.

- In the present version of this specification, encryption of the content of SI messages containing posSIBs is not supported.

#### 7.3.3.2 Scheduling information

The maximum number of resource blocks as defined in table 7.3.3.2-1 are used to broadcast the system information.

Table 7.3.3.2-1: Maximum number of resource blocks

|  |  |  |
| --- | --- | --- |
|  | Maximum number of resource blocks assigned | Number of symbols assigned |
| SIB1 | 7 | 12 |
| for all SIs | 7 | 12 |

The slot offset values defined in Table 7.3.3.2-1A are used for all SI messages, including SIs containing posSIBs when *OffsetToSI-Used* is not configured, with their respective SI-window.

Table 7.3.3.2-1A: SubframeOffset values

|  |  |
| --- | --- |
| Configuration | subframeOffset list |
| FR1 FDD & TDD SCS=15kHz | {5, 6, 15, 16} |
| FR1 TDD SCS=30kHz | {5, 6} |
| FR2 TDD SCS=120kHz | {5} |

When *OffetToSI-Used* is configured, the slot offset values defined in Table 7.3.3.2-1B are used for all SIs containing posSIBs with their respective SI-window.

Table 7.3.3.2-1B: PosSI SubframeOffset values when *offsetToSI-Used* is configured

|  |  |
| --- | --- |
| Configuration | subframeOffset list |
| FR1 FDD & TDD SCS=15kHz | {25} |
| FR1 TDD SCS=30kHz | {15} |
| FR2 TDD SCS=120kHz | {6} |

All System Information messages are sent only once within the SI-window and redundancy version 0 is selected.

SIB1 is broadcasted in slot#1 in frames with even SFN.

Tables 7.3.3.2-2 to 7.3.3.2-4 give the SFN's and subframe numbers in which the MIB, SIB1 and other SIs are actually scheduled as per default parameters for si-WindowLength s80 for FR1 and s160 for FR2, periodicity for SI are defined in TS 38.508-1 [5]. These SI schedulings are applied to all SIs, including SIs containing posSIBs when OffsetToSI\_Used is not configured.

Table 7.3.3.2-2: MIB, SIB1 and SI scheduling for FR1: FDD and TDD, SCS=15kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
| **0** | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
|  | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  |
| **2** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **4** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **6** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **7** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **8** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  |
| **9** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  |
| **10** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **11** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **12** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **13** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **14** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **15** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **16** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  |
| **17** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  |
| **18** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **19** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **20** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **21** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **22** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **23** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **24** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  |
| **25** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  |

Table 7.3.3.2-3: MIB, SIB1 and SI scheduling for FR1 TDD, SCS=30kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
| **0** | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
| Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI1 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **2** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **4** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI2 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **6** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **7** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **8** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI3 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **9** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **10** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **11** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **12** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI4 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **13** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **14** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **15** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |

Table 7.3.3.2-4: MIB, SIB1 and SI scheduling for FR2: TDD, SCS=120kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
|  | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
| **0** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI1 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **2** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI2 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **4** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI3 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **6** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI4 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |

When SIs containing posSIBs with *OffsetToSI-Used* configured are scheduled, Tables 7.3.3.2-5 to 7.3.3.2-7 give the SFN's and subframe numbers in which the MIB, SIB1, other SIs are actually scheduled. Other SIs containing posSIBs are hereafter named PosSIs. Per default parameters for si-WindowLength s80 for FR1 and s160 for FR2, periodicity for SI are defined in TS 38.508-1 [5].

Table 7.3.3.2-5: MIB, SIB1, SI and PosSI with *OffsetToSI-Used* configured scheduling for FR1: FDD and TDD, SCS=15kHz

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
| **0** | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
|  | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  |
| **2** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **4** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **6** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **7** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **8** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  |
| **9** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  |
| **10** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | PosSI1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **11** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **12** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **13** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **14** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **15** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **16** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  |
| **17** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  |
| **18** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | PosSI2 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **19** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **20** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **21** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **22** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **23** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **24** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  |
| **25** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  |
| **26** | Sl0 | MIB | Sl0 | SIB1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 | PosSI3 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| **27** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |

Table 7.3.3.2-6: MIB, SIB1, SI and PosSI with *OffsetToSI-Used* configured scheduling for FR1 TDD, SCS=30kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
| **0** | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
| Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI1 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI1 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **2** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **4** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI2 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI2 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **6** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **7** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **8** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI3 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI3 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 | PosSI1 | Sl1 |  | Sl1 |  |
| **9** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **10** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **11** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **12** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 | SI4 | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 | SI4 | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 | PosSI2 | Sl1 |  | Sl1 |  |
| **13** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **14** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **15** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| **16** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Slot Sl1 |  | Sl1 |  | Sl1 |  | Sl1 | PosSI3 | Sl1 |  | Sl1 |  |
| **17** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |

Table 7.3.3.2-7: MIB, SIB1, SI and PosSI with *OffsetToSI-Used* configured scheduling for FR2: TDD, SCS=120kHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SFN** | **Frame** | | | | | | | | | | | | | | | | | | | |
|  | Subframe 0 | | Subframe 1 | | Subframe 2 | | Subframe 3 | | Subframe 4 | | Subframe 5 | | Subframe 6 | | Subframe 7 | | Subframe 8 | | Subframe 9 | |
| **0** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI1 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **1** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **2** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI2 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **3** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **4** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI3 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **5** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **6** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 | SI4 | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **7** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **8** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 | PosSI1 | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **9** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **10** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 | PosSI2 | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **11** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **12** | Sl0 | MIB | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 | SIB1 | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 | PosSI3 | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |
| **13** | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  | Sl0 |  |
| Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  | Sl1 |  |
| Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  | Sl2 |  |
| Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  | Sl3 |  |
| Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  | Sl4 |  |
| Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  | Sl5 |  |
| Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  | Sl6 |  |
| Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  | Sl7 |  |

#### 7.3.3.3 System information modification

For system information modification, the same rules as defined in clause 7.3.3.1 and 7.3.3.2 are applied.

The SFN for the start of modification period is calculated by TTCN. The modified system information and the calculated SFN are provided in the ASP NR\_SYSTEM\_CTRL\_REQ. When the cell is switched off, ‘activateNow’ is used.

The updated SI other than ETWS and CMAS, is broadcasted in the modification period following the one where SI change indication is transmitted. The updated SI for ETWS and CMAS is broadcasted in the same modification period as the one where SI change indication is transmitted. Short message indications are transmitted as follows:

- When UE is in RRC\_IDLE or in RRC\_INACTIVE, a single Short Message indication is transmitted in UE paging occasions of the modification period. With the default values provided in TS 38.508-1[5], this results in 4 Short Messages transmitted by SS during the modification period.

- When UE is in RRC\_CONNECTED, Short Message indications are transmitted in every paging occasions of each frame throughout the modification period. With the default values provided in TS 38.508-1[5], this results in 64\*4\*2 Short Messages transmitted by SS during the modification period.

#### 7.3.3.4 Request for on demand system information

In case PRACH preamble (Msg1) is used for indication of requested other SI:

- TTCN configures SS with the SI-RequestConfig as provided to UE in SIB1 and SS shall monitor these PRACH resources.

- TTCN configures SS to report PRACH preambles and to transmit Random Access Response (Msg2) as response to Msg1 but not to handle contention resolution.

- TTCN reconfigures SS to stop broadcasting a specific SI from the start of a modification period and reconfigures SS to restart broadcasting the SI with activation time ‘Now’ (after the reception of PRACH preamble in TTCN). When activation time ‘Now’ is applied, SS shall start broadcasting from the next SI-window.

In case Msg3 is used for indication of requested other SI:

- TTCN configures the SS to transmit a Msg4 with Contention Resolution Identity upon receipt of *RRCSystemInfoRequest* (Msg3).

- TTCN reconfigures SS to stop broadcasting a specific SI from the start of a modification period and reconfigures SS to restart broadcasting the SI with activation time ‘Now’ (after the reception of *RRCSystemInfoRequest* in TTCN). When activation time ‘Now’ is applied, SS shall start broadcasting from the next SI-window.

### 7.3.4 Paging and Short Message

SS can be configured with a DCI including Short Messages. In that case, when SS is triggered to transmit a *Paging* message, the Short Message indication shall be included in the DCI.

SS can be triggered to transmit Short Messages alone, this is achieved in TTCN with the DciTrigger type. SS is triggered to send the *Paging* message or a Short Message indication at a calculated Paging Occasion provided in the activation time and optionally a list slot offsets when multiple paging occasions are applied. Discontinuous Reception (DRX) is applied for the transmission of a *Paging* message or a Short Message indication to the UE in the RRC\_IDLE or RRC\_INACTIVE states. The paging frame calculation is according to TS 38.304 [24] clause 7. The following default values are provided in TS 38.508-1[5]:

- defaultPagingCycle = 128

- Ns = one

- N = 64

- PF\_Offset = 0

When these default values are applied, the Paging Frame calculation is:

- Paging Frame: SFN mod 128 =2\*(UE\_ID mod 64) so depending on UE\_ID, the Paging Frame is set to 0,2,4,6,… 126 of the paging cycle.

When UE is in RRC\_IDLE or RRC\_INACTIVE and when PDCCH monitoring occasions with default association is applied, the Paging Occasion is set to:

- slot#2 of the Paging Frame when the cell is configured with SSB#1 or

- slot#1 of the Paging Frame when the cell is configured with SSB#0.

To notify system information modification when UE is in RRC\_CONNECTED and when PDCCH monitoring occasions with default association is applied, the Paging Occasion is set to:

- slot#1 and slot#2 of the Paging Frame when the cell is configured with SSB#1 or

- slot#0 and slot#1 of the Paging Frame when the cell is configured with SSB#0.

### 7.3.5 RRC connection control

#### 7.3.5.1 Early contention resolution

When the contention based RACH procedure is being executed (RRC connection establishment, RRC reconfiguration, RRC connection resume or RRC re-establishment), in general the UE Contention Resolution Identity MAC CE and the DL RRC PDU on DL CCCH (*RRCSetup*/*RRCReject*) or DL DCCH (*RRCResume/RRCReestablishment/RRCRelease*) are sent in one MAC PDU (RA Msg4). This is achieved by pre-configuring the SS (before the start of the RRC procedure) to send the encoded DL message and UE Contention Resolution Identity MAC CE in one MAC PDU.

There are cases however where it is necessary to send the DL CCCH or DL DCCH message separately from RA Msg4, this is implemented in TTCN using the test case attribute EarlyContentionResolution:

- RRC connection establishment: when *RRCSetup* message is part of the test purpose,

- RRC connection reject: when *RRCReject* message is part of the test purpose,

- RRC connection resume: when *RRCResume* or *RRCRelease* message is part of the test purpose,

- RRC connection re-establishment: when *RRCReestablishment* message is part of the test purpose

- Special cases: e.g. when no contention resolution shall be sent according to the test purpose.

#### 7.3.5.2 RRC connection release sequence

According to TS 38.331 [19], clause 5.3.8.3, after reception of the *RRCRelease* message the UE may either wait 60 ms or for indication of acknowledgement from lower layer. After the *RRCRelease* message there are cases where the UE may immediately come up with an *RRCSetupRequest* message. This requires scheduled release of resources at the SS:

1. At T: Send *RRCRelease*, stop UL grants.

2. At T + 5ms: Release security.

3. At T + 10ms: Release DRX configuration at the SS.

4 At T + 15ms: Release measurement gap configuration at the SS.

5. At T + 55ms: Release SRBs and DRBs.

6. At T + 60ms: (Re-)configure SRBs.

7. Delay of 840ms (NOTE)

T is set to 300ms in advance of *RRCRelease*.

NOTE: The delay ensures that the UE is camping on the serving cell again to avoid side effects e.g. due to subsequent power level changes. It does not affect any sending of messages by the UE. The delay 840 ms is chosen to ensure the UE is re-camping on the cell and has read relevant system information (MIB, SIB1 and all other SIs).

#### 7.3.5.3 Handover

##### 7.3.5.3.1 Sequence of intra-NR inter-cell handover

In general, the intra-NR inter-cell handover is done without activation time, i.e. the timing information for configuration of the SS and sending of the *RRCReconfiguration* is ‘Now'.

The sequence may be interrupted if other events need to be handled. E.g. when a Mobility procedure is performed in the target cell and there are procedures left to be executed on the source cell.

1. Target Cell: Configuration of DRBs

2. Transfer of the PDCP Count for AM DRBs and SRBs (if applied) from source to target cell:

a) Source Cell: Get PDCP COUNT.

b) Target Cell: Set PDCP COUNT.

NOTE 1: No further sending/receiving of DRB data before the HO is done.

NOTE 2: For AM DRBs the PDCP count is maintained, for UM DRBs the PDCP count is reset. For SRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

3. Target Cell: Inform the SS about the HO and about the source cell id.

4. Target Cell: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 3: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

5. Target Cell: Activate security.

6. Void

7. Source Cell: Stop periodic TA.

NOTE 4: Unless explicitly specified UL grant configuration keeps configured as per default at the source cell.

8. Target Cell: Configure UL grant configuration ("OnSR", periodic TA is not started).

9. Source Cell: Send *RRCReconfiguration*.

10. Target Cell: Receive *RRCReconfigurationComplete*.

11. Target Cell: Start periodic TA.

12. Target Cell: Inform the SS about completion of the HO (e.g. to trigger PDCP STATUS REPORT PDU).

13. Target Cell: Re-configure RACH procedure as for initial access.

14. Target Cell: Configure measurement gap (if configured in the source cell or as provided in the *RRCReconfiguration* message).

15. Source Cell: Reset SRBs and release DRBs.

16. Source Cell: Release MeasGapConfig configuration.

##### 7.3.5.3.2 Sequence of intra-NR intra-cell handover

For intra-NR intra-cell handover dedicated timing information is used: the sequence starts at time T with sending of the *RRCReconfiguration*. T is set to 300 ms in advance of the handover.

1. Before T: Get PDCP count for AM DRBs and SRBs (if applied).

2. At T: Send *RRCReconfiguration*.

3. At T + 5ms: Release SRBs and DRBs.

4. At T + 5ms: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 1: Since the RACH procedure may require a new C-RNTI to be used it cannot be configured before sending out the *RRCReconfiguration*.

NOTE 2: The FollowOnFlag is set to true in the ASPs reconfiguring the RadioBearerList (step 3) and C-RNTI (step 4).

5. At T + 5ms: (Re-)configure measurement gap if provided in the *RRCReconfiguration* message.

6. At T + 10ms: (Re-) configure SRBs and DRBs.

7. At T + 10ms: Set PDCP COUNT for AM DRBs and SRBs (if applied).

NOTE 3: For AM DRBs the PDCP count is maintained while for UM DRBs the PDCP count is reset. For SRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

8. At T + 10ms: Re-establish security, disable TA transmission.

9. (after step 7) Receive *RRCReconfigurationComplete*.

10. (after step 8) Re-configure RACH procedure as for initial access, enable TA transmissions.

NOTE 4: The FollowOnFlag is set to true in the ASP reconfiguring RACH.

##### 7.3.5.3.3 UL grants used in RA procedure during handover

An UL grant is assigned to the UE by the RAR and in case of CBRA with C-RNTI based contention resolution another UL grant, as initial grant, is assigned for contention resolution.

When UL data is pending, the UE will try to put as much data into given grants as possible, i.e. it will segment the user data and send it e.g. with the initial grant if possible. To avoid this segmentation of user data, the grant assigned by RAR and the initial grant during handover are set according to Table 7.1.2.3.3-1.

##### 7.3.5.3.4 Sequence of intra-NR inter-cell CA handover

This procedure is applicable when there are more than one CC before and after the handover.

The intra-NR inter-cell CA handover is done with activation time, i.e. the timing information for configuration of the SS and sending of the *RRCReconfiguration* is explicit. Time ‘T’ is set to 700 ms in advance of the handover, time T1 = T + 10 ms and time T2 = T +20 ms.

At Time T, steps 1-3:

1. Source PCell: Stop periodic TA.

NOTE 1: Unless explicitly specified UL grant configuration keeps configured as per default at the source cell.

2. Target PCell: Configure target PCell for no RACH response transmission.

3. Source PCell: Schedule the transmission of *RRCReconfiguration* message to UE requesting Handover to target PCell and SCell.

At time T1 if target PCell is the same as source SCell, else at time "Now", steps 4-6:

4. If target PCell is same as source SCell

4.1 Source PCell: Configure from PCell to normal cell: remove source SCell from the SCell list in the source PCell.

4.2 Target PCell: Configure from SCell to PCell.

5. Target PCell: Configuration of DRBs

6. Transfer of the PDCP Count for AM DRBs and SRBs (if applied) from source to target PCell:

a) Source PCell: Get PDCP COUNT.

b) Target PCell: Set PDCP COUNT.

NOTE 2: No further sending/receiving of DRB data before the HO is done.

NOTE 3: For AM DRBs the PDCP count is maintained, for UM DRBs the PDCP count is reset. For SRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

At time T2, steps 7-12:

7. Target PCell: Inform the SS about the HO and about the source PCell id.

8. Target PCell: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 4: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

9. Target PCell: Activate security.

10. Target PCell: Configure UL grant configuration ("OnSR", periodic TA is not started).

11. Target PCell: Configure Target PCell as PCell.

NOTE 5: The FollowOnFlag is set to true in the ASP reconfiguring PCell.

12. Target SCell: Configure Target SCell as SCell with new PCell association.

After time T2 (without activation time):

13. Target PCell: Receive *RRCReconfigurationComplete*.

14. Target PCell: Start periodic TA.

15. Target PCell: Inform the SS about completion of the HO (e.g. to trigger PDCP STATUS REPORT PDU).

16. Target PCell: Re-configure RACH procedure as for initial access.

17. Source PCell: If source PCell is not target SCell:

17.1 Reset SRBs and release DRBs.

17.2 Void.

17a. Source PCell: If target PCell is not the same as source SCell:

17a.1 Configure from PCell to normal cell: remove source SCell from the SCell list in the source PCell.

18. Source SCell: If source SCell is neither target PCell nor target SCell:

18.1 Release DRBs.

#### 7.3.5.4 RRC connection re-establishment

In general, the re-establishment is done without activation time, i.e. the timing information for configuration of the SS and sending of the *RRCReestablishment* is ‘Now'.

The Source Cell and Target cell can be the same cell.

0. Source Cell: If the Source Cell is the same as the Target Cell:

Release SRBs and DRBs.

(Re-)configure SRBs.

1. Target Cell: Reconfigure DCCH/DTCH DCI on CSS and reconfigure RACH procedure with a list of two RACH procedures:

RACH procedure contention-based with UE Contention Resolution Identity MAC CE and with a new C-RNTI,

RACH procedure with contention-based with C-RNTI based contention resolution.

NOTE 1: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

2. Target Cell: Receive *RRCReestablismentRequest.*

3. Void

NOTE 2: Void

4. Target Cell: Void

5. Target Cell: Activate Security.

6. Target Cell: Send *RRCReestablishment.*

7. Target Cell: Receive *RRCReestablishmentComplete.*

8. Target Cell: Reconfigure UL DCCH/DTCH DCI on USS.

8a. Target Cell If the Source Cell is different from the Target Cell

Configure UL grant “OnSR” and stop periodic TA.

Else

Stop periodic TA.

8b Target Cell Reconfigure DRBs

9. Target Cell: Send *RRCReconfiguration.*

10. Target Cell: Receive *RRCReconfigurationComplete.*

11. Target Cell: Reconfigure DL DCCH/DTCH DCI on USS.

NOTE 3: The FollowOnFlag is set to true in the ASP reconfiguring the target PCell.

12. Target Cell: Re-configure RACH procedure as for initial access, start periodic TA.

NOTE 4: The FollowOnFlag is set to true in the ASP reconfiguring the target PCell.

13. Source Cell: If the Source Cell is different from the Target Cell:

Release security.

Release SRBs and DRBs.

(Re-)configure SRBs.

Stop UL grant and periodic TA.

NOTE 5: The FollowOnFlag is set to true in the ASP configuring the SRBs

#### 7.3.5.5 NR-DC PSCell change

##### 7.3.5.5.1 Sequence of NR-DC inter-cell PSCell change

In general, the NR inter-cell PSCell change is done without activation time, i.e. the timing information for configuration of the SS and sending of the *RRCReconfiguration* is ‘Now'.

1. NR Target PSCell: Configuration of SRB3 (if necessary) and DRBs.

2. Transfer of the PDCP Count for DRBs and SRB3 (if necessary) from NR source to NR target PSCell:

a) NR Source PSCell: Get PDCP COUNT.

b) NR Target PSCell: Set PDCP COUNT.

NOTE 1: No further sending/receiving of DRB data before the PSCell change is done.

NOTE 2: For AM DRBs the PDCP count is maintained. For SRB3 (if applied) and UM DRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

3. NR Target PSCell: Inform the SS about the PSCell change and about the source cell id.

4. NR Target PSCell: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 3: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

5. NR Target PSCell: Activate security.

6. NR Target PSCell: Configure UL grant configuration ("OnSR", default grant).

NOTE 4: Unless explicitly specified UL grant configuration keeps configured as per default at the NR source PSCell.

7. NR PCell: Send *RRCReconfiguration*.

8. NR PCell: Receive *RRCReconfigurationComplete*.

9. NR Target PSCell: Inform the SS about completion of the PSCell change (e.g. to trigger PDCP STATUS REPORT PDU).

10. NR Source PSCell: Release SRB3 (if necessary) and DRBs.

##### 7.3.5.5.2 Sequence of NR-DC intra-cell PSCell change

For NR-DC NR intra-cell PSCell change dedicated timing information is used: the sequence starts at time T with sending of the *RRCReconfiguration*. T is set to 300 ms in advance of the PSCell change.

1. NR PSCell before T: Get PDCP count for DRBs and SRB3 (if applied).

2. NR PCell at T: Send *RRCReconfiguration*.

3. NR PSCell at T: Release SRB3 (if necessary) and DRBs.

4. NR PSCell at T: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 1: The FollowOnFlag is set to true in the ASP reconfiguring C-RNTI.

5. NR PSCell at T + 5ms: (Re-)configure SRB3 (if necessary) and DRBs.

6. NR PSCell at T + 5ms: Restore the PDCP counts

NOTE 2: For AM DRBs the PDCP count is maintained. For SRB3 (if applied) and UM DRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

7. NR PSCell at T + 5ms: Re-establish security.

8. NR PCell: Receive *RRCReconfigurationComplete*.

##### 7.3.5.5.3 Sequence of NR-DC intra-PCell handover and intra-cell PSCell change

For NR-DC intra-NR intra PCell handover dedicated timing information is used: the sequence starts at time T with sending of the *RRCReconfiguration*. T is set to 300 ms in advance of the handover.

1. PCell and PSCell before T: Get PDCP count for AM DRBs and SRBs (if applied).

2. PCell At T : Send *RRCReconfiguration*.

3. PCell and PSCell at T + 5ms: Release SRBs and DRBs.

4. PCell and PSCell at T + 5ms: Configure RACH procedure either dedicated or C-RNTI based.

NOTE 1: Since the RACH procedure may require a new C-RNTI to be used it cannot be configured before sending out the *RRCReconfiguration*.

NOTE 2: The FollowOnFlag is set to true in the ASPs reconfiguring the RadioBearerList (step 3) and C-RNTI (step 4).

5. PCell and PSCell at T + 10ms: (Re-) configure SRBs and DRBs.

7. PCell and PSCell at T + 10ms: Set PDCP COUNT for AM DRBs and SRBs (if applied).

NOTE 3: For AM DRBs the PDCP count is maintained while for UM DRBs the PDCP count is reset. For SRBs, the PDCP count is maintained or reset depending on the *RRCReconfiguration* message content.

8. PCell and PSCell at T + 10ms: Re-establish security, disable TA transmission.

9. PCell (after step 8) Receive *RRCReconfigurationComplete*.

10. PCell (after step 9) Re-configure RACH procedure as for initial access, enable TA transmissions.

NOTE 4: The FollowOnFlag is set to true in the ASP reconfiguring RACH.

### 7.3.6 Bearers

#### 7.3.6.1 DRB Identity Management

If a UE is configured to establish more than one PDU session at switch on, the order in which they are requested by the UE cannot be guaranteed; and in fact may be different between successive instances of switching on in the same test case. In order to align NR/5GC with EN-DC and E-UTRA/EPC, TTCN allocates:

- *drb-Identity* 1 for the default DRB of the PDU session for IMS.

- *drb-Identity* 2 onwards for other DRB(s).

### 7.3.7 Processing delay testing for RRC procedures

#### 7.3.7.1 Introduction

Test cases testing RRC procedure delay (according to TS 38.331 [16] clause 12), when UE is PUCCH synchronized and can respond to UL grant, require special test method.

#### 7.3.7.2 Procedure delays in PUCCH synchronized state

The following SS and UE configurations apply:

By default in TS 38.508-1[5] DRX is not configured.

By default SS is configured to retransmit any DL MAC PDU max 4 times.

HARQ retransmissions in UL cannot be compensated, any HARQ error in UL shall result in an inconclusive verdict for the test case (otherwise a UE may get fail due to a HARQ error).

SS is configured to report UL HARQ ACK/NACK received from UE to TTCN.

NOTE: Due to L2 signalling (e.g. RLC STATUS PDUs) it is necessary to limit the reporting of UL HARQ ACK/NACK to the time between sending of the DL RRC message and receiving the HARQ ACK.

To avoid unexpected side effects the *timeAlignmentTimer* is set to infinity and TTCN configures the SS to not send any Timing Advance Command MAC CE during the test case body (since this may result in additional UL HARQ ACK/NACK).

SS is configured to report HARQ errors and in the case of an UL HARQ error, an inconclusive verdict is assigned.

The following timing applies:

Let Nsf be the maximum allowed RRC procedure delay value (in ms) as specified in the test case prose. Nsf is the maximum time allowed for UE from the end of reception of the DL message on the UE physical layer up to when the UE shall be ready for the reception of UL grant for the transmission of the response message.

NOTE: A tolerance may have been added to the Nsf value in the test case prose on top of the RRC procedure delay specified in TS 38.331 [16] clause 12.

Let Nslot = (Nsf \* ) + 1



TTCN schedules at time T1 the transmission of the DL message to the UE.

T2 is the time HARQ ACK is received.

TTCN schedules UL grants from T3: T3 = T1 + Nslot + ∆1

∆1 is expressed in slots. T1 and T3 timing are expressed in SFN/subframe/slots.

For FDD

∆1 = 0

The UL grant is repeated continuously in every slot

For FR1 TDD SCS=15kHz

∆1 = 5 - (T1 + Nslot) mod 5. This is the possible slot delay since not all slots can be used for UL grant.

The UL grant periodicity is set to 5 slots. It is repeated in subframe#0 and subframe#5, to cope with K2=4 and the UL subframe#4 and subframe#9.

For FR1 TDD SCS=30kHz

∆1 = (4 - (T1 + Nslot) mod 10) mod10. This is the possible slot delay since not all slots can be used for UL grant.

The UL grant periodicity is set to 10 slots. It is repeated in slot#0 in subframe#2 and subframe#7, to cope with K2=4 and the UL slots: slot#0 in subframe#4 and subframe#9.

For FR2 TDD SCS=120kHz

∆1 = (5- (T1 + Nslot) mod 5) mod 5. This is the possible slot delay since not all slots can be used for UL grant.

The UL grant periodicity is set to 5 slots. It is repeated for possible transmission in every UL slots.

The UL data is received by SS at T4.

The RRC procedure delay requirements are fulfilled when: (T4-K2) - (T2 - K1) <= Nslot + ∆2

∆2 is expressed in slots. T4 and T2 timing are expressed in SFN/subframe/slots.

For FDD

∆2 =0

For FR1 TDD SCS=15kHz

∆2 = 5 - (T2-K1 + Nslot) mod 5

For FR1 TDD SCS=30kHz

∆2 = (4 - (T2-K1 + Nslot) mod 10) mod10

For FR2 TDD SCS=120kHz

∆2 = (5- (T2-K1 + Nslot) mod 5) mod 5

Figure 7.3.7.2-1 shows the RRC procedure delay check sequence that will be applied when the DL Message is retransmitted once when UE is in PUCCH synchronized state and can respond to UL grants.

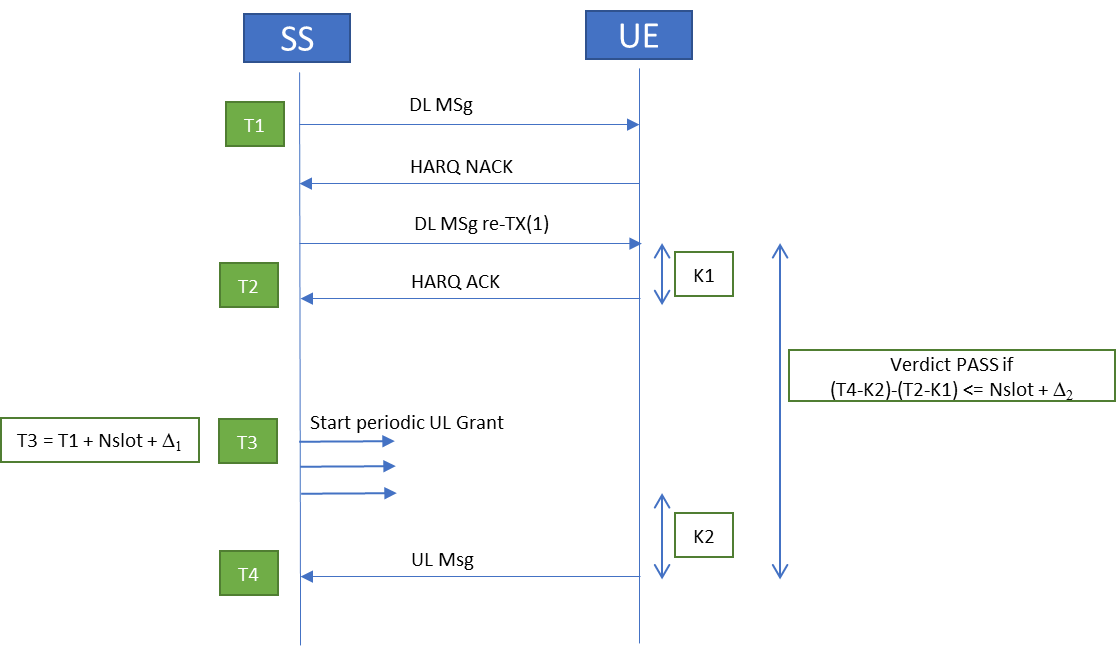


Figure 7.3.7.2-1: Delays in PUCCH synchronized state

#### 7.3.7.3 Procedure delays with RACH procedure

The following SS and UE configurations apply:

SS is configured with RACH procedure with contention-based with C-RNTI based contention resolution.

By default in TS 38.508-1[5] DRX is not configured.

In TTCN, this procedure delays with RACH is implemented in parallel to the PUCCH synchronized state procedure, as defined in clause 7.3.7.2, as some UEs may use SR/PUCCH. Therefore, SS is configured to retransmit any DL MAC PDU max 4 times.

No HARQ retransmission of *RRCReestablishment* is taken into account in the delay calculation in the procedure with RACH.

HARQ retransmissions in UL cannot be compensated, any HARQ error in UL shall result in an inconclusive verdict for the test case (otherwise a UE may get fail due to a HARQ error).

SS is configured to report UL HARQ ACK/NACK received from UE to TTCN.

NOTE: Due to L2 signalling (e.g. RLC STATUS PDUs) it is necessary to limit the reporting of UL HARQ ACK/NACK to the time between sending of the DL RRC message and receiving the HARQ ACK.

By default, the *timeAlignmentTimer* is set to infinity and TTCN configures the SS to not send any Timing Advance Command MAC CE during the test case body (since this may result in additional UL HARQ ACK/NACK).

SS is configured to report HARQ errors and in the case of an UL HARQ error, an inconclusive verdict is assigned.

SS is configured to report RACH preamble.

The following timing applies:

Let Nsf be the maximum allowed RRC procedure delay value (in ms) as specified in the test case prose. Nsf is the maximum time allowed for UE from the end of reception of the DL message on the UE physical layer up to when the UE shall be ready for the reception of UL grant for the transmission of the response message.

Let Nslot = (Nsf \* ) + 1



TTCN schedules at time T1 the transmission of the DL message to the UE as specified in the prose.

T2 is the time HARQ ACK is received.

TTCN schedules UL grants from T3: T3 = T1 + Nslot + ∆1 (as per clause 7.3.7.2)

The UL RACH preamble is received at T5

T6 is the last occasion for SS to transmit RAR in message 2

The UL data is received by SS at T4

The RRC procedure delay requirements are fulfilled when: T4 - T1 <= Nslot + ∆TDelaymax

∆TDelaymax is expressed in slots. T4 and T1 timing are expressed in SFN/subframe/slots.

For FDD SCS=15kHz

∆TDelaymax  = 13

For FDD SCS=30kHz

∆TDelaymax  = 30

For FR1 TDD SCS=15kHz

∆TDelaymax  = 7

For FR1 TDD SCS=30kHz

∆TDelaymax  = 17

For FR2 TDD SCS=120kHz

∆TDelaymax  = 32

Figure 7.3.7.3-1 shows the RRC procedure delay check sequence that will be applied when the DL Message is retransmitted once when UE is in PUCCH synchronized state and can respond to UL grants.

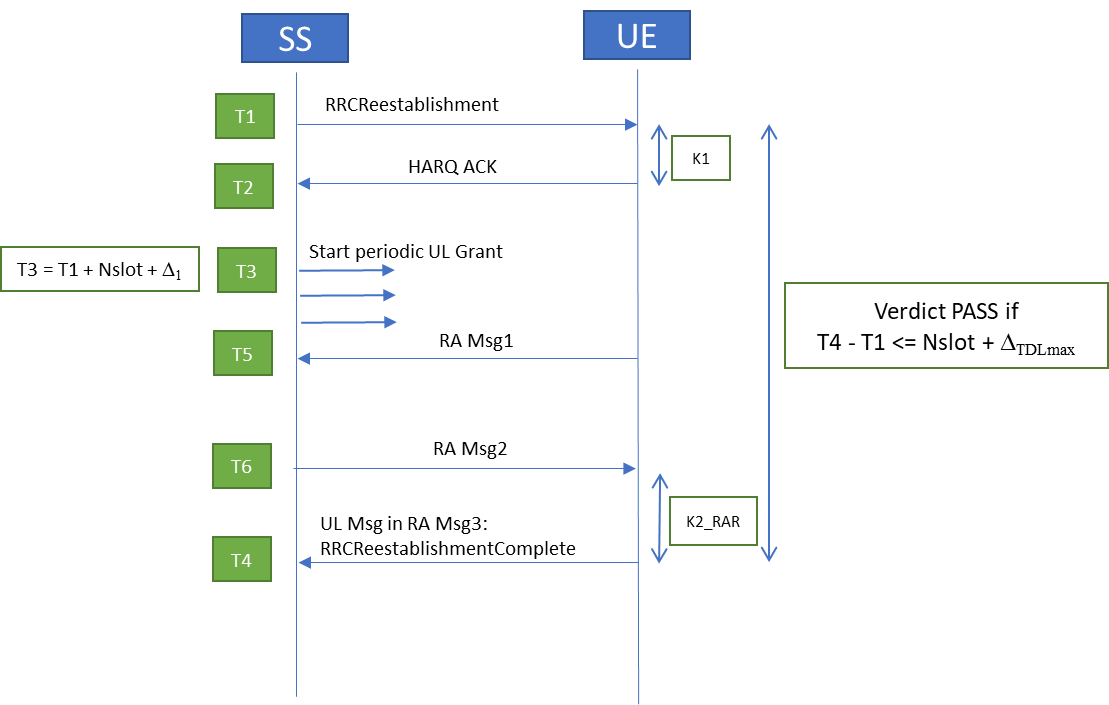


Figure 7.3.7.3-1: Delays with RACH procedure

### 7.3.8 Void

7.4 NR sidelink

### 7.4.1 Introduction

Test cases testing sidelink require a special test method.

7.4.2 Physical and MAC layer aspects

#### 7.4.2.1 General

For each configured SL BWP, the TTCN may configure resource pools for transmission and/or reception. TTCN configures NR-SS-UE with reception pool equivalent to UE transmission pool and TTCN configures NR-SS-UE with transmission pool equivalent to UE reception pool.

NR-SS-UE is not configured to do any sensing.

#### 7.4.2.2 Timing

##### 7.4.2.2.1 NR-SS-UE timing synchronisation

The SS shall provide one system time common across all RATs and NR-SS-UEs. The timing of each configured NR-SS-UE is specified as an offset to this common system time.

For timing synchronisation, the NR-SS-UE can be configured:

- In coverage of an NR cell: the NR-SS-UE is associated with an NR cell, it selects the NR Cell as synchronisation reference source. NR-SS-UE applies the same timing start and timing offsets as the NR cell, the DFN corresponds to the SFN.

- Out of coverage synchronising from the GNSS signal: the NR-SS-UE selects the GNSS signal as the synchronisation reference source. The DFN, subframe and slot numbers are derived from the UTC time of the GNSS signal as specified in TS 38.331 [16] clause 5.8.12.

- Out of coverage synchronising from UE: the UE under test is the synchronisation source, i.e. the SyncRef UE. The NR-SS-UE shall use the received SLSS and *MasterInformationBlock-SL-V2X* transmitted by UE as synchronisation source as specified in TS 38.331 [16], clause 5.8.6.

- Out of coverage without synchronisation reference source: NR-SS-UE shall initiate autonomously the DirectFrameNumber, Subframe and slot numbers using respective offsets specified in test case prose or Table 7.3.8.2-1. The timing of each configured NR-SS-UE is specified as an offset to the common system time.

Table 7.3.8.2-1: Timing parameters of NR-SS-UEs

|  |  |  |  |
| --- | --- | --- | --- |
| NR cell Id | DFN-offset  (note 1) | Tcell  offset  (note 2) | Tc-offset  (note 3) |
| NR SS UE 1 | 0 | 0 | 0 |
| NR SS UE 2 | 5 | 1 | 216 |
| NR SS UE 3 | 253 | 4 | 1523 |
| NOTE 1: DFN-offset corresponds to the offset applied on system frame number (0..1023).  NOTE 2: Tcell corresponds to the timing offset in Ts. Ts = 1/(15000 \* 2048) as for NR.  NOTE 3: Tc-offset corresponds to the timing offset in Tc. κ = Ts/Tc = 64 with Tc = 1/(480000 \* 4096). See TS 38.211 [19] subclause 4.1 and TS 36.211 [23] subclause 4). | | | |

No timing advance is applied to NR-SS-UE.

##### 7.4.2.2.2 ASP timing

The timing information provided by the request ASP for a transmission on PC5 specifies the slot in which the SCI format 1-A is transmitted. If the configured SCI indicates one PSSCH resource, the NR-SS-UE shall transmit the PSSCH in the same slot as the corresponding SCI. If the configured SCI indicates multiple PSSCH resources, the request ASP provides the corresponding list of SDU/PDU to be transmitted, i.e. one SDU/PDU is provided per PSSCH resource. The configured SCI specifies the slot offset between PSSCH as specified in TS 38.214 [22] clause 8.1.5.

In case the TimingInfo indicates “Now” or “Any slot”, it is up to the NR-SS-UE to find the appropriate sidelink slot for scheduling PCCH/PSSCH. Sidelink slots are specified as per TS 38.214 [22] clause 8.1.2.1. When configured for SLSS and MasterInformationBlockSidelink reception and/or transmission, NR-SS-UE shall not transmit in slots reserved for S-SS/PSBCH. When configured with PSFCH, the NR-SS-UE shall not transmit PSSCH in symbols which are configured for PSFCH.

In case of TimingInfo not being “Now” TTCN shall ensure that the data is scheduled at least 100ms in advance.

In reception, NR-SS-UE monitors all sidelink slots, no SCI is configured in reception. NR-SS-UE reports to TTCN the data matching the configured source and/or destination Layer-2 ID.

#### 7.4.2.3 SLSS/PSBCH transmission and reception

When the NR-SS-UE is configured to transmit S-SS/PSBCH, the following rules apply:

- TTCN provides the *MasterInformationBlockSidelink* to the NR-SS-UE as an structured ASN.1 type using the sidelink system control port. The NR-SS-UE shall set the *directFrameNumber* and *slotIndex* in the *MasterInformationBlockSidelink* according to TS 38.331 [16] clause 5.8.9.4.3. A dummy value is provided by TTCN.

- The NR-SS-UE shall encode the *MasterInformationBlockSidelink* ASN.1 message as specified in Table 8.1-1.

- The NR-SS-UE shall transmit the encoded *MasterInformationBlockSidelink* message periodically as specified in TS 38.331 [16]. For each transmission, the SS shall update *directFrameNumber* and *slotIndex* value as specified above.

When the NR-SS-UE is configured to receive S-SS/PSBCH, the following rules apply:

- NR-SS-UE can be configured in out of coverage synchronising from UE.

- NR-SS-UE shall report SL-SSID and *MasterInformationBlockSidelink* over the sidelink system indication port when configured to do so.

#### 7.4.2.4 Resource allocation in frequency domain

##### 7.4.2.4.1 General

TS 38.214 [22] clause 8.1.3.2 describes the transport block size (TBS) determination from the UE’s point of view: the UE calculates the TBS depending on several parameters. From a test model’s point of view appropriate values need to be found for the parameters to achieve a given TBS and the corresponding .



Scheduling mode for transmission is only in automatic mode. The NR-SS-UE shall apply the rules as described in clause 7.3.8.6.3.2.

##### 7.4.2.4.2 Automatic mode - Determination of TBS and corresponding



In automatic mode, for each PSSCH transmission, the SS shall autonomously select a TBS and a **LRBs / IMCS** pair for this TBS as according to clause 7.1.2.2.4.2 and according to the minimum and maximum MCS values provided in NR\_SL\_ResourcePool\_Type.sl\_MaxTxTransNumPSSCH\_r16. NR-SS-UE defines using the **LRBs / IMCS** pair.



The SS implementation shall comply to the above requirements and be based on the following assumptions:

- Number of layers υ = 1

- xOverhead = 0

- sl-PSSCH-DMRS-TimePattern = 2

- sl-LengthSymbols = 14

Further details are left up to SS implementation.

#### 7.4.2.5 HARQ processes and retransmissions

When configured in reception, the NR-SS-UE is configured with the maximum number of HARQ retransmission (NR\_SL\_ResourcePool\_Type.sl\_MaxTxTransNumPSSCH\_r16). According to TS 38.321[13] clause 5.22.1.1, UE selects the number of HARQ retransmissions from this maximum allowed number. Unless explicitly specified in the test model, retransmissions are not transmitted to TTCN.

When configured in transmission, the maximum number of HARQ retransmission (NR\_SL\_ResourcePool\_Type. sl\_MaxTxTransNumPSSCH\_r16) indicates to NR-SS-UE the exact number of retransmissions to be applied unless PSFCH is configured and ack is received from the UE under test.

When PSFCH is configured in the resource pool, if NR-SS-UE receives a PSSCH and the HARQ feedback enabled/disabled indicator field in the associated SCI format 2-A or SCI format 2-B has value 1, the NR-SS-UE shall provide to UE under test the HARQ-ACK/NACK information in a PSFCH transmission in the resource pool as specified in TS 38.321[13].

7.4.3 SCCH and STCH data transmission and reception

#### 7.4.3.1 Broadcast and groupcast

UE and NR-SS-UE are configured with the same pool(s) of resources.

When configured in transmission, the SL-DRB in NR-SS-UE is configured with:

- NR-SS-UE layer-2 ID (which corresponds to the source layer-2 ID) is set to a constant and

- UE Layer-2 ID (which corresponds to the destination layer-2 ID) is set to the destination layer-2 ID for broadcast or groupcast (TS 38.508-1 [5]) .

- The initial value of the SN is set to a constant value.

When configured in reception, the SL-DRB in NR-SS-UE is configured with:

- NR-SS-UE layer-2 ID (which corresponds to the destination layer-2 ID) is set to the destination layer-2 ID for broadcast or groupcast (TS 38.508-1 [5]); NR-SS-UE shall send to TTCN only the data packets received with the correct destination layer-2 identities in the MAC header.

- UE Layer-2 ID (which corresponds to the source layer-2 ID) is set to ‘AnyValue’ as it is randomly and uniquely self-selected by UE.

- Logical Channel Id is set to ‘AnyValue’ as it is selected by the transmitting UE.

- The initial value of the SN is set to the SN of the first received PDCP Data PDU.

#### 7.4.3.2 Unicast

##### 7.4.3.2.1 General

UE and NR-SS-UE are configured with the same pool(s) of resources.

##### 7.4.3.2.2 Unicast procedures

###### 7.4.3.2.2.1 UE initiated PC5 unicast direct link communication

In general, the UE initiating PC5 unicast direct link communication procedure is done without activation time.

1. NR-SS-UE is previously configured with Tx and Rx pools. SL-SRB0/1/2/3 are configured with UE layer-2 ID and NR-SS-UE layer-2 ID set to ‘AnyValue’.

2. Receive DIRECT LINK ESTABLISHMENT REQUEST message on SL-SRB0.

NOTE 1: The Source and destination Layer-2 IDs used to transmit the message are reported in the common part of NR\_SL\_SYSTEM\_IND.

3. Reconfigure SL-SRB1/2/3: set the UE layer-2 ID with the source Layer-2 ID received with the DIRECT LINK ESTABLISHMENT REQUEST message. Set the NR-SS-UE Id to a constant.

4. Start ciphering and integrity on SL-SRB1/2/3.

5. Send DIRECT LINK SECURITY MODE COMMNAND on SL-SRB1.

6. Receive DIRECT LINK SECURITY MODE COMPLETE on SL-SRB1.

NOTE 2: Retrieve the PQFI from DIRECT LINK SECURITY MODE COMPLETE.

7. Send DIRECT LINK ESTABLISHMENT ACCEPT on SL-SRB2.

8. Receive *RRCReconfigurationSidelink* on SL-SRB3.

NOTE 3: Retrieve parameters to configure SL-DRB.

9. Configure SL-DRB.

10. Activate ciphering and integrity on SL-DRB.

11. Send *RRCReconfigurationCompleteSidelink* on SL-SRB3.

###### 7.4.3.2.2.2 NR-SS-UE initiated PC5 unicast direct link communication

In general, the NR-SS-UE initiating PC5 unicast direct link communication procedure is done without activation time.

1. NR-SS-UE is previously configured with Tx and Rx pools. SL-SRB0/1/2/3 configured with UE layer-2 ID set to the Destination layer-2 ID for unicast initial signalling (TS 38.508-1 [5] Table 4.7.5.5-42) and NR-SS-UE layer-2 ID set to a constant value.

2. Start ciphering and integrity on SL-SRB1/2/3.

3. Send DIRECT LINK ESTABLISHMENT REQUEST message on SL-SRB0.

4. Receive DIRECT LINK SECURITY MODE COMMNAND on SL-SRB1.

NOTE 1: The Source Layer-2 ID and destination Layer-2 ID used to transmit the message is reported in the common part of NR\_SL\_SYSTEM\_IND.

5. Reconfigure SL-SRB1/2/3: set the UE layer-2 ID to the source Layer-2 ID used by UE to transmit the DIRECT LINK SECURITY MODE COMMNAND message.

6. Send DIRECT LINK SECURITY MODE COMPLETE on SL-SRB1.

7. Receive DIRECT LINK ESTABLISHMENT ACCEPT on SL-SRB2.

8. Configure SL-DRB.

9. Activate ciphering and integrity on SL-DRB.

10. Send *RRCReconfigurationSidelink* on SL-SRB3.

11. Receive *RRCReconfigurationCompleteSidelink* on SL-SRB3.

# 8 Other SS requirements with TTCN-3 impact

## 8.1 Codec requirements

The SS shall comply with the requirements specified in TS 36.523-3 [12] subclause 8.1. In addition, the SS shall also comply with the codec requirements specified in Table 8.1-1.

Table 8.1-1: Codec requirements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type definitions | | Codec requirements | | Encoding rule in TTCN-3 | |
| NR ASN.1 types used for RRC signalling | | shall comply to TS 38.331 [16] subclause 8.3 | | UNALIGNED\_PER\_OctetAligned | |
| EAP types | | shall comply to Tabular Notated (see note) | | EAP Types | |
| LPP(e) ASN.1 types used for LPP(e) broadcast signalling | | shall comply to TS 37.355 [29] clause 7.4 | | UNALIGNED\_PER\_OctetAligned | |
| NOTE: Tabular Notated is performed by concatenation of all the present fields in the TTCN-3 template. | | | | | |

## 8.2 External function definitions

The SS shall implement the external functions specified in TS 36.523-3 [12] subclause 8.2.

The following external functions shall also be implemented by the SS.

|  |  |  |
| --- | --- | --- |
| TTCN-3 External Function | | |
| Name | **fx\_NG\_NasIntegrityAlgorithm** | |
| Description | Apply integrity protection algorithm on a given octetstring | |
| Parameters | NAS PDU | octetstring according to TS 24.501 [26], clause 4.4.3.3 this shall include octet 7 to n of the security protected NAS message, i.e. the sequence number IE and the NAS message IE |
| Integrity Algorithm | 4 bits as defined in TS 24.501 [26], clause 9.11.3.34 |
| KNASint | Integrity key |
| NAS COUNT | as documented in TS 24.501 [26] |
| BEARER Id | fix value of '00000'B for 3GPP access and '00001'B for non-3GPP access |
| Direction | UL: 0 DL: 1 (acc. to TS 33.501 [25], clause D.3.1) |
| Return Value | Message Authentication Code (4 octets) | |

|  |  |  |
| --- | --- | --- |
| TTCN-3 External Function | | |
| Name | **fx\_NG\_NasCiphering** | |
| Description | Apply ciphering on a given octetstring | |
| Parameters | NAS PDU | octetstring |
| Ciphering Algorithm | 4 bits as defined in TS 24.501 [26], clause 9.11.3.34 |
| KNASenc | Ciphering Key |
| NAS COUNT | as documented in TS 24.501 [26] |
| BEARER Id | fix value of '00000'B for 3GPP access and '00001'B for non-3GPP access |
| Return Value | ciphered octet string | |

|  |  |  |
| --- | --- | --- |
| TTCN-3 External Function | | |
| Name | **fx\_NG\_NasDeciphering** | |
| Description | Apply deciphering on a given octetstring | |
| Parameters | ciphered NAS PDU | octetstring |
| Ciphering Algorithm | 4 bits as defined in TS 24.501 [26], clause 9.11.3.34 |
| KNASenc | Ciphering Key |
| NAS COUNT | as documented in TS 24.501 [26] |
| BEARER Id | fix value of '00000'B for 3GPP access and '00001'B for non-3GPP access |
| Return Value | deciphered octet string | |

|  |  |  |
| --- | --- | --- |
| TTCN-3 External Function | | |
| Name | **fx\_NR\_AsIntegrityAlgorithm** | |
| Description | Apply integrity protection algorithm on a given octetstring | |
| Parameters | PDCP PDU | octetstring |
| Integrity Algorithm | 3 bits as defined in TS 33.501 [25] |
| KRRCint | Integrity key |
| PDCP COUNT | octetstring, length 4 |
| BEARER Id | the value of the DRB identity minus one |
| Direction | UL: 0 DL: 1 (acc. to TS 33.501 [25], clause D.3) |
| Return Value | Message Authentication Code (4 octets) | |

# 9 IXIT proforma

## 9.1 Introduction

The partial IXIT proforma contained in the present document is provided for completion, when the related Abstract Test Suite(s) is(are) to be used against the Implementation Under Test (IUT).

The completed partial IXIT will normally be used in conjunction with the completed ICS, as it adds precision to the information provided by the ICS.

The PIXITs specified in TS 36.523-3 [12] clause 9 apply. Additional 5GS PIXITs are specified in the following subclauses.

## 9.2 E-UTRA and NR PIXIT

Table 9.2-1: E-UTRA and NR PIXIT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter Name | Parameter Type | Default Value | Supported Values | Description |
| px\_ENDC\_BandCombination | ENDC\_BandCombination\_Type | DC\_1A\_n28A |  | EN-DC Band Combination |
| px\_ENDC\_CA\_BandCombination | ENDC\_CA\_BandCombination\_Type | DC\_1A\_n28A\_n78A |  | EN-DC CA Band Combination |
| px\_ENDC\_SecondaryBandCombination | ENDC\_BandCombination\_Type | DC\_1A\_n77A |  | Secondary EN-DC Band Combination |
| px\_IPv4\_Address\_Other | charstring |  |  | Other IPv4 Address  (see NOTE 4) |
| px\_IPv6\_Address\_Other | charstring |  |  | Other IPv6 Address  (see NOTE 4) |
| px\_IPv4\_Address4\_NW | charstring |  |  | IPv4 Gateway Address in PDN4 |
| px\_IPv6\_Address4\_NW | charstring |  |  | IPv6 Gateway Address in PDN4 |
| px\_IPv4\_Address4\_UE | charstring |  |  | IPv4 Address connected to PDN4 |
| px\_IPv6\_Address4\_UE | charstring |  |  | IPv6 Address connected to PDN4 |
| px\_IPv4\_Address5\_NW | charstring |  |  | IPv4 Gateway Address in PDN5 |
| px\_IPv6\_Address5\_NW | charstring |  |  | IPv6 Gateway Address in PDN5 |
| px\_IPv4\_Address5\_UE | charstring |  |  | IPv4 Address connected to PDN5 |
| px\_IPv6\_Address5\_UE | charstring |  |  | IPv6 Address connected to PDN5 |
| px\_IPv4\_Address6\_NW | charstring |  |  | IPv4 Gateway Address in PDN6 |
| px\_IPv6\_Address6\_NW | charstring |  |  | IPv6 Gateway Address in PDN6 |
| px\_IPv4\_Address6\_UE | charstring |  |  | IPv4 Address connected to PDN6 |
| px\_IPv6\_Address6\_UE | charstring |  |  | IPv6 Address connected to PDN6 |
| px\_NEDC\_BandCombination | NEDC\_BandCombination\_Type | DC\_n28A\_3A |  | NE-DC Band Combination |
| px\_NEDC\_SecondaryBandCombination | NEDC\_BandCombination\_Type | DC\_n28A\_39A |  | Secondary NE-DC Band Combination |
| px\_NR\_CA\_BandCombination | NR\_CA\_BandCombination\_Type | CA\_n3A\_n77A |  | NR CA Band Combination with 2CC |
| px\_NR\_CA\_3CC\_BandCombination | NR\_CA\_3CC\_BandCombination\_Type | CA\_n257H |  | NR CA Band Combination with 3CC |
| px\_NR\_DC\_BandCombination | NR\_DC\_BandCombination\_Type | DC\_n78A\_n257A |  | NR-DC Band Combination |
| px\_NR\_DC\_CA\_BandCombination | NR\_DC\_CA\_BandCombination\_Type | DC\_n78A\_n257G |  | NR-DC CA Band Combination |
| px\_NR\_CipheringAlgorithm | CipheringAlgorithm | nea2 |  | Ciphering Algorithm (see Note 1) |
| px\_NR\_IntegrityProtAlgorithm | IntegrityProtAlgorithm | nia2 |  | Integrity Algorithm (see Note 1) |
| px\_NR\_OverlappingNotSupportedBand\_MFBI | integer | 1 |  | A not supported NR band that is overlapping with a supported band (px\_NR\_PrimaryBand). Applied to MFBI test case scenario. |
| px\_NR\_PrimaryBand | integer | 1 |  | NR primary band |
| px\_NR\_SecondaryBand | integer | 2 |  | NR secondary band. Applied to inter-band and SUL test cases. |
| px\_NR\_SidelinkBand | integer | 47 |  | NR sidelink band |
| px\_NR\_RATComb\_Tested | NR\_RATComb\_Tested\_Type | NR\_UTRA | NR\_UTRA, NR\_GERAN | This parameter represents the network RAT capability / preference and indicates which, if  any is supported, RAT combination is to be tested. |
| px\_NR\_V2X\_ConcurrentOperationBandCombination | NR\_V2X\_ConcurrentOperationBandCombination\_Type | V2X\_n71\_n47 |  | V2X operating bands for con-current operation |
| NOTE 1: Unless specified otherwise in the test case prose, the null algorithm shall not be used for verification.  NOTE 2: Void.  NOTE 3: Void.  NOTE 4: IP address used for specific IP-address-related test requirements. The only requirements applying to this IP address is that its value shall be different from the values of all other IP address PIXITs (see TS 36.523-3 [12] clause 9) and it shall not be used within more than one PDN (PDU session) within a test case. In the present version of this specification, it is only used within PDN1 NW. | | | | |

## 9.3 5GC PIXIT

Table 9.3-1: Void

Table 9.3-2: 5GC PIXIT

| Parameter Name | Parameter Type | Default Value | Supported Values | Description |
| --- | --- | --- | --- | --- |
| px\_NAS\_5GC\_AuthenticationType | NAS\_5GC\_AKA\_Type | AKA\_5G | AKA\_5G, AKAP\_EAP | NAS 5GC Authentication type |
| px\_NAS\_5GC\_CipheringAlgorithm | B4\_Type | ‘0010’B |  | NAS 5GC Ciphering Algorithm (see Note 1) |
| px\_NAS\_5GC\_IntegrityProtAlgorithm | B4\_Type | ‘0010’B |  | NAS 5GC Integrity Algorithm (see Note 1) |
| px\_NAS\_5GC\_XRES\_Length | integer | 16 |  | NAS 5GC XRES length, in octets, used in Authentication |
| NOTE 1: Unless specified otherwise in the test case prose, the null algorithm shall not be used for verification. | | | | |

# 10 Postambles

## 10.1 Introduction

The purpose of the present clause 10 is to specify the postambles used to bring the UE to a well-defined state regardless of the UE state at the termination of main test body or of the SS conditions and values of the system information inherited from the test.

## 10.2 On E-UTRA/EPC

### 10.2.1 UE postamble states and procedures

In order to bring the UE to switched/powered off state there are some procedures that need to be executed. The identified procedures are shown in figure 10.2.1-1.



Figure 10.2.1-1: UE postamble states and procedures for E-UTRA/EPC

### 10.2.2 Switch/Power off procedure in State E1

Table 10.2.2-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1-2a3Aa5 | Same as TS 36.523-3 [12] table 10.3.2.1-1, steps 1-2a3Aa5. | - | - |
| - | EXCEPTION: Step 2a3Aa5Aa1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - |
| 2a3Aa5Aa1 | IF the UE is connected to one or more additional PDNs, then the procedure specified in table 10.2.2-2 may take place. | - | - |
| 2a3Aa6 - 2a4 | Same as TS 36.523-3 [12] table 10.3.2.1-1, steps 2a3Aa6 - 2a4. | - | - |

Table 10.2.2-2: PDN disconnect procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | The UE transmits a PDN DISCONNECT REQUEST | --> | RRC: *ULInformationTransfer*  PDN DISCONNECT REQUEST |
| 2 | The SS transmits an *RRCConnectionReconfiguration* message to deactivate an EPS bearer. | <-- | RRC: *RRCConnectionReconfiguration*  NAS: DEACTIVATE EPS BEARER CONTEXT REQUEST |
| - | EXCEPTION: The events in steps 3 and 4 may occur in any order | - | - |
| 3 | The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the deactivation of EPS bearer. | --> | RRC: *RRCConnectionReconfigurationComplete* |
| 4 | The UE transmits an *ULInformationTransfer* message to accept deactivation of the EPS bearer. | --> | RRC: *ULInformationTransfer*  NAS: DEACTIVATE EPS BEARER CONTEXT ACCEPT |

### 10.2.3 Switch/Power off procedure in States E2 and E3

#### 10.2.3.1 Procedure for E2 and E3

Table 10.2.3.1-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1-2a1Aa2 | Same as TS 36.523-3 [12] table 10.3.3.1-1, steps 1-2a1Aa2. | - | - |
| - | EXCEPTION: Step 2a1Aa3a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - |
| 2a1Aa3a1 | IF the UE is connected to one or more additional PDNs, then the procedure specified in table 10.2.2-2 may take place. | - | - |
| 2a1-2a2 | Same as TS 36.523-3 [12] table 10.3.3.1-1, steps 2a1-2a2. | - | - |

#### 10.2.3.2 Procedure for E2\_T3440

Table 10.2.3.2-1: RRC release and switch/power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1-4a3Aa5 | Same as TS 36.523-3 [12] table 10.3.3.2-1, steps 1-4a3Aa5. | - | - |
| - | EXCEPTION: Step 4a3Aa5Aa1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - |
| 4a3Aa5Aa1 | IF the UE is connected to one or more additional PDNs, then the procedure specified in table 10.2.2-2 may take place. | - | - |
| 4a3Aa6 - 4a4 | Same as TS 36.523-3 [12] table 10.3.3.2-1, steps 4a3Aa6 – 4a4. | - | - |

### 10.2.4 Switch/Power off procedure in State E4

The procedure specified in TS 36.523-3 [12] subclause 10.3.4 applies.

### 10.2.5 Automatic selection mode procedure in State E5 (current cell, neighbour cell)

The procedure specified in TS 36.523-3 [12] subclause 10.3.5 applies.

## 10.3 On NR/5GC

### 10.3.1 UE postamble states and procedures

In order to bring the UE to the switched/powered off state, a procedure needs to be executed, which depends on the UE state at the end of test case body. The UE postamble start states and associated procedures are shown in figure 10.3.1-1.



Figure 10.3.1-1: UE postamble states and procedures for NR/5GC

If the test body ends by releasing an emergency call whilst in limited service, the UE may be in either NR REGISTERED or in NR DEREGISTERED state as the UE behaviour is not specified. The postamble procedures shall allow for both possible start states.



Figure 10.3.1-2: UE postamble states and procedures after emergency call release in limited service

### 10.3.2 Switch/Power off procedure in State 1N-A

Table 10.3.2-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | Test procedure for Switch off / Power off in RRC\_IDLE as specified in 38.508-1 [5] subclause 4.9.6.1 | - | - |

### 10.3.3 Switch/Power off procedure in State 2N-A

Table 10.3.3-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | Test procedure for Switch off / Power off in RRC\_INACTIVE as specified in 38.508-1 [5] subclause 4.9.6.2 |  |  |

### 10.3.4 Switch/Power off procedure in State 3N-A

Table 10.3.4-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | Test procedure for Switch off / Power off in RRC\_CONNECTED as specified in 38.508-1 [5] subclause 4.9.6.3 | - | - |

### 10.3.4A Switch/Power off procedure in State 3N-A with T3540 started

Table 10.3.4A-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | Test procedure for Switch off / Power off in RRC\_CONNECTED with T3540 started as specified in 38.508-1 [5] subclause 4.9.6.3A | - | - |

### 10.3.5 Switch/Power off procedure in NR DEREGISTERED

Table 10.3.5-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | Test procedure for Switch off / Power off in State DEREGISTERED as specified in 38.508-1 [5] subclause 4.9.6.4 | - | - |

### 10.3.6 Switch/Power off procedure after EMERGENCY CALL RELEASED in RRC\_IDLE

Table 10.3.6-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| - | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc\_SwitchOnOff or [37] pc\_USIM\_Removal is supported. | - | - |
| 1a1 | IF pc\_SwitchOnOff THEN switch off UE, IF pc\_USIM\_Removal THEN remove the USIM (NOTE 1) | - | - |
| 1a2 | Start T\_Delay=5 sec |  |  |
| - | EXCEPTION: Steps 1a3a1 to 1a3b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | - | - |
| 1a3a1 | The UE transmits an *RRCSetupRequest* message | --> | NR RRC: *RRCSetupRequest* |
| 1a3a2 | Stop T\_Delay |  |  |
| 1a3a3 | SS transmits an *RRCSetup* message | <-- | NR RRC: *RRCSetup* |
| 1a3a4 | The UE transmits an *RRCSetupComplete* message including the DEREGISTRATION REQUEST message | --> | NR RRC: *RRCSetupComplete*  5GMM: DEREGISTRATION REQUEST |
| 1a3a5 | The SS transmits an *RRCRelease* message | <-- | RRC: *RRCRelease* |
| 1a3b1 | T\_Delay expires (NOTE 2) | - | - |
| 1b1 | ELSE power off UE (NOTE 3) | - | - |
| NOTE 1: USIM removal is a feasible alternative to switch off UE.  NOTE 2: The UE has performed local deregistration  NOTE 3: Power off is used when UE does not support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. | | | |

### 10.3.7 Switch/Power off procedure after EMERGENCY CALL RELEASED in RRC\_CONNECTED

Table 10.3.7-1: Switch/Power off procedure

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Procedure | Message Sequence | |
| U - S | Message |
| 1 | The SS transmits a DEREGISTRATION REQUEST message with Deregistration type IE set to "re-registration not required". | <-- | NR RRC: *DLInformationTransfer*  5GMM: DEREGISTRATION REQUEST |
| 2 | Start T\_Delay=5 sec. |  |  |
| - | EXCEPTION: Steps 3a1 – 3c3 describe optional behaviour that depends on the UE implementation. | - | - |
| 3a1 | The UE transmits a DEREGISTRATION ACCEPT message. | --> | NR RRC: *ULInformationTransfer*  5GMM: DEREGISTRATION ACCEPT |
| 3a2 | Stop T\_Delay. |  |  |
| 3a3 | The SS transmits an *RRCRelease* message | <-- | RRC: *RRCRelease* |
| 3b1 | T\_Delay expires. (NOTE 1) | - | - |
| 3b2 | The SS locally releases the RRC connection. |  |  |
| 3c1 | The UE transmits a 5GMM STATUS message | --> | NR RRC: *ULInformationTransfer*  5GMM: 5GMM STATUS |
| 3c2 | Stop T\_Delay. |  |  |
| 3c3 | The SS transmits an *RRCRelease* message | <-- | RRC: *RRCRelease* |
| 4 | Test procedure for Switch off / Power off in State DEREGISTERED as specified in TS 38.508-1 [5] subclause 4.9.6.4. | - | - |
| NOTE 1: The UE has performed local deregistration, so the SS shall also perform the deregistration procedure. | | | |

Table 10.3.7-2: DEREGISTRATION REQUEST (Step 1, Table 10.3.7-1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Derivation Path: TS 38.508-1 [5], Table 4.7.1-14. | | | | | | | |
| Information Element | | Value/remark | | Comment | | Condition | |
| De-registration type | | ‘0001’B | | Re-registration not required | |  | |

## 10.4 On UTRAN

Please refer to TS 36.523-3 [12] subclause 10.1.

## 10.5 On NR sidelink

In order to bring the UE to switched/powered off state there are some procedures that need to be executed.

When UE is Out of coverage of an NR cell:

- When a PC5 unicast link is established, the PC5 release procedure as specified in TS 38.508-1[5] clause 4.9.30 is executed before UE is switched/powered off.

- When no PC5 unicast link is established, UE is switched/powered off.

When UE is In coverage of an NR cell:

- When a PC5 unicast link is established, the PC5 release procedure as specified in TS 38.508-1[5] clause 4.9.30 is executed then the NR postamble procedure as specified in clause 10.3 is executed.

- When no PC5 unicast link is established, the NR postamble procedure as specified in clause 10.3 is executed.

## 10.6 On GERAN

Please refer to TS 36.523-3 [12] subclause 10.2.

# 11 Guidelines on test execution

## 11.1 Introduction

Clause 11 provides the guidelines on test executions.

The restriction on test case execution is due to the number of frequencies available for the specific band under test specified in TS 38.508-1[5] and the number of frequencies used by the test cases specified in TS 38.523-1[8].

## 11.2 EN-DC

### 11.2.1 Single NR carrier

This clause provides the guidelines for the EN-DC test cases.

A test case using more than one radio frequency on NR, i.e. using the radio frequencies NRf2 or NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band combination DC\_1A\_n51A

Band combination DC\_20A\_n51A

Band combination DC\_28A\_n51A

Band combination DC\_3A\_n51A

Band combination DC\_41A\_n41A

Band combination DC\_42A\_n51A

Band combination DC\_7A\_n51A

The list of test cases is given below:

8.2.3.6.1a, 8.2.3.7.1a, 8.2.3.8.1a, 8.2.3.10.1, 8.2.3.11.1

## 11.3 NR/5GC

### 11.3.1 NR/5GC single RAT

#### 11.3.1.1 Single NR carrier

This clause provides the guidelines for the NR/5GC test cases.

A test case using more than one radio frequency, i.e. using the radio frequencies NRf2 or NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band n51.

The list of test cases is given below:

6.1.1.1, 6.1.1.2, 6.1.1.3, 6.1.1.5, 6.1.1.6, 6.1.1.7, 6.1.1.8, 6.1.2.7, 6.1.2.11, 6.1.2.13, 6.1.2.14, 6.1.2.16, 6.1.2.18, 6.1.2.20, 6.1.2.21, 6.1.2.22, 6.3.1.1, 6.3.1.2, 6.3.1.3, 6.3.1.4, 6.3.1.5, 6.3.1.8, 6.3.1.9, 6.3.1.10, 6.4.1.1, 6.4.1.2, 6.4.2.2, 6.5.1.2, 6.5.2.4, 6.5.2.6,

7.1.3.4.4

8.1.1.2.1, 8.1.1.3.1, 8.1.1.3.3, 8.1.1.3.7, 8.1.1.3.7b, 8.1.3.1.3, 8.1.3.1.6, 8.1.3.1.9, 8.1.3.1.11, 8.1.3.1.12, 8.1.3.1.14A, 8.1.3.1.15A, 8.1.3.1.20, 8.1.3.21, 8.1.4.1.2, 8.1.4.1.10, 8.1.4.3.4, 8.1.4.3.5, 8.1.6.1.2.2, 8.1.6.1.2.10, 8.1.6.1.3.2, 8.1.6.1.3.3, 8.1.6.1.3.7, 8.1.6.1.4.3, 8.1.6.1.4.7,

9.1.4.1, 9.1.5.1.1, 9.1.5.1.2, 9.1.5.1.4, 9.1.5.1.8, 9.1.5.1.10, 9.1.5.1.12, 9.1.5.1.14, 9.1.9.3,

11.3.5, 11.3.6, 11.3.8, 11.3.9,

11.4.7, 11.4.8.

A test case using more than two radio frequencies, i.e. using the radio frequencies NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band n14,

Band n24,

Band n30,

Band n53.

The list of test cases is given below:

6.1.1.1, 6.1.1.2, 6.1.1.3, 6.1.1.5, 6.1.1.6, 6.1.1.7, 6.1.1.8, 6.1.2.7, 6.1.2.11, 6.1.2.20, 6.3.1.1, 6.3.1.2, 6.3.1.3, 6.3.1.5, 6.3.1.8, 6.4.1.1, 6.4.1.2, 6.4.2.2, 6.5.2.4, 6.5.2.6,

8.1.1.3.3, 8.1.6.1.3.3,

9.1.5.1.2, 9.1.5.1.8.

#### 11.3.1.2 NR carrier aggregation

The restriction on NR CA test case execution as listed in this clause is due to the restriction of bandwidth of an NR CA configuration accommodating the necessary number of NR radio frequencies.

These test cases with switched allocation of PCell and SCell shall avoid to be executed on an NR CA inter-band combination with a frequency for the SCell having no UL:

CA\_n28A\_n75A,

CA\_n29A\_n66A,

CA\_n29A\_n70A,

CA\_n29A\_n71A,

CA\_n75A\_n78A,

CA\_n76A\_n78A,

CA\_n8A\_n75A

The list of test cases is given below:

8.1.4.1.7.2, 8.1.4.1.9.2.

These test cases with switched allocation of PCell and SCell shall avoid to be executed on an NR CA intra-band contiguous combination with a frequency for the SCell having no UL:

CA\_n66B

The list of test cases is given below:

8.1.4.1.7.1, 8.1.4.1.9.1

### 11.3.2 NR/5GC Inter-RAT

#### 11.3.2.1 NR/E-UTRA Inter-RAT

This clause contains the guidelines for the NR/5GC and E-UTRA inter-RAT test cases executed on the different bands. According to TS 38.508-1 [5] clause 6.2.3.3, it is assumed that the NR and E-UTRA bands under test are not overlapping.

A test case using more than one radio frequency on E-UTRA, i.e. using the radio frequencies f2, f3 or f4 specified in TS 36.508 [10], shall not be executed on:

Band 13,

Band 18,

Band 31,

Band 72,

Band 73

The list of test cases is given below:

6.4.3.1,

8.1.1.3.4,

11.1.4, 11.1.5.

A test case using more than one radio frequency on NR, i.e. using the radio frequencies NRf2 or NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band n51.

The list of test cases is given below:

6.2.1.1, 6.2.1.2, 6.2.1.3, 6.2.1.4,

8.1.1.3.7a.

A test case using more than two radio frequencies on NR, i.e. using the radio frequencies NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band n14,

Band n24,

Band n30,

Band n53

The list of test cases is given below:

6.2.1.1.

#### 11.3.2.2 NR/EN-DC Inter-RAT

This clause contains the guidelines for the NR/5GC and EN-DC inter-RAT test cases.

A test case using more than one radio frequency on NR, i.e. using the radio frequencies NRf2 or NRf3 or NRf4 specified in TS 38.508-1 [5], shall not be executed on:

Band combination DC\_1A\_n51A

Band combination DC\_20A\_n51A

Band combination DC\_28A\_n51A

Band combination DC\_3A\_n51A

Band combination DC\_41A\_n41A

Band combination DC\_42A\_n51A

Band combination DC\_7A\_n51A

The list of test cases is given below:

8.1.4.2.1.2

### 11.3.3 NR MFBI

The following NR MFBI test case shall be executed using the combinations specified in Table 11.3.3-1 for px\_NR\_OverlappingNotSupportedBand\_MFBI and px\_NR\_PrimaryBand:

6.1.2.23.

Table 11.3.3-1: NR MFBI bands combinations

|  |  |
| --- | --- |
| px\_NR\_OverlappingNotSupportedBand\_MFBI | px\_NR\_PrimaryBand (Note) |
| n2 | n25 |
| n25 | n2 |
| n38 | n41 |
| n41 | n38 |
| n77 | n78 |
| n78 | n77 |
| n257 | n258, n261 |
| n258 | n257 |
| n261 | n257 |
| Note: The UE supports one or more of the listed MFBI bands and does not support at least one overlapping band. If the UE supports all overlapping bands, these test cases are not applicable. | |

Annex A (normative):  
Test Suites

This annex references the approved Test Suites, which accompany the present document. The Test Suites have been produced using the Testing and Test Control Notation version 3 (TTCN-3) according to ES 201 873 [4].

# A.1 Baseline of specifications

Table A.1-1 lists the core specifications and test specifications, which the delivered Test Suites are based upon.

Table A.1-1: References of the test and core specifications

|  |  |  |  |
| --- | --- | --- | --- |
| Type | Specification | Release | Version |
| Core specifications | TS 38.321 [13] | Note 1 | Note 2 |
|  | TS 38.322 [14] | Note 1 | Note 2 |
|  | TS 38.323 [15] | Note 1 | Note 2 |
|  | TS 36.331 [17] | Note 1 | Note 2 |
|  | TS 38.331 [16] | Note 1 | Note 2 |
|  | TS 24.301 [18] | Note 1 | Note 2 |
| Test specifications | TS 36.508 [10] | Note 2 | Note 2 |
|  | TS 36.509 [11] | Note 1 | Note 2 |
|  | TS 38.508-1 [5] | Note 2 | Note 2 |
|  | TS 38.508-2 [6] | Note 2 | Note 2 |
|  | TS 38.509 [7] | Note 1 | Note 2 |
|  | TS 38.523-1 [8] | Note 2 | Note 2 |
|  | TS 38.523-2 [9] | Note 2 | Note 2 |
| NOTE 1: Latest release available, up to the release number of the present document.  NOTE 2: Latest available. | | | |

# A.2 5GS Test Suites

## A.2.1 EN-DC Test Suites

Table A.2.1-1 lists all approved test cases.

For a given test case, the following variants are distinguished (if applicable):

- FR1: FR1 NR frequency band(s) in the NR cell(s).

- FR2: FR2 NR frequency band(s) in the NR cell(s).

- FRx: Mix of FR1 NR frequency band(s) and FR2 NR frequency band(s) in the NR cell(s).

An "X" in columns FR1, FR2 or FRx indicates the test case is approved for the respective variant.

An "-" in columns FR1, FR2 or FRx indicates the test case is not applicable to the respective variant.

Table A.2.1-1: EN-DC TTCN test cases

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test case** | | **Description** | | **FR1** | | **FR2** | | **FRx** | |
| 7.1.1.1.1.ENDC | | Correct selection of RACH parameters / Random access preamble and PRACH resource explicitly signalled to the UE by RRC / contention free random access procedure | | X | | X | | - | |
| 7.1.1.1.1a.ENDC | | Correct selection of RACH parameters / Random access preamble and PRACH resource explicitly signalled to the UE by PDCCH Order / contention free random access procedure | | X | | X | | - | |
| 7.1.1.1.2.ENDC | | Random access procedure / Successful/ C-RNTI Based/Preamble selected by MAC itself | | X | | X | | - | |
| 7.1.1.2.1.ENDC | | Correct Handling of DL MAC PDU / Assignment / HARQ process | | X | | X | | - | |
| 7.1.1.3.1.ENDC | | Correct Handling of UL MAC PDU / Assignment / HARQ process | | X | | X | | - | |
| 7.1.1.3.2.ENDC | | Logical channel prioritization handling | | X | | X | | - | |
| 7.1.1.3.2b.ENDC | | Logical channel prioritization handling with Mapping restrictions | | X | | X | | - | |
| 7.1.1.3.3.ENDC | | Correct handling of MAC control information / Scheduling requests | | X | | X | | - | |
| 7.1.1.3.4.ENDC | | Correct handling of MAC control information / Buffer status / UL data arrive in the UE Tx buffer / Regular BSR | | X | | X | | - | |
| 7.1.1.3.5.ENDC | | Correct handling of MAC control information / Buffer Status / UL resources are allocated / Padding BSR | | X | | X | | - | |
| 7.1.1.3.6.ENDC | | Correct handling of MAC control information / Buffer status / Periodic BSR timer expires | | X | | X | | - | |
| 7.1.1.3.7.ENDC | | UE power headroom reporting / Periodic reporting / DL pathloss change reporting | | X | | X | | - | |
| 7.1.1.3.9.ENDC | | Correct Handling of UL HARQ process/ PUSCH Aggregation | | X | |  | | - | |
| 7.1.1.3.8.1.ENDC | | UE power headroom reporting / SCell activation / DL pathloss change reporting / Intra-band Contiguous CA | | X | |  | | - | |
| 7.1.1.4.1.1.ENDC | | DL-SCH Transport Block Size selection / DCI format 1\_0 | | X | |  | | - | |
| 7.1.1.4.2.1.ENDC | | UL-SCH transport block size selection / DCI format 0\_0 / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.3.ENDC | | UL-SCH transport block size selection / DCI format 0\_1 / RA type 0/RA Type 1 / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.4.ENDC | | UL-SCH transport block size selection / DCI format 0\_1 / RA type 0/RA Type 1 / 256QAM / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.5.ENDC | | UL-SCH Transport Block Size selection / DCI format 0\_0 / Transform precoding and 64QAM | | X | |  | | - | |
| 7.1.1.5.1.ENDC | | DRX operation / Short cycle not configured / Parameters configured by RRC | | X | | X | | - | |
| 7.1.1.5.2.ENDC | | DRX operation / Short cycle not configured /Long DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.5.3.ENDC | | DRX operation / Short cycle configured / Parameters configured by RRC | | X | | X | | - | |
| 7.1.1.5.4.ENDC | | DRX Operation / Short cycle configured / DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.5.5.ENDC | | DRX Operation / Short cycle configured / Long DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.7.1.1.ENDC | | Activation/Deactivation of SCells / Activation/Deactivation MAC control element reception / sCellDeactivationTimer / Intra-band Contiguous CA | | X | | X | | - | |
| 7.1.1.7.1.2.ENDC | | Activation/Deactivation of SCells / Activation/Deactivation MAC control element reception / sCellDeactivationTimer / Inter-band CA | | X | |  | |  | |
| 7.1.1.9.1.ENDC | | MAC Reset | | X | | X | | - | |
| 7.1.2.2.1.ENDC | | UM RLC / Segmentation and reassembly / 6-bit SN / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.2.2.ENDC | | UM RLC / Segmentation and reassembly / 12-bit SN / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.2.3.ENDC | | UM RLC / 6-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.2.4.ENDC | | UM RLC / 12-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.2.5.ENDC | | UM RLC / Receive Window operation and t-Reassembly expiry | | X | | X | | - | |
| 7.1.2.2.6.ENDC | | UM RLC / RLC re-establishment procedure | | X | | X | | - | |
| 7.1.2.3.1.ENDC | | AM RLC / 12-bit SN/Segmentation and reassembly / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.3.2.ENDC | | AM RLC / 18-bit SN/Segmentation and reassembly / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.3.3.ENDC | | AM RLC / 12-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.3.4.ENDC | | AM RLC / 18-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.3.5.ENDC | | AM RLC / Control of transmit window / Control of receive window | | X | | X | | - | |
| 7.1.2.3.6.ENDC | | AM RLC / Polling for status | | X | | X | | - | |
| 7.1.2.3.7.ENDC | | AM RLC / Receiver status triggers | | X | | X | | - | |
| 7.1.2.3.8.ENDC | | AM RLC / Reconfiguration of RLC parameters by upper layers | | X | | X | | - | |
| 7.1.2.3.9.ENDC | | AM RLC / Reassembling of AMD PDUs | | X | | X | | - | |
| 7.1.2.3.10.ENDC | | AM RLC / Re-transmission of RLC PDU with and without re-segmentation | | X | | X | | - | |
| 7.1.2.3.11.ENDC | | AM RLC / RLC re-establishment procedure | | X | | X | | - | |
| 7.1.3.1.1.ENDC | | Maintenance of PDCP sequence numbers / User plane / 12-bit SN | | X | | X | | - | |
| 7.1.3.1.2.ENDC | | Maintenance of PDCP sequence numbers / User plane / 18-bit SN | | X | | X | | - | |
| 7.1.3.2.1.ENDC | | Integrity protection / Correct functionality of encryption algorithm SNOW3G / SRB / DRB | | X | | X | | - | |
| 7.1.3.2.2.ENDC | | Integrity protection / Correct functionality of encryption algorithm AES / SRB / DRB | | X | | X | | - | |
| 7.1.3.2.3.ENDC | | Integrity protection / Correct functionality of encryption algorithm ZUC / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.1.ENDC | | Ciphering and deciphering / Correct functionality of encryption algorithm SNOW3G / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.2.ENDC | | Ciphering and deciphering / Correct functionality of encryption algorithm AES / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.3.ENDC | | Ciphering and deciphering / Correct functionality of encryption algorithm ZUC / SRB / DRB | | X | | X | | - | |
| 7.1.3.4.1.ENDC | | PDCP handover / Lossless handover / PDCP sequence number maintenance/PDCP status report to convey the information on missing or acknowledged PDCP SDUs at handover/ In-order delivery and duplicate elimination in the downlink | | X | | X | | - | |
| 7.1.3.4.2.ENDC | | PDCP handover / Non-lossless handover / PDCP sequence number maintenance | | X | | X | | - | |
| 7.1.3.5.1.ENDC | | PDCP Discard | | X | | X | | - | |
| 7.1.3.5.2.ENDC | | PDCP Uplink Routing / Split DRB | | X | | X | | - | |
| 7.1.3.5.3.ENDC | | PDCP Data Recovery | | X | | X | | - | |
| 7.1.3.5.4.ENDC | | PDCP reordering / Maximum re-ordering delay below t-Reordering / t-Reordering timer operations | | X | | X | | - | |
| 7.1.3.5.5.ENDC | | PDCP Duplication | | X | |  | | - | |
| 8.2.1.1.1.ENDC | | UE capability transfer / Success / EN-DC | | X | | X | | - | |
| 8.2.2.1.1.ENDC | | SRB3 Establishment, Reconfiguration and Release / NR addition, modification and release / EN-DC | | X | | X | | - | |
| 8.2.2.2.1.ENDC | | Split SRB Establishment and Release / EN-DC | | X | | X | | - | |
| 8.2.2.3.1.ENDC | | Simultaneous SRB3 and Split SRB / Sequential message flow on SRB3 and Split SRB with one UL path / EN-DC | | X | | X | | - | |
| 8.2.2.4.1.ENDC | | PSCell addition, modification and release / SCG DRB / EN-DC | | X | | X | | - | |
| 8.2.2.5.1.ENDC | | PSCell addition, modification and release / Split DRB / EN-DC | | X | | X | | - | |
| 8.2.2.6.1.ENDC | | Bearer Modification / MCG DRB / SRB / PDCP version change / EN-DC | | X | | X | | - | |
| 8.2.2.7.1.ENDC | | Bearer Modification / Handling for bearer type change without security key change / EN-DC | | X | | X | | - | |
| 8.2.2.8.1.ENDC | | Bearer Modification / Handling for bearer type change with security key change / EN-DC | | X | | X | | - | |
| 8.2.2.9.1.ENDC | | Bearer Modification / Uplink data path / Split DRB Reconfiguration / EN-DC | | X | | X | | - | |
| 8.2.3.1.1.ENDC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B1 / Measurement of NR cells / EN-DC | | X | | X | | - | |
| 8.2.3.2.1.ENDC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B1 / Measurement of NR cells / RSRQ based measurements / EN-DC | | X | |  | | - | |
| 8.2.3.3.1.ENDC | | Measurement configuration control and reporting / Inter-RAT measurements / Periodic reporting / Measurement of NR cells / EN-DC | | X | | X | | - | |
| 8.2.3.4.1.ENDC | | Measurement configuration control and reporting / Event A1 / Measurement of NR PSCell / EN-DC | | X | | X | | - | |
| 8.2.3.5.1.ENDC | | Measurement configuration control and reporting / Event A2 / Measurement of NR PSCell / EN-DC | | X | | X | | - | |
| 8.2.3.6.1.ENDC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbour NR cell / Intra-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.6.1a.ENDC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbour NR cell / Inter-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.6.1b.ENDC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbour NR cell / Inter-band measurements / EN-DC | |  | | X | | - | |
| 8.2.3.7.1.ENDC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbour NR cell / Intra-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.7.1a.ENDC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbour NR cell / Inter-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.7.1b.ENDC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbour NR cell / Inter-band measurements / EN-DC | | X | | X | | - | |
| 8.2.3.8.1.ENDC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbour NR cell / Intra-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.8.1a.ENDC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbour NR cell / Inter-frequency measurements / EN-DC | | X | | X | | - | |
| 8.2.3.8.1b.ENDC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbour NR cell / Inter-band measurements / EN-DC | | X | | X | | - | |
| 8.2.3.12.1.ENDC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B2 / Measurement of NR cells / EN-DC | | X | |  | | - | |
| 8.2.3.13.1.ENDC | | PCell Handover with SCG change / Reconfiguration with sync / SCG DRB / EN-DC | | X | |  | | - | |
| 8.2.3.14.1.ENDC | | SCG change / Reconfiguration with sync / Split DRB / EN-DC | | X | | X | | - | |
| 8.2.3.15.1.ENDC | | Measurement configuration control and reporting / Two simultaneous events A2 and A3 (intra-frequency measurements) / Measurement of Neighbour NR cells / EN-DC | | X | |  | | - | |
| 8.2.3.16.1.ENDC | | Measurement configuration control and reporting / SRB3 / Intra NR measurements / EN-DC | | X | | X | | - | |
| 8.2.4.1.1.1.ENDC | | NR CA / NR SCell addition / modification / release / Success / EN-DC / Intra-band Contiguous CA | | X | | X | | - | |
| 8.2.4.1.1.3.ENDC | | NR CA / NR SCell addition / modification / release / Success / EN-DC / Inter-band CA | | X | |  | | - | |
| 8.2.4.2.1.1.ENDC | | NR CA / Simultaneous PSCell and SCell addition / PSCell and SCell change / CA Release / EN-DC / Intra-band Contiguous CA | | X | |  | |  | |
| 8.2.4.2.1.3.ENDC | | NR CA / Simultaneous PSCell and SCell addition / PSCell and SCell change / CA Release / EN-DC / Inter-band CA | | X | |  | |  | |
| 8.2.4.3.1.1.ENDC | | NR CA / SCell change / Intra-NR measurement event A6 / SRB3 / EN-DC / Intra-band Contiguous CA | | X | |  | | - | |
| 8.2.4.3.1.3.ENDC | | NR CA / SCell change / Intra-NR measurement event A6 / SRB3 / EN-DC / Inter-band CA | | X | |  | |  | |
| 8.2.5.1.1.ENDC | | Radio link failure / PSCell addition failure - random access problem / EN-DC | | X | | X | |  | |
| 8.2.5.2.1.ENDC | | Radio link failure / PSCell out of sync indication / Radio link failure / EN-DC | | X | | X | | - | |
| 8.2.5.3.1.ENDC | | Radio link failure / rlc-MaxNumRetx failure / EN-DC | | X | | X | |  | |
| 8.2.5.4.1.ENDC | | Reconfiguration failure / SCG change failure / EN-DC | | X | | X | | - | |
| 8.2.6.2.1.ENDC | | Processing delay / PSCell addition / SCG DRB / Success / Latency check / EN-DC | | X | | X | | - | |
| 10.2.1.1.ENDC | | Default EPS bearer context activation | | X | | X | | - | |
| 10.2.1.2.ENDC | | Dedicated EPS bearer context activation | | X | | X | | - | |
| 10.2.2.1.ENDC | | EPS bearer resource allocation / modification | | X | | X | | - | |

## A.2.2 NR/5GC Test Suites

Table A.2.2-1 lists all approved test cases.

For a given test case, the following variants are distinguished (if applicable):

- FR1: FR1 NR frequency band(s) in the NR cell(s).

- FR2: FR2 NR frequency band(s) in the NR cell(s).

- FRx: Mix of FR1 NR frequency band(s) and FR2 NR frequency band(s) in the NR cell(s).

An "X" in columns FR1 or FR2 indicates the test case is approved for the respective variant.

An "-" in columns FR1, FR2 or FRx indicates the test case is not applicable to the respective variant.

Table A.2.2-1: NR/5GC TTCN test cases

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test case** | | **Description** | | **FR1** | | **FR2** | | **FRx** | |
| 6.1.1.1.NR5GC | | PLMN selection of RPLMN, HPLMN/EHPLMN, UPLMN and OPLMN / Automatic mode | | X | |  | | - | |
| 6.1.1.2.NR5GC | | PLMN selection of "Other PLMN/access technology combinations" / Automatic mode | | X | |  | | - | |
| 6.1.1.3.NR5GC | | Cell reselection of ePLMN in manual mode | | X | |  | | - | |
| 6.1.1.4.NR5GC | | PLMN selection in shared network environment / Automatic mode | | X | | X | | - | |
| 6.1.1.5.NR5GC | | PLMN selection of RPLMN, HPLMN/EHPLMN, UPLMN and OPLMN / Automatic mode / User reselection | | X | |  | | - | |
| 6.1.1.6.NR5GC | | PLMN selection / Periodic reselection / MinimumPeriodicSearchTimer | | X | |  | | - | |
| 6.1.1.7.NR5GC | | PLMN selection of RPLMN or (E)HPLMN; Automatic mode | | X | |  | | - | |
| 6.1.1.8.NR5GC | | PLMN selection of RPLMN or (E)HPLMN; Manual mode | | X | |  | | - | |
| 6.1.2.1.NR5GC | | Cell Selection/Qrxlevmin & Cell Reselection (Intra NR) | | X | | X | | - | |
| 6.1.2.2.NR5GC | | Cell Selection/Qqualmin/Intra NR / Serving cell becomes non-suitable (Srxlev > 0, Squal < 0) | |  | |  | | - | |
| 6.1.2.3.NR5GC | | Cell selection / Intra NR/ Serving cell becomes non-suitable (S<0 , MIB Indicated barred) | | X | |  | | - | |
| 6.1.2.4.NR5GC | | Cell reselection for interband operation | | X | |  | | - | |
| 6.1.2.5.NR5GC | | Cell reselection for interband operation using Pcompensation / Between FDD and TDD | | X | |  | | - | |
| 6.1.2.7.NR5GC | | Cell reselection / Equivalent PLMN | | X | |  | | - | |
| 6.1.2.8.NR5GC | | Cell reselection / Equivalent PLMN / Single Frequency operation | | X | |  | | - | |
| 6.1.2.9.NR5GC | | Cell reselection using Qhyst, Qoffset and Treselection | | X | | X | | - | |
| 6.1.2.11.NR5GC | | Area Specific SIBs using systemInformationAreaID | | X | |  | | - | |
| 6.1.2.12.NR5GC | | Cell reselection using cell status and cell reservations / cellReservedForOtherUse | | X | |  | | - | |
| 6.1.2.13.NR5GC | | Cell reselection using cell status and cell reservations / Access Identity 1 , 2 and 12 to 14 - cellReservedForOperatorUse | | X | |  | | - | |
| 6.1.2.14.NR5GC | | Cell reselection using cell status and cell reservations / Access Identity 11 or 15 - cellReservedForOperatorUse | | X | |  | | - | |
| 6.1.2.15.NR5GC | | Cell reselection in shared network environment | | X | | X | | - | |
| 6.1.2.16.NR5GC | | Inter-frequency cell reselection (equal priority) | | X | |  | | - | |
| 6.1.2.17.NR5GC | | Cell reselection / Cell-specific reselection parameters provided by the network in a neighbouring cell list | | X | | X | | - | |
| 6.1.2.18.NR5GC | | Cell reselection, Sintrasearch, Snonintrasearch | | X | |  | | - | |
| 6.1.2.19.NR5GC | | Speed Dependent Cell Reselection | | X | |  | | - | |
| 6.1.2.20.NR5GC | | Inter-frequency cell reselection according to cell reselection priority provided by SIBs | | X | |  | | - | |
| 6.1.2.21.NR5GC | | Cell reselection , SIntraSearchQ and SnonIntraSearchQ | | X | |  | | - | |
| 6.1.2.22.NR5GC | | Inter-frequency cell reselection based on common priority information with parameters ThreshX, HighQ, ThreshX, LowQ and ThreshServing, LowQ | | X | |  | | - | |
| 6.1.2.23.NR5GC | | Cell Reselection / MFBI | | X | |  | | - | |
| 6.2.1.1.NR5GC | | Inter-RAT PLMN Selection / Selection of correct RAT for OPLMN / Automatic mode | | X | |  | | - | |
| 6.2.1.2.NR5GC | | Inter-RAT PLMN Selection / Selection of correct RAT for UPLMN / Automatic mode | | X | |  | | - | |
| 6.2.1.3.NR5GC | | Inter-RAT PLMN Selection / Selection of correct PLMN and RAT in shared network environment / Automatic mode | | X | |  | | - | |
| 6.2.1.4.NR5GC | | Inter-RAT PLMN Selection / Selection of correct RAT from the OPLMN list / Manual mode | | X | |  | | - | |
| 6.2.1.5.NR5GC | | Inter-RAT Background HPLMN Search / Search for correct RAT for HPLMN / Automatic Mode | | X | |  | | - | |
| 6.2.2.1.NR5GC | | Inter-RAT cell selection / From NR RRC\_IDLE to EUTRA\_Idle / Serving cell becomes non-suitable | | X | |  | | - | |
| 6.2.2.2.NR5GC | | Inter-RAT cell selection / From E-UTRA\_Idle to NR RRC\_IDLE / Serving cell becomes non-suitable | | X | |  | | - | |
| 6.2.3.1.NR5GC | | Inter-RAT cell reselection / From E-UTRA\_Idle to NR RRC\_IDLE (lower priority & higher priority , Srxlev based) | | X | |  | | - | |
| 6.2.3.2.NR5GC | | Inter-RAT cell reselection / From E-UTRA\_Idle to NR RRC\_IDLE (lower priority & higher priority , Squal based) | | X | |  | | - | |
| 6.2.3.3.NR5GC | | Inter-RAT cell reselection / From NR RRC\_Idle to E-UTRA\_IDLE (lower priority & higher priority , Srxlev based) | | X | |  | | - | |
| 6.2.3.4.NR5GC | | Inter-RAT cell reselection / From NR RRC\_Idle to E-UTRA\_IDLE (lower priority & higher priority , Squal based) | | X | |  | | - | |
| 6.2.3.5.NR5GC | | Inter-RAT cell reselection / From NR RRC\_IDLE to E-UTRA\_Idle according to RAT priority provided by dedicated signalling (RRCRelease) | | X | |  | | - | |
| 6.2.3.6.NR5GC | | Inter-RAT cell reselection / From E-UTRA\_Idle to NR RRC\_IDLE according to RAT priority provided by dedicated signalling (RRConnRelease) | | X | |  | | - | |
| 6.2.3.7.NR5GC | | Inter-RAT cell reselection / From NR RRC\_IDLE to E-UTRA RRC\_Idle, Snonintrasearch | | X | |  | | - | |
| 6.2.3.8.NR5GC | | Inter-RAT cell reselection / From E-UTRA RRC\_IDLE to NR RRC\_Idle, Snonintrasearch | | X | |  | | - | |
| 6.2.3.9.NR5GC | | Speed Dependent Cell Reselection (NR RRC\_IDLE to E-UTRA RRC\_IDLE) | | X | |  | | - | |
| 6.2.3.10.NR5GC | | Inter-RAT cell reselection / From E-UTRA\_Idle to NR RRC\_IDLE / schedulingInfoList-v12j0 | | X | |  | | - | |
| 6.2.3.11.NR5GC | | Inter-RAT cell reselection / From E-UTRA\_Idle to NR RRC\_IDLE / schedulingInfoListExt-r12 | | X | |  | | - | |
| 6.3.1.1.NR5GC | | Steering of UE in roaming during registration/security check successful using List Type 1 | | X | |  | | - | |
| 6.3.1.2.NR5GC | | Steering of UE in roaming during registration/security check successful but SOR Transparent container indicates ACK has been NOT been requested | | X | |  | | - | |
| 6.3.1.3.NR5GC | | Steering of UE in roaming during registration/security check unsuccessful/Automatic mode | | X | |  | | - | |
| 6.3.1.4.NR5GC | | Steering of UE in roaming during registration/security check unsuccessful/Manual mode | | X | | X | | - | |
| 6.3.1.5.NR5GC | | Steering of UE in roaming during registration/UE configured to receive Steering of Roaming information but does not receive Steering of Roaming from Network | | X | |  | | - | |
| 6.3.1.7.NR5GC | | Steering of UE in roaming during registration/security check unsuccessful but emergency service pending to be activated | | X | | X | | - | |
| 6.3.1.8.NR5GC | | Steering of UE in roaming after registration/automatic plmn selection mode | | X | |  | | - | |
| 6.3.1.9.NR5GC | | Steering of UE in roaming after registration/manual plmn selection mode | | X | | X | | - | |
| 6.3.1.10.NR5GC | | Steering of UE in roaming during mobility update registration | | X | |  | |  | |
| 6.4.1.1.NR5GC | | PLMN Selection/Higher priority/HPLMN in Automatic PLMN Selection Mode | | X | |  | | - | |
| 6.4.1.2.NR5GC | | Cell reselection of ePLMN in manual mode | | X | |  | | - | |
| 6.4.2.1.NR5GC | | Cell Selection/Qrxlevmin & Cell Reselection (Intra NR in RRC\_INACTIVE state) | | X | |  | | - | |
| 6.4.2.2.NR5GC | | Inter-frequency cell reselection according to cell reselection priority provided by SIBs in RRC\_INACTIVE state | | X | |  | | - | |
| 6.4.3.1.NR5GC | | Inter-RAT cell reselection / From NR RRC\_INACTIVE to E-UTRA RRC\_IDLE (lower priority & higher priority , Srxlev based) | | X | |  | | - | |
| 6.5.2.1.NR5GC | | CAG Selection in Manual Mode | | X | |  | | - | |
| 6.5.2.2.NR5GC | | CAG Selection in Automatic Mode | | X | |  | | - | |
| 6.5.2.3.NR5GC | | CAG / Limited Service / No Suitable cell | | X | |  | | - | |
| 6.5.2.4.NR5GC | | CAG / cell reselection / Within allowed CAG/ non-CAG cell to CAG cell | | X | |  | | - | |
| 7.1.1.1.1.NR5GC | | Correct selection of RACH parameters / Random access preamble and PRACH resource explicitly signalled to the UE by RRC / contention free random access procedure | | X | | X | | - | |
| 7.1.1.1.1a.NR5GC | | Correct selection of RACH parameters / Random access preamble and PRACH resource explicitly signalled to the UE by PDCCH Order / contention free random access procedure | | X | | X | | - | |
| 7.1.1.1.2.NR5GC | | Random access procedure / Successful/ C-RNTI Based/Preamble selected by MAC itself | | X | | X | | - | |
| 7.1.1.1.3.NR5GC | | Random access procedure / Successful/SI request | | X | | X | | - | |
| 7.1.1.1.6.NR5GC | | Random access procedure / Successful/ Temporary C-RNTI Based/Preamble selected by MAC itself | | X | | X | | - | |
| 7.1.1.2.1.NR5GC | | Correct Handling of DL MAC PDU / Assignment / HARQ process | | X | | X | | - | |
| 7.1.1.2.3.NR5GC | | Correct HARQ process handling / CCCH | | X | | X | | - | |
| 7.1.1.2.4.NR5GC | | Correct HARQ process handling / BCCH | | X | | X | | - | |
| 7.1.1.3.1.NR5GC | | Correct Handling of UL MAC PDU / Assignment / HARQ process | | X | | X | | - | |
| 7.1.1.3.2.NR5GC | | Logical channel prioritization handling | | X | | X | | - | |
| 7.1.1.3.2b.NR5GC | | Logical channel prioritization handling with Mapping restrictions | | X | | X | | - | |
| 7.1.1.3.3.NR5GC | | Correct handling of MAC control information / Scheduling requests | | X | | X | | - | |
| 7.1.1.3.4.NR5GC | | Correct handling of MAC control information / Buffer status / UL data arrive in the UE Tx buffer / Regular BSR | | X | | X | | - | |
| 7.1.1.3.5.NR5GC | | Correct handling of MAC control information / Buffer Status / UL resources are allocated / Padding BSR | | X | | X | | - | |
| 7.1.1.3.6.NR5GC | | Correct handling of MAC control information / Buffer status / Periodic BSR timer expires | | X | | X | | - | |
| 7.1.1.3.7.NR5GC | | UE power headroom reporting / Periodic reporting / DL pathloss change reporting | | X | | X | | - | |
| 7.1.1.3.8.1.NR5GC | | UE power headroom reporting / SCell activation / DL pathloss change reporting / Intra-band Contiguous CA | | X | |  | | - | |
| 7.1.1.3.8.2.NR5GC | | UE power headroom reporting / SCell activation / DL pathloss change reporting/ Inter-band CA | | X | |  | |  | |
| 7.1.1.3.9.NR5GC | | Correct Handling of UL HARQ process/ PUSCH Aggregation | | X | |  | | - | |
| 7.1.1.4.1.1.NR5GC | | DL-SCH Transport Block Size selection / DCI format 1\_0 | | X | |  | | - | |
| 7.1.1.4.2.1.NR5GC | | UL-SCH transport block size selection / DCI format 0\_0 / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.3.NR5GC | | UL-SCH transport block size selection / DCI format 1\_1 / RA type 0 / RA Type 1 / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.4.NR5GC | | UL-SCH transport block size selection / DCI format 0\_1 / RA type 0/RA Type 1 / 256QAM / Transform precoding disabled | | X | |  | | - | |
| 7.1.1.4.2.5.NR5GC | | UL-SCH Transport Block Size selection / DCI format 0\_0 / Transform precoding and 64QAM | | X | |  | | - | |
| 7.1.1.5.1.NR5GC | | DRX operation / Short cycle not configured / Parameters configured by RRC | | X | | X | | - | |
| 7.1.1.5.2.NR5GC | | DRX operation / Short cycle not configured /Long DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.5.3.NR5GC | | DRX operation / Short cycle configured / Parameters configured by RRC | | X | | X | | - | |
| 7.1.1.5.4.NR5GC | | DRX Operation / Short cycle configured / DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.5.5.NR5GC | | DRX Operation / Short cycle configured / Long DRX command MAC control element reception | | X | | X | | - | |
| 7.1.1.7.1.1.NR5GC | | Activation/Deactivation of SCells / Activation/Deactivation MAC control element reception / sCellDeactivationTimer / Intra-band Contiguous CA | | X | | X | | - | |
| 7.1.1.7.1.2.NR5GC | | Activation/Deactivation of SCells / Activation/Deactivation MAC control element reception / sCellDeactivationTimer / Inter-band CA | | X | |  | |  | |
| 7.1.1.7.1.3.NR5GC | | Activation/Deactivation of SCells / Activation/Deactivation MAC control element reception / sCellDeactivationTimer / Intra-band non-Contiguous CA | | X | |  | | - | |
| 7.1.1.9.1.NR5GC | | MAC Reset | | X | | X | | - | |
| 7.1.1.10.1.NR5GC | | DataInactivityTimer expiry | | X | | X | | - | |
| 7.1.2.2.1.NR5GC | | UM RLC / Segmentation and reassembly / 6-bit SN / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.2.2.NR5GC | | UM RLC / Segmentation and reassembly / 12-bit SN / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.2.3.NR5GC | | UM RLC / 6-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.2.4.NR5GC | | UM RLC / 12-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.2.5.NR5GC | | UM RLC / Receive Window operation and t-Reassembly expiry | | X | | X | | - | |
| 7.1.2.2.6.NR5GC | | UM RLC / RLC re-establishment procedure | | X | | X | | - | |
| 7.1.2.3.1.NR5GC | | AM RLC / 12-bit SN/Segmentation and reassembly / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.3.2.NR5GC | | AM RLC / 18-bit SN/Segmentation and reassembly / Segmentation Info (SI) field | | X | | X | | - | |
| 7.1.2.3.3.NR5GC | | AM RLC / 12-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.3.4.NR5GC | | AM RLC / 18-bit SN / Correct use of sequence numbering | | X | | X | | - | |
| 7.1.2.3.5.NR5GC | | AM RLC / Control of transmit window / Control of receive window | | X | | X | | - | |
| 7.1.2.3.6.NR5GC | | AM RLC / Polling for status | | X | | X | | - | |
| 7.1.2.3.7.NR5GC | | AM RLC / Receiver status triggers | | X | | X | | - | |
| 7.1.2.3.8.NR5GC | | AM RLC / Reconfiguration of RLC parameters by upper layers | | X | | X | | - | |
| 7.1.2.3.9.NR5GC | | AM RLC / Reassembling of AMD PDUs | | X | | X | | - | |
| 7.1.2.3.10.NR5GC | | AM RLC / Re-transmission of RLC PDU with and without re-segmentation | | X | | X | | - | |
| 7.1.2.3.11.NR5GC | | AM RLC / RLC re-establishment procedure | | X | | X | | - | |
| 7.1.3.1.1.NR5GC | | Maintenance of PDCP sequence numbers / User plane / 12-bit SN | | X | | X | | - | |
| 7.1.3.1.2.NR5GC | | Maintenance of PDCP sequence numbers / User plane / 18-bit SN | | X | | X | | - | |
| 7.1.3.2.1.NR5GC | | Integrity protection / Correct functionality of encryption algorithm SNOW3G / SRB / DRB | | X | | X | | - | |
| 7.1.3.2.2.NR5GC | | Integrity protection / Correct functionality of encryption algorithm AES / SRB / DRB | | X | | X | | - | |
| 7.1.3.2.3.NR5GC | | Integrity protection / Correct functionality of encryption algorithm ZUC / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.1.NR5GC | | Ciphering and deciphering / Correct functionality of encryption algorithm SNOW3G / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.2.NR5GC | | Ciphering and deciphering / Correct functionality of encryption algorithm AES / SRB / DRB | | X | | X | | - | |
| 7.1.3.3.3.NR5GC | | Ciphering and deciphering / Correct functionality of encryption algorithm ZUC / SRB / DRB | | X | | X | | - | |
| 7.1.3.4.1.NR5GC | | PDCP handover / Lossless handover / PDCP sequence number maintenance/PDCP status report to convey the information on missing or acknowledged PDCP SDUs at handover/ In-order delivery and duplicate elimination in the downlink | | X | | X | | - | |
| 7.1.3.4.2.NR5GC | | PDCP handover / Non-lossless handover / PDCP sequence number maintenance | | X | | X | | - | |
| 7.1.3.5.1.NR5GC | | PDCP Discard | | X | | X | | - | |
| 7.1.3.5.2.NR5GC | | PDCP Uplink Routing / Split DRB | | - | | - | | X | |
| 7.1.3.5.4.NR5GC | | PDCP reordering / Maximum re-ordering delay below t-Reordering / t-Reordering timer operations | | X | | X | | - | |
| 7.1.4.1.NR5GC | | SDAP Data Transfer and PDU Header Handling UL/DL | | X | | X | | - | |
| 7.1.4.2.NR5GC | | SDAP Data Transfer handling without Header UL/DL | | X | | X | | - | |
| 8.1.1.1.1.NR5GC | | RRC / Paging for connection / Multiple paging records | | X | | X | | - | |
| 8.1.1.1.2.NR5GC | | RRC / Paging for connection / Shared network environment | | X | | X | | - | |
| 8.1.1.2.1.NR5GC | | RRC connection establishment / Return to idle state after T300 expiry | | X | | X | | - | |
| 8.1.1.2.3.NR5GC | | RRC connection establishment / RRC Reject with wait time | | X | | X | | - | |
| 8.1.1.2.4.NR5GC | | RRC connection establishment / Extended and spare fields in SI | | X | | X | | - | |
| 8.1.1.3.1.NR5GC | | RRC connection release / Redirection to another NR frequency | | X | | X | | - | |
| 8.1.1.3.2.NR5GC | | RRC connection release / Redirection from NR to E-UTRAN | | X | | X | | - | |
| 8.1.1.3.3.NR5GC | | RRC connection release / Success / With priority information | | X | |  | | - | |
| 8.1.1.3.4.NR5GC | | RRC connection release / Success / With priority information / E-UTRA | | X | |  | | - | |
| 8.1.1.3.7.NR5GC | | RRC connection release / Success / Deprioritisation / Frequency / T325 expiry | | X | |  | | - | |
| 8.1.1.3.7a.NR5GC | | RRC connection release / Success / Deprioritisation / NR / T325 expiry | | X | |  | | - | |
| 8.1.1.3.7b.NR5GC | | RRC connection release / Success / Deprioritisation / Deletion of Stored deprioritisation request | | X | |  | | - | |
| 8.1.1.4.1.NR5GC | | RRC resume / Suspend-Resume / RNA update / Success | | X | | X | | - | |
| 8.1.1.4.2.NR5GC | | RRC resume / Suspend-Resume / RRC setup / T319 expiry | | X | | X | | - | |
| 8.1.2.1.1.NR5GC | | RRC reconfiguration / DRB / SRB / Establishment / Modification / Release / Success | | X | | X | | - | |
| 8.1.2.1.2.NR5GC | | RRC reconfiguration / RRC bearer establishment / uplinkTxDirectCurrentList | | X | | X | | - | |
| 8.1.2.1.4.NR5GC | | RRC reconfiguration / Dedicated RLF timer | | X | | X | | - | |
| 8.1.2.1.5.1.NR5GC | | NR CA / RRC reconfiguration / SCell addition / modification / release / Success / Intra-band Contiguous CA | | X | | X | | - | |
| 8.1.2.1.5.2.NR5GC | | NR CA / RRC reconfiguration / SCell addition / modification / release / Success / Inter-band CA | | X | |  | | - | |
| 8.1.2.1.5.3.NR5GC | | NR CA / RRC reconfiguration / SCell addition / modification / release / Success / Intra-band non-contiguous CA | | X | |  | | - | |
| 8.1.3.1.1.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Event A1 / Event A2 | | X | |  | | - | |
| 8.1.3.1.2.NR5GC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbor NR cell / Intra-frequency measurements | | X | |  | | - | |
| 8.1.3.1.3.NR5GC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbor NR cell / Inter-frequency measurements | | X | |  | | - | |
| 8.1.3.1.4.NR5GC | | Measurement configuration control and reporting / Event A3 / Measurement of Neighbor NR cell / Inter-band measurements | | X | |  | | - | |
| 8.1.3.1.5.NR5GC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbor NR cell / Intra-frequency measurements | | X | |  | | - | |
| 8.1.3.1.6.NR5GC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbor NR cell / Inter-frequency measurements | | X | |  | | - | |
| 8.1.3.1.7.NR5GC | | Measurement configuration control and reporting / Event A4 / Measurement of Neighbor NR cell / Inter-band measurements | | X | |  | | - | |
| 8.1.3.1.8.NR5GC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbor NR cell / Intra-frequency measurements | | X | |  | | - | |
| 8.1.3.1.9.NR5GC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbor NR cell / Inter-frequency measurements | | X | |  | | - | |
| 8.1.3.1.10.NR5GC | | Measurement configuration control and reporting / Event A5 / Measurement of Neighbor NR cell / Inter-band measurements | | X | |  | | - | |
| 8.1.3.1.11.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Two simultaneous events A3 (intra and inter-frequency measurements) / RSRQ based measurements | | X | |  | | - | |
| 8.1.3.1.12.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Two simultaneous events A5 (intra and inter-frequency measurements) / SINR based measurements | | X | |  | | - | |
| 8.1.3.1.15A.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Blacklisting | | X | |  | | - | |
| 8.1.3.1.16.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Whitelisting | | X | |  | | - | |
| 8.1.3.1.17.1.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Event A6 / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.3.1.17.2.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Event A6 / Inter-band CA | | X | |  | |  | |
| 8.1.3.1.17.3.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Event A6 / Intra-band non-Contiguous CA | | X | |  | | - | |
| 8.1.3.1.18.1.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Additional measurement reporting / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.3.1.18.2.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Additional measurement reporting / Inter-band CA | | X | |  | |  | |
| 8.1.3.1.18.3.NR5GC | | NR CA / Measurement configuration control and reporting / Intra NR measurements / Additional measurement reporting / Intra-band non-Contiguous CA | | X | |  | | - | |
| 8.1.3.1.20.NR5GC | | Measurement configuration control and reporting / Measurement Gaps / gapFR1 | | X | |  | | - | |
| 8.1.3.1.23.NR5GC | | Measurement configuration control and reporting / Intra NR measurements / Continuation of the measurements after RRC Resume | | X | |  | | - | |
| 8.1.3.2.1.NR5GC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B1 / Measurement of E-UTRA cells | | X | |  | | - | |
| 8.1.3.2.2.NR5GC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B2 / Measurement of E-UTRA cells | | X | |  | | - | |
| 8.1.3.2.3.NR5GC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B2 / Measurement of E-UTRA cells / RSRQ based measurements | | X | |  | | - | |
| 8.1.3.2.4.NR5GC | | Measurement configuration control and reporting / Inter-RAT measurements / Event B2 / Measurement of E-UTRA cells / SINR based measurements | | X | |  | | - | |
| 8.1.3.3.1.NR5GC | | Measurement configuration control and reporting / CGI reporting of NR cell | | X | |  | | - | |
| 8.1.3.3.2.NR5GC | | Measurement configuration control and reporting / CGI reporting of E-UTRA cell | | X | |  | | - | |
| 8.1.4.1.2.NR5GC | | Intra NR handover / Success / Inter-frequency | | X | |  | | - | |
| 8.1.4.1.5.NR5GC | | Intra NR handover / Failure / Re-establishment successful | | X | |  | | - | |
| 8.1.4.1.6.NR5GC | | Intra NR handover / Failure / Re-establishment failure | | X | |  | | - | |
| 8.1.4.1.7.1.NR5GC | | NR CA / Intra NR handover / Success / PCell Change and SCell addition / SCell release / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.4.1.7.2.NR5GC | | NR CA / Intra NR handover / Success / PCell Change and SCell addition / SCell release / Inter-band CA | | X | |  | |  | |
| 8.1.4.1.7.3.NR5GC | | NR CA / Intra NR handover / Success / PCell Change and SCell addition / SCell release/ Intra-band non-contiguous CA | | X | |  | | - | |
| 8.1.4.1.8.1.NR5GC | | NR CA / Intra NR handover / Success / PCell Change / SCell no Change / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.4.1.8.2.NR5GC | | NR CA / Intra NR handover / Success / PCell Change / SCell no Change / Inter-band CA | | X | |  | |  | |
| 8.1.4.1.8.3.NR5GC | | NR CA / Intra NR handover / Success / PCell Change / SCell no Change / Intra-band non-contiguous CA | | X | |  | | - | |
| 8.1.4.1.9.1.NR5GC | | NR CA / Intra NR handover / Failure / Re-establishment successful / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.4.1.9.2.NR5GC | | NR CA / Intra NR handover / Failure / Re-establishment successful / Inter-band CA | | X | |  | |  | |
| 8.1.4.1.9.3.NR5GC | | NR CA / Intra NR handover / Failure / Re-establishment successful / Intra-band non-contiguous CA | | X | |  | | - | |
| 8.1.4.2.1.1.NR5GC | | Inter-RAT handover / From NR to E-UTRA / Success | | X | | X | | - | |
| 8.1.4.2.1.2.NR5GC | | Inter-RAT handover / From NR to EN-DC / Success | | X | |  | | - | |
| 8.1.4.2.2.1.NR5GC | | Inter-RAT handover / From E-UTRA to NR / Success | | X | | X | | - | |
| 8.1.4.4.1.NR5GC | | Conditional handover / Success / A3 / A5 / A3+A5 | | X | |  | | - | |
| 8.1.4.4.2.NR5GC | | Conditional handover / modify conditional handover configuration | | X | |  | | - | |
| 8.1.4.4.3.NR5GC | | Conditional handover / Failure | | X | |  | | - | |
| 8.1.4.4.4.NR5GC | | Conditional handover / legacy Handover / legacy Handover Failure | | X | |  | | - | |
| 8.1.5.1.1.NR5GC | | UE capability transfer / Success | | X | | X | | - | |
| 8.1.5.2.1.NR5GC | | SI change / Notification of BCCH modification / Short message for SI update | | X | |  | | - | |
| 8.1.5.2.2.NR5GC | | SI change / Notification of BCCH modification / Short message for SI update in NR RRC\_CONNECTED state | | X | | X | | - | |
| 8.1.5.3.1.NR5GC | | PWS notification / PWS reception in NR RRC\_IDLE state | | X | | X | | - | |
| 8.1.5.3.2.NR5GC | | PWS notification / PWS reception in NR RRC\_INACTIVE state | | X | | X | | - | |
| 8.1.5.3.3.NR5GC | | PWS notification / PWS reception in NR RRC\_CONNECTED state | | X | | X | | - | |
| 8.1.5.3.4.NR5GC | | PWS notification / PWS reception using dedicatedSystemInformationDelivery | | X | | X | | - | |
| 8.1.5.4.1.NR5GC | | Counter check / Reception of CounterCheck message by the UE | | X | | X | | - | |
| 8.1.5.5.1.NR5GC | | Redirection to NR / From E-UTRA / Success | | X | |  | | - | |
| 8.1.5.6.1.NR5GC | | Radio link failure / RRC connection re-establishment success | | X | | X | | - | |
| 8.1.5.6.3.NR5GC | | Radio link failure / T311 expiry | | X | | X | | - | |
| 8.1.5.6.5.1.NR5GC | | NR CA / No Radio Link Failure on SCell / RRC Connection Continues on PCell / Intra-band Contiguous CA | | X | | X | | - | |
| 8.1.5.6.5.2.NR5GC | | NR CA / No Radio Link Failure on SCell / RRC Connection Continues on PCell / Inter-band CA | | X | |  | | - | |
| 8.1.5.6.5.3.NR5GC | | NR CA / No Radio Link Failure on SCell / RRC Connection Continues on PCell / Intra-band non-Contiguous CA | | X | |  | | - | |
| 8.1.5.7.1.1.NR5GC | | Failure information / RLC failure / MCG / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.5.7.1.2.NR5GC | | Failure information / RLC failure / MCG / Inter-band CA | | X | |  | |  | |
| 8.1.5.8.1.NR5GC | | Processing delay / RRC\_Idle to RRC\_Connected / RRC\_Inactive to RRC\_Connected / Success / Latency check | | X | |  | |  | |
| 8.1.5.8.2.1.NR5GC | | Processing delay / RRC\_Inactive to RRC\_Connected / Success / Latency check / SCell addition / Intra-band Contiguous CA | | X | |  | | - | |
| 8.1.5.8.2.2.NR5GC | | Processing delay / RRC\_Inactive to RRC\_Connected / Success / Latency check / SCell addition / Inter-band CA | | X | |  | | - | |
| 8.1.5.8.2.3.NR5GC | | Processing delay / RRC\_Inactive to RRC\_Connected / Success / Latency check / SCell addition / Intra-band non-Contiguous CA | | X | |  | | - | |
| 8.1.5.9.1.NR5GC | | RACS / UL Message Segment transfer / UECapabilityInformation | | X | |  | |  | |
| 8.1.5.10.1.NR5GC | | UE Assistance Information / Release Preference | | X | |  | | - | |
| 8.1.6.1.1.2.NR5GC | | Immediate MDT / Measurement / Latency metrics for UL PDCP Packet Delay per DRB | | X | |  | | - | |
| 8.1.6.1.1.1.NR5GC | | Immediate MDT / Measurement reporting / Location information | | X | |  | | - | |
| 8.1.6.1.2.1.NR5GC | | Logged MDT / RRC\_IDLE / Logging and reporting / Intra-frequency measurement | | X | |  | | - | |
| 8.1.6.1.2.2.NR5GC | | Logged MDT / RRC\_INACTIVE / Logging and reporting / Inter-frequency measurement | | X | |  | |  | |
| 8.1.6.1.2.3.NR5GC | | Logged MDT / RRC\_IDLE / Logging and reporting / Limiting area scope | | X | |  | | - | |
| 8.1.6.1.2.4.NR5GC | | Logged MDT/ RRC\_IDLE / Logging and reporting / periodic measurement trigger | | X | |  | | - | |
| 8.1.6.1.2.5.NR5GC | | Logged MDT/ RRC\_IDLE / Logging and reporting / event-based trigger | | X | |  | | - | |
| 8.1.6.1.2.6.NR5GC | | Logged MDT/ RRC\_IDLE / Logging and reporting / event-based trigger / out-of-coverage | | X | |  | | - | |
| 8.1.6.1.2.7.NR5GC | | Logged MDT / RRC\_IDLE / Logging and reporting / Reporting at NR re-establishment | | X | |  | | - | |
| 8.1.6.1.2.8.NR5GC | | Logged MDT / Logging and reporting / Reporting at RRC reconfiguration | | X | |  | | - | |
| 8.1.6.1.2.9.NR5GC | | Logged MDT / Location information | | X | |  | | - | |
| 8.1.6.1.2.10.NR5GC | | Logged MDT / Maintaining logged measurement configuration / UE mobility | | X | |  | | - | |
| 8.1.6.1.2.11.NR5GC | | Logged MDT / Maintaining logged measurement configuration / UE state transitions | | X | |  | | - | |
| 8.1.6.1.2.12.NR5GC | | Logged MDT / Release of logged MDT measurement configuration / Expire of duration timer | | X | |  | | - | |
| 8.1.6.1.2.13.NR5GC | | Logged MDT / Release of logged MDT measurement configuration / Reception of new logged measurement configuration | | X | |  | | - | |
| 8.1.6.1.3.1.NR5GC | | Radio Link Failure / Reporting of Intra-frequency measurements | | X | |  | | - | |
| 8.1.6.1.3.2.NR5GC | | Radio Link Failure / Reporting of Inter-frequency measurements | | X | |  | | - | |
| 8.1.6.1.3.3.NR5GC | | Radio Link Failure / Reporting at RRC connection establishment and reestablishment | | X | |  | | - | |
| 8.1.6.1.3.4.NR5GC | | Radio Link Failure / Reporting at NR handover | | X | |  | | - | |
| 8.1.6.1.3.5.NR5GC | | Radio Link Failure / Location information | | X | |  | | - | |
| 8.1.6.1.3.7.NR5GC | | Radio Link Failure / Logging and reporting / Reporting at intra NR handover / PLMN list | | X | |  | | - | |
| 8.1.6.1.4.1.NR5GC | | Connection Establishment Failure / Logging and reporting / T300 expiry | | X | |  | | - | |
| 8.1.6.1.4.2.NR5GC | | Connection Establishment Failure / Logging and reporting / RRC Resume | | X | |  | | - | |
| 8.1.6.1.4.3.NR5GC | | Connection Establishment Failure / Logging and reporting / Reporting at intra-NR handover | | X | |  | | - | |
| 8.1.6.1.4.4.NR5GC | | Connection Establishment Failure / Logging and reporting / Reporting at RRC connection re-establishment | | X | |  | | - | |
| 8.1.6.1.4.5.NR5GC | | Connection Establishment Failure / Logging and reporting / Location Information | | X | |  | | - | |
| 8.1.6.1.4.6.NR5GC | | Connection Establishment Failure / Logging and reporting / Reporting of Intra-frequency measurements | | X | |  | | - | |
| 8.1.6.1.4.7.NR5GC | | Connection Establishment Failure / Logging and reporting / Reporting of Inter-frequency measurements | | X | |  | |  | |
| 8.1.6.1.4.8.NR5GC | | Connection Establishment Failure / Logging and reporting / RACH failure report | | X | |  | | - | |
| 8.1.6.2.1.NR5GC | | Inter-RAT MDT / Immediate MDT / Periodic reporting of E-UTRAN/ Location information | | X | |  | | - | |
| 8.1.6.2.4.NR5GC | | Inter-RAT MDT / Connection Establishment Failure / Logging and reporting / Reporting of E-UTRA measurement | | X | |  | | - | |
| 8.1.6.4.1.NR5GC | | SON / RACH logging and reporting | | X | |  | | - | |
| 8.2.2.4.2.NR5GC | | PSCell addition, modification and release / SCG DRB / NR-DC | | - | | - | | X | |
| 8.2.2.5.2.NR5GC | | PSCell addition, modification and release / Split DRB / NR-DC | | - | | - | | X | |
| 8.2.2.9.2.NR5GC | | Bearer Modification / Uplink data path / Split DRB Reconfiguration / NR-DC | | - | | - | | X | |
| 8.2.3.14.2.NR5GC | | SCG change / Reconfiguration with sync / Split DRB / NR-DC | | - | | - | | X | |
| 8.2.5.1.2.NR5GC | | Radio link failure / Random access problem / NR-DC | | - | | - | | X | |
| 8.2.5.2.2.NR5GC | | Radio link failure / PSCell out of sync indication / NR-DC | | - | | - | | X | |
| 8.2.5.3.2.NR5GC | | Radio link failure / rlc-MaxNumRetx failure / NR-DC | | - | | - | | X | |
| 8.2.5.4.2.NR5GC | | Reconfiguration failure / SCG change failure / NR-DC | | - | | - | | X | |
| 9.1.1.1.NR5GC | | EAP based primary authentication and key agreement / EAP-AKA' related procedures | | X | | X | | - | |
| 9.1.1.2.NR5GC | | EAP based primary authentication and key agreement / Reject | | X | | X | | - | |
| 9.1.1.3.NR5GC | | EAP based primary authentication and key agreement / EAP message transport / Abnormal | | X | | X | | - | |
| 9.1.1.4.NR5GC | | 5G AKA based primary authentication and key agreement / 5G-AKA related procedures | | X | | X | | - | |
| 9.1.1.5.NR5GC | | 5G AKA based primary authentication and key agreement / Reject | | X | | X | |  | |
| 9.1.1.6.NR5GC | | 5G AKA based primary authentication and key agreement / Abnormal | | X | | X | | - | |
| 9.1.2.1.NR5GC | | NAS security mode command | | X | | X | | - | |
| 9.1.2.2.NR5GC | | Protection of initial NAS signalling messages | | X | | X | | - | |
| 9.1.2.3.NR5GC | | Integrity protection / Correct functionality of 5G NAS integrity algorithm / SNOW3G | | X | | X | | - | |
| 9.1.2.4.NR5GC | | Integrity protection / Correct functionality of 5G NAS integrity algorithm / AES | | X | | X | | - | |
| 9.1.2.5.NR5GC | | Integrity protection / Correct functionality of 5G NAS integrity algorithm / ZUC | | X | | X | | - | |
| 9.1.2.6.NR5GC | | Ciphering and deciphering / Correct functionality of 5G NAS encryption algorithm / SNOW3G | | X | | X | | - | |
| 9.1.2.7.NR5GC | | Ciphering and deciphering / Correct functionality of 5G NAS encryption algorithm / AES | | X | | X | | - | |
| 9.1.2.8.NR5GC | | Ciphering and deciphering / Correct functionality of 5G NAS encryption algorithm / ZUC | | X | | X | | - | |
| 9.1.3.1.NR5GC | | Identification procedure | | X | | X | | - | |
| 9.1.4.1.NR5GC | | Generic UE configuration update / New 5G-GUTI, NITZ, registration requested, Network slicing indication, New Allowed NSSAI / acknowledgement from the UE | | X | |  | | - | |
| 9.1.5.1.1.NR5GC | | Initial registration / Success / 5G-GUTI reallocation, Last visited TAI | | X | |  | | - | |
| 9.1.5.1.2.NR5GC | | Initial registration / 5GS services / Equivalent PLMN list handling | | X | |  | | - | |
| 9.1.5.1.3.NR5GC | | Initial registration / 5GS services / NSSAI handling | | X | | X | | - | |
| 9.1.5.1.3a.NR5GC | | Initial registration / 5GS services / NSSAI handling / NSSAI Storage | | X | | X | | - | |
| 9.1.5.1.5.NR5GC | | Initial registration / Abnormal / Failure after 5 attempts | | X | | X | | - | |
| 9.1.5.1.6.NR5GC | | Initial registration / Rejected / Illegal UE | | X | | X | | - | |
| 9.1.5.1.8.NR5GC | | Initial registration / Rejected / Serving network not authorized | | X | |  | | - | |
| 9.1.5.1.9.NR5GC | | Initial registration / Abnormal / Change of cell into a new tracking area | | X | | X | | - | |
| 9.1.5.1.10.NR5GC | | Initial registration / Rejected / PLMN not allowed | | X | | X | | - | |
| 9.1.5.1.11.NR5GC | | Initial registration / Rejected / Tracking area not allowed | | X | | X | | - | |
| 9.1.5.1.12.NR5GC | | Initial registration / Rejected / Roaming not allowed in this tracking area | | X | |  | | - | |
| 9.1.5.1.13.NR5GC | | Initial registration / Rejected / No suitable cells in tracking area | | X | |  | | - | |
| 9.1.5.1.14.NR5GC | | Initial registration / Rejected / Congestion / Abnormal cases / T3346 | | X | |  | | - | |
| 9.1.5.1.15.NR5GC | | Initial registration / Success / Extended and spare fields in UE network capability | | X | | X | | - | |
| 9.1.5.2.1.NR5GC | | Mobility registration update / TAI list handling | | X | | X | | - | |
| 9.1.5.2.2.NR5GC | | Periodic registration update / Accepted | | X | | X | | - | |
| 9.1.5.2.4.NR5GC | | Mobility registration update / The lower layer requests NAS signalling connection recovery | | X | | X | | - | |
| 9.1.5.2.6.NR5GC | | Mobility registration update / Registered slice(s) change | | X | |  | | - | |
| 9.1.5.2.7.NR5GC | | Mobility and periodic registration update / Rejected / UE identity cannot be derived by the network | | X | | X | | - | |
| 9.1.5.2.8.NR5GC | | Mobility and periodic registration update / Rejected / implicitly de-registered | | X | | X | | - | |
| 9.1.5.2.9.NR5GC | | Mobility and periodic registration update / Abnormal / Change of cell into a new tracking area, collision with generic UE configuration update procedure | | X | |  | | - | |
| 9.1.6.1.1.NR5GC | | UE-initiated de-registration / switch off / Abnormal / De-registration and 5GMM common procedure collision | | X | | X | | - | |
| 9.1.6.1.2.NR5GC | | UE-initiated de-registration / normal de-registration / Abnormal / Transmission failure without TAI change from lower layers, De-registration and 5GMM common procedure collision, T3521 timeout | | X | | X | | - | |
| 9.1.6.1.3.NR5GC | | UE-initiated de-registration / Abnormal / Change of cell into a new tracking area | | X | |  | | - | |
| 9.1.6.1.4.NR5GC | | UE-initiated de-registration / Abnormal / Transmission failure with TAI change from lower layers | | X | |  | | - | |
| 9.1.6.2.1.NR5GC | | Network-initiated de-registration / de-registration for 3GPP access / re-registration required | | X | |  | | - | |
| 9.1.6.2.2.NR5GC | | Network-initiated de-registration / de-registration for 3GPP access / re-registration not required | | X | | X | | - | |
| 9.1.7.1.NR5GC | | Service request / IDLE mode uplink user data transport / Rejected / Restricted service area, Abnormal / T3517 / T3525 | | X | | X | | - | |
| 9.1.7.2.NR5GC | | Service request / CONNECTED mode user data transport / Abnormal / T3517 | | X | | X | | - | |
| 9.1.8.1.NR5GC | | SMS over NAS / MO and MT SMS over NAS - Idle mode | | X | | X | | - | |
| 9.1.8.2.NR5GC | | SMS over NAS / Multiple MO and MT SMS over NAS - CONNECTED mode | | X | | X | | - | |
| 9.1.9.1.NR5GC | | RACS / Network assigned UE radio capability ID | | X | |  | | - | |
| 9.1.9.2.NR5GC | | RACS / UE configuration update / UE radio capability ID | | X | |  | | - | |
| 9.1.9.3.NR5GC | | RACS / PLMN change within registration area / From PLMN assigned to Manufacturer assigned UE Radio Capability ID | | X | |  | | - | |
| 9.1.9.5.NR5GC | | RACS / Handling of delete indication for NW assigned UE radio capability ID | | X | |  | | - | |
| 9.1.10.1.NR5GC | | NSSAA / EAP message transport / Success | | X | |  | | - | |
| 9.1.10.2.NR5GC | | "Network slice-specific authentication and authorization / EAP message transport / Abnormal | | X | |  | | - | |
| 9.1.10.6.NR5GC | | NSSAA / UE configuration update / Rejected NSSAI | | X | |  | | - | |
| 9.3.1.1.NR5GC | | Inter-system mobility registration update / Single-registration mode with N26 / 5GMM-IDLE / 5GC to EPC | | X | | X | | - | |
| 9.3.1.2.NR5GC | | Inter-system mobility registration update / Single-registration mode with N26 / 5GMM-IDLE / EPC to 5GC | | X | |  | | - | |
| 9.3.1.3.NR5GC | | Inter-system mobility and periodic registration update / Rejected / Single-registration mode with N26 / Handling of EPC relevant parameters | | X | | X | | - | |
| 10.1.1.1.NR5GC | | PDU session authentication and authorization / During the UE-requested PDU session procedure | | X | | X | | - | |
| 10.1.1.2.NR5GC | | PDU session authentication and authorization / After the UE-requested PDU session procedure | | X | | X | | - | |
| 10.1.2.1.NR5GC | | Network-requested PDU session modification / Accepted | | X | | X | | - | |
| 10.1.2.2.NR5GC | | Network-requested PDU session modification / Abnormal / PDU session in state PDU SESSION INACTIVE | | X | | X | | - | |
| 10.1.3.2.NR5GC | | Network-requested PDU session release / Accepted / Insufficient resources / T3396, Accepted / Insufficient resources for specific slice and DNN / T3584, Abnormal / No PDU session context active for the received PDU session ID | | X | | X | | - | |
| 10.1.4.1.NR5GC | | UE-requested PDU session establishment / Abnormal / T3580 | | X | | X | | - | |
| 10.1.5.1.NR5GC | | UE-requested PDU session modification | | X | | X | | - | |
| 10.1.6.1.NR5GC | | UE-requested PDU session release / Abnormal / collision with network-requested PDU session modification procedure | | X | | X | | - | |
| 10.1.6.2.NR5GC | | UE-requested PDU session release / Abnormal / collision with network-requested PDU session release procedure | | X | | X | | - | |
| 11.1.1.NR5GC | | MO MMTEL voice call setup from NR RRC\_IDLE / EPS Fallback with redirection / Single registration mode with N26 interface / Success | | X | |  | | - | |
| 11.1.1a.NR5GC | | MO MMTEL enhanced voice service call setup from NR RRC\_IDLE / EPS Fallback with redirection / Single registration mode with N26 interface / Success | | X | |  | | - | |
| 11.1.2.NR5GC | | MO MMTEL voice call setup from NR RRC\_IDLE / EPS Fallback with redirection / Single registration mode without N26 interface / Success | | X | |  | | - | |
| 11.1.3.NR5GC | | MO MMTEL voice call setup from NR RRC\_CONNECTED / EPS Fallback with handover / Single registration mode with N26 interface / Success | | X | | X | | - | |
| 11.1.3a.NR5GC | | MO MMTEL enhanced voice service call setup from NR RRC\_CONNECTED / EPS Fallback with handover / Single registration mode with N26 interface / Success | | X | |  | | - | |
| 11.1.4.NR5GC | | MO MMTEL voice call setup from NR RRC\_CONNECTED / EPS Fallback with redirection / Single registration mode with N26 interface / E-UTRAN cell selection using cell status barred / Success | | X | |  | | - | |
| 11.1.5.NR5GC | | MO MMTEL voice call setup from NR RRC\_CONNECTED / EPS Fallback with redirection / Single registration mode without N26 interface / E-UTRAN cell selection using cell status reservation / Success | | X | |  | | - | |
| 11.1.6.NR5GC | | MT MMTEL voice call setup from NR RRC\_IDLE / EPS Fallback with redirection / Single registration mode without N26 interface / Success | | X | |  | | - | |
| 11.1.7.NR5GC | | Emergency call setup from NR RRC\_IDLE / Emergency Services Fallback to EPS with redirection / Single registration mode with N26 interface / Success | | X | | X | | - | |
| 11.1.8.NR5GC | | MO MMTEL voice call setup from NR RRC\_CONNECTED / EPS Fallback with handover / Single registration mode with N26 interface / voiceFallbackIndication | | X | |  | | - | |
| 11.1.9.NR5GC | | MO MMTEL voice call setup from NR RRC\_IDLE / EPS Fallback with redirection / Single registration mode with N26 interface / voiceFallbackIndication | | X | |  | | - | |
| 11.3.1.NR5GC | | UAC / Access Identity 0 / 0% access probability / MTSI MO speech call/SMSoIP | | X | | X | | - | |
| 11.3.1a.NR5GC | | UAC / Access Identity 0 / 0% access probability / Uplink User data transfer / RRC\_INACTIVE | | X | | X | |  | |
| 11.3.2.NR5GC | | UAC / Access Identity 0 / 0% access probability / Paging for MT Access/Emergency Call | | X | |  | | - | |
| 11.3.3.NR5GC | | UAC / Access Identity 0 / AC8 / RRC\_INACTIVE / RNAUpdate/RRC Resume | | X | | X | | - | |
| 11.3.4.NR5GC | | UAC / Access Identity 0 / Registration procedure for mobility and periodic registration update / BarringPerPLMN/Implicit AC Barring List | | X | |  | | - | |
| 11.3.6.NR5GC | | UAC / Access Identity 2 / New cell not in the country of its HPLMN/EHPLMN 0% access probability/MCS indicator / HPLMN/0%/100% accessibility AC7/RRC\_INACTIVE | | X | |  | | - | |
| 11.3.7.NR5GC | | UAC / Access Identity 11..15 / High Priority Access / HPLMN/0% accessibility AC2/Emergency call | | X | | X | | - | |
| 11.3.8.NR5GC | | UAC / Access Identity 0 / NR RRC\_IDLE / Cell re-selection while T390 is running | | X | |  | | - | |
| 11.3.9.NR5GC | | UAC / Access Identity 0 / ODAC / PLMN / RPLMN / not EPLMN | | X | |  | | - | |
| 11.4.2.NR5GC | | 5GMM-DEREGISTERED.LIMITED-SERVICE / Emergency call / Utilisation of emergency numbers stored on the ME / Initial registration for emergency services / Handling of forbidden PLMNs | | X | | X | | - | |
| 11.4.3.NR5GC | | 5GMM-DEREGISTERED.NO-SUPI / Emergency call / Utilisation of emergency numbers stored on the ME / Initial registration for emergency services | | X | |  | | - | |
| 11.4.4.NR5GC | | 5GMM-REGISTERED.ATTEMPTING-REGISTRATION-UPDATE T3346 running / Emergency call establishment / 5GMM-REGISTERED.NORMAL-SERVICE / Emergency call establishment before T3396 expiry | | X | | X | | - | |
| 11.4.5.NR5GC | | 5GMM-REGISTERED.LIMITED-SERVICE / 5GMM-IDLE / Emergency call establishment and release / Handling of 5GS forbidden tracking areas for roaming | | X | |  | | - | |
| 11.4.6.NR5GC | | 5GMM-REGISTERED.NON-ALLOWED-SERVICE / Emergency call establishment and release / Handling of non-allowed tracking areas | | X | |  | | - | |
| 11.4.7.NR5GC | | Handling of Local and Extended emergency numbers / Mobility | | X | |  | | - | |
| 11.4.8.NR5GC | | Handling of Local and extended emergency numbers / Switch-off and maximum local numbers storage | | X | |  | | - | |
| 11.4.9.NR5GC | | 5GMM-DEREGISTERED.LIMITED-SERVICE No suitable cells in tracking area / Emergency call establishment and release | | X | |  | | - | |
| 11.6.1.NR5GC | | Data Off / MO Voice Call | | X | |  | | - | |
| 11.6.2.NR5GC | | Data Off / MO Video Call | | X | |  | |  | |
| 11.6.3.NR5GC | | Data Off / SMSoIP | | X | |  | | - | |

Annex B: NR TBS tables

# B.1 Downlink TBS (normative)

## B.1.0 Introduction

The tables in this clause are depending on parameters provided by RRC signalling as described in subclause 7.1.2.2.4.1. LRBs is limited according to the DL scheduling scheme in subclause 7.1.2.2.3.

## B.1.1 Downlink TBS using MCS index table 5.1.3.1-1

### B.1.1.1 Downlink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 0, number of CDM groups = 1

Table B.1.1.1-1: Void

Table B.1.1.1-2: Void

Table B.1.1.1-3: TBS for PDSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 0, number of CDM groups = 1, PDSCH-duration = 12

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 32 | 1 | 0 | 576 | 11 | 2 | 2216 | 12 | 9 | 5760 | 10 | 23 |
| 40 | 1 | 1 | 608 | 14 | 1 | 2280 | 16 | 7 | 5888 | 14 | 19 |
| 48 | 1 | 2 | 640 | 15 | 1 | 2408 | 17 | 7 | 6016 | 17 | 16 |
| 64 | 2 | 0 | 672 | 16 | 1 | 2472 | 15 | 8 | 6144 | 8 | 28 |
| 80 | 2 | 1 | 704 | 5 | 7 | 2536 | 6 | 19 | 6272 | 15 | 19 |
| 96 | 3 | 0 | 736 | 17 | 1 | 2600 | 16 | 8 | 6400 | 17 | 18 |
| 104 | 2 | 2 | 768 | 11 | 3 | 2664 | 13 | 11 | 6656 | 16 | 19 |
| 120 | 3 | 1 | 808 | 15 | 2 | 2728 | 15 | 9 | 6784 | 11 | 24 |
| 128 | 4 | 0 | 848 | 16 | 2 | 2792 | 17 | 8 | 6912 | 15 | 20 |
| 136 | 1 | 7 | 888 | 17 | 2 | 2856 | 14 | 11 | 7040 | 17 | 19 |
| 152 | 3 | 2 | 928 | 11 | 4 | 2976 | 16 | 9 | 7296 | 16 | 20 |
| 160 | 5 | 0 | 984 | 14 | 3 | 3104 | 17 | 9 | 7424 | 15 | 21 |
| 168 | 4 | 1 | 1032 | 15 | 3 | 3240 | 16 | 11 | 7552 | 14 | 22 |
| 176 | 1 | 9 | 1064 | 4 | 13 | 3368 | 14 | 12 | 7680 | 11 | 26 |
| 192 | 6 | 0 | 1128 | 16 | 3 | 3496 | 17 | 11 | 7808 | 17 | 20 |
| 208 | 5 | 1 | 1160 | 17 | 3 | 3624 | 12 | 14 | 7936 | 16 | 21 |
| 224 | 7 | 0 | 1192 | 5 | 12 | 3752 | 16 | 12 | 8064 | 15 | 22 |
| 240 | 2 | 6 | 1224 | 12 | 5 | 3840 | 13 | 14 | 8456 | 17 | 21 |
| 256 | 8 | 0 | 1256 | 15 | 4 | 3904 | 11 | 16 | 8712 | 16 | 22 |
| 272 | 4 | 3 | 1288 | 9 | 7 | 3968 | 17 | 12 | 9224 | 17 | 22 |
| 288 | 9 | 0 | 1320 | 13 | 5 | 4032 | 7 | 23 | 9480 | 13 | 27 |
| 304 | 7 | 1 | 1352 | 16 | 4 | 4096 | 14 | 14 | 9992 | 17 | 23 |
| 320 | 10 | 0 | 1416 | 17 | 4 | 4224 | 16 | 13 | 10248 | 14 | 27 |
| 336 | 8 | 1 | 1480 | 14 | 5 | 4352 | 13 | 15 | 10504 | 17 | 24 |
| 352 | 11 | 0 | 1544 | 15 | 5 | 4480 | 17 | 13 | 10760 | 14 | 28 |
| 368 | 7 | 2 | 1608 | 13 | 6 | 4608 | 14 | 15 | 11016 | 15 | 27 |
| 384 | 12 | 0 | 1672 | 16 | 5 | 4736 | 16 | 14 | 11272 | 17 | 25 |
| 408 | 6 | 3 | 1736 | 17 | 5 | 4864 | 13 | 18 | 11528 | 15 | 28 |
| 432 | 13 | 0 | 1800 | 11 | 8 | 4992 | 17 | 14 | 11784 | 16 | 27 |
| 456 | 14 | 0 | 1864 | 15 | 6 | 5120 | 7 | 27 | 12040 | 17 | 26 |
| 480 | 15 | 0 | 1928 | 5 | 18 | 5248 | 16 | 15 | 12296 | 16 | 28 |
| 504 | 12 | 1 | 2024 | 16 | 6 | 5376 | 13 | 19 | 12552 | 17 | 27 |
| 528 | 16 | 0 | 2088 | 17 | 6 | 5504 | 12 | 20 | 13064 | 17 | 28 |
| 552 | 17 | 0 | 2152 | 15 | 7 | 5632 | 17 | 15 |  |  |  |

### B.1.1.2 Downlink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 1, number of CDM groups = 1

Table B.1.1.2-1: Void

Table B.1.1.2-2: Void

Table B.1.1.2-3: TBS for PDSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 1, number of CDM groups = 1, PDSCH-duration = 12

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 24 | 1 | 0 | 552 | 11 | 2 | 2280 | 13 | 9 | 6016 | 15 | 19 |
| 40 | 1 | 1 | 576 | 14 | 1 | 2408 | 17 | 7 | 6144 | 17 | 18 |
| 48 | 1 | 2 | 608 | 15 | 1 | 2472 | 16 | 8 | 6272 | 10 | 25 |
| 56 | 2 | 0 | 640 | 16 | 1 | 2536 | 13 | 11 | 6400 | 16 | 19 |
| 64 | 1 | 3 | 672 | 5 | 7 | 2600 | 9 | 14 | 6528 | 15 | 20 |
| 72 | 1 | 4 | 704 | 17 | 1 | 2664 | 17 | 8 | 6656 | 14 | 21 |
| 80 | 2 | 1 | 736 | 9 | 4 | 2728 | 14 | 11 | 6784 | 17 | 19 |
| 88 | 3 | 0 | 768 | 15 | 2 | 2792 | 16 | 9 | 6912 | 11 | 25 |
| 96 | 2 | 2 | 808 | 16 | 2 | 2856 | 10 | 14 | 7040 | 16 | 20 |
| 112 | 1 | 6 | 848 | 17 | 2 | 2976 | 17 | 9 | 7168 | 15 | 21 |
| 120 | 4 | 0 | 888 | 11 | 4 | 3104 | 16 | 11 | 7296 | 10 | 28 |
| 128 | 2 | 3 | 928 | 14 | 3 | 3240 | 11 | 14 | 7424 | 17 | 20 |
| 144 | 3 | 2 | 984 | 15 | 3 | 3368 | 17 | 11 | 7552 | 16 | 21 |
| 152 | 5 | 0 | 1032 | 16 | 3 | 3496 | 12 | 14 | 7680 | 15 | 22 |
| 160 | 4 | 1 | 1064 | 9 | 6 | 3624 | 16 | 12 | 7808 | 14 | 23 |
| 168 | 1 | 9 | 1128 | 17 | 3 | 3752 | 13 | 14 | 8064 | 17 | 21 |
| 184 | 6 | 0 | 1160 | 10 | 6 | 3824 | 17 | 12 | 8192 | 16 | 22 |
| 192 | 4 | 2 | 1192 | 15 | 4 | 3840 | 7 | 23 | 8456 | 14 | 24 |
| 208 | 5 | 1 | 1224 | 9 | 7 | 3904 | 9 | 20 | 8712 | 17 | 22 |
| 224 | 7 | 0 | 1256 | 8 | 8 | 3968 | 14 | 14 | 8968 | 16 | 23 |
| 240 | 8 | 0 | 1288 | 16 | 4 | 4032 | 16 | 13 | 9224 | 13 | 27 |
| 256 | 5 | 2 | 1320 | 3 | 20 | 4096 | 13 | 15 | 9480 | 17 | 23 |
| 272 | 9 | 0 | 1352 | 17 | 4 | 4224 | 17 | 13 | 9736 | 14 | 27 |
| 288 | 7 | 1 | 1416 | 14 | 5 | 4352 | 13 | 16 | 9992 | 15 | 26 |
| 304 | 10 | 0 | 1480 | 15 | 5 | 4480 | 16 | 14 | 10248 | 17 | 24 |
| 320 | 8 | 1 | 1544 | 13 | 6 | 4608 | 13 | 18 | 10504 | 15 | 27 |
| 336 | 11 | 0 | 1608 | 16 | 5 | 4736 | 15 | 15 | 10760 | 17 | 25 |
| 352 | 7 | 2 | 1672 | 17 | 5 | 4864 | 17 | 14 | 11016 | 15 | 28 |
| 368 | 12 | 0 | 1736 | 15 | 6 | 4992 | 14 | 18 | 11272 | 16 | 27 |
| 384 | 6 | 3 | 1800 | 13 | 7 | 5120 | 16 | 15 | 11528 | 17 | 26 |
| 408 | 13 | 0 | 1864 | 16 | 6 | 5248 | 12 | 20 | 11784 | 16 | 28 |
| 432 | 14 | 0 | 1928 | 14 | 7 | 5376 | 17 | 15 | 12040 | 17 | 27 |
| 456 | 11 | 1 | 2024 | 17 | 6 | 5504 | 10 | 23 | 12552 | 17 | 28 |
| 480 | 15 | 0 | 2088 | 15 | 7 | 5632 | 14 | 19 |  |  |  |
| 504 | 16 | 0 | 2152 | 16 | 7 | 5760 | 17 | 16 |  |  |  |
| 528 | 17 | 0 | 2216 | 10 | 12 | 5888 | 10 | 24 |  |  |  |

### B.1.1.3 Downlink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 2, number of CDM groups = 2, modulation order <= 2

NOTE: The major purpose of the tables in this clause is to cope with PDSCH transmissions being restricted to Qm <= 2 (QPSK) like PDSCH transmissions being scheduled with P-RNTI, RA-RNTI, SI-RNTI (see TS 38.214 clause 5.1.3.1 [22]).

Table B.1.1.3-1: Void

Table B.1.1.3-2: Void

Table B.1.1.3-3: TBS for PDSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 2, number of CDM groups = 2, modulation order <= 2, PDSCH-duration = 12

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 24 | 1 | 0 | 128 | 4 | 1 | 256 | 4 | 4 | 504 | 4 | 8 |
| 32 | 1 | 1 | 136 | 1 | 9 | 272 | 5 | 3 | 552 | 7 | 5 |
| 40 | 1 | 2 | 144 | 6 | 0 | 288 | 7 | 2 | 576 | 6 | 6 |
| 48 | 2 | 0 | 152 | 3 | 3 | 320 | 6 | 3 | 640 | 5 | 8 |
| 64 | 2 | 1 | 160 | 5 | 1 | 336 | 3 | 7 | 672 | 7 | 6 |
| 72 | 3 | 0 | 176 | 7 | 0 | 368 | 7 | 3 | 736 | 5 | 9 |
| 80 | 2 | 2 | 184 | 2 | 6 | 384 | 6 | 4 | 768 | 6 | 8 |
| 88 | 1 | 6 | 192 | 6 | 1 | 408 | 5 | 5 | 808 | 7 | 7 |
| 96 | 4 | 0 | 208 | 5 | 2 | 432 | 3 | 9 | 888 | 7 | 8 |
| 104 | 2 | 3 | 224 | 7 | 1 | 456 | 7 | 4 | 1032 | 7 | 9 |
| 120 | 5 | 0 | 240 | 6 | 2 | 480 | 6 | 5 |  |  |  |

### B.1.1.4 Downlink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 2, number of CDM groups = 2

Table B.1.1.4-1: Void

Table B.1.1.4-2: Void

Table B.1.1.4-3: TBS for PDSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 2, number of CDM groups = 2, PDSCH-duration = 12

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 24 | 1 | 0 | 456 | 14 | 1 | 1800 | 16 | 7 | 4736 | 17 | 16 |
| 32 | 1 | 1 | 480 | 9 | 3 | 1864 | 13 | 9 | 4864 | 15 | 19 |
| 40 | 1 | 2 | 504 | 15 | 1 | 1928 | 17 | 7 | 4992 | 17 | 18 |
| 48 | 2 | 0 | 528 | 16 | 1 | 2024 | 16 | 8 | 5120 | 10 | 25 |
| 64 | 2 | 1 | 552 | 7 | 5 | 2088 | 13 | 11 | 5248 | 16 | 19 |
| 72 | 3 | 0 | 576 | 17 | 1 | 2152 | 17 | 8 | 5376 | 15 | 20 |
| 80 | 2 | 2 | 608 | 15 | 2 | 2216 | 14 | 11 | 5504 | 17 | 19 |
| 88 | 1 | 6 | 640 | 12 | 3 | 2280 | 16 | 9 | 5760 | 16 | 20 |
| 96 | 4 | 0 | 672 | 16 | 2 | 2408 | 15 | 11 | 5888 | 14 | 22 |
| 104 | 2 | 3 | 704 | 17 | 2 | 2472 | 17 | 9 | 6016 | 17 | 20 |
| 120 | 5 | 0 | 736 | 14 | 3 | 2536 | 16 | 11 | 6272 | 16 | 21 |
| 128 | 4 | 1 | 768 | 8 | 6 | 2600 | 14 | 12 | 6400 | 14 | 23 |
| 136 | 1 | 9 | 808 | 15 | 3 | 2664 | 13 | 13 | 6528 | 11 | 28 |
| 144 | 6 | 0 | 848 | 16 | 3 | 2728 | 17 | 11 | 6656 | 17 | 21 |
| 152 | 3 | 3 | 888 | 11 | 5 | 2792 | 12 | 14 | 6784 | 15 | 23 |
| 160 | 5 | 1 | 928 | 17 | 3 | 2856 | 11 | 15 | 6912 | 12 | 27 |
| 176 | 7 | 0 | 984 | 15 | 4 | 2976 | 16 | 12 | 7168 | 17 | 22 |
| 184 | 2 | 6 | 1032 | 16 | 4 | 3104 | 17 | 12 | 7296 | 16 | 23 |
| 192 | 6 | 1 | 1064 | 11 | 6 | 3240 | 11 | 18 | 7424 | 13 | 27 |
| 208 | 8 | 0 | 1128 | 17 | 4 | 3368 | 16 | 13 | 7680 | 17 | 23 |
| 224 | 9 | 0 | 1160 | 12 | 6 | 3496 | 17 | 13 | 7808 | 16 | 24 |
| 240 | 6 | 2 | 1192 | 15 | 5 | 3624 | 14 | 15 | 8064 | 14 | 27 |
| 256 | 10 | 0 | 1224 | 13 | 6 | 3752 | 16 | 14 | 8192 | 17 | 24 |
| 272 | 11 | 0 | 1256 | 6 | 13 | 3824 | 9 | 22 | 8456 | 14 | 28 |
| 288 | 7 | 2 | 1288 | 16 | 5 | 3840 | 14 | 16 | 8712 | 17 | 25 |
| 304 | 12 | 0 | 1320 | 14 | 6 | 3904 | 15 | 15 | 8968 | 15 | 28 |
| 320 | 8 | 2 | 1352 | 17 | 5 | 3968 | 17 | 14 | 9224 | 16 | 27 |
| 336 | 13 | 0 | 1416 | 15 | 6 | 4032 | 7 | 27 | 9480 | 17 | 26 |
| 352 | 14 | 0 | 1480 | 13 | 7 | 4096 | 16 | 15 | 9736 | 17 | 27 |
| 368 | 11 | 1 | 1544 | 16 | 6 | 4224 | 13 | 19 | 10248 | 17 | 28 |
| 384 | 15 | 0 | 1608 | 17 | 6 | 4352 | 17 | 15 |  |  |  |
| 408 | 16 | 0 | 1672 | 15 | 7 | 4480 | 16 | 16 |  |  |  |
| 432 | 17 | 0 | 1736 | 12 | 9 | 4608 | 14 | 19 |  |  |  |

## B.1.2 Void

# B.2 Uplink TBS (informative)

## B.2.0 Introduction

The tables in this clause are depending on parameters provided by RRC signalling as described in subclause 7.1.2.3.2. LRBs is limited to the minimum value of NBWP=24 in accordance to Table 5.3.2-1 of TS 38.101-1/2 [5, 6].

For selection of the **LRBs / IMCS** pair for a particular TBS, the same criteria are applied, as specified for the DL in subclause 7.1.2.2.4.2 paragraph ‘**LRBs / IMCS** pair determination’.

## B.2.1 Uplink TBS using MCS index table 5.1.3.1-1

### B.2.1.1 Uplink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 0, number of CDM groups = 1

Table B.2.1.1-1: TBS for PUSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 0, number of CDM groups = 1, PUSCH-duration = 14

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 32 | 1 | 0 | 848 | 23 | 0 | 3496 | 19 | 8 | 8192 | 22 | 15 |
| 40 | 1 | 1 | 888 | 24 | 0 | 3624 | 22 | 7 | 8456 | 21 | 16 |
| 56 | 1 | 2 | 928 | 19 | 1 | 3752 | 23 | 7 | 8712 | 23 | 15 |
| 72 | 2 | 0 | 984 | 20 | 1 | 3824 | 8 | 19 | 8968 | 24 | 15 |
| 88 | 2 | 1 | 1032 | 21 | 1 | 3840 | 24 | 7 | 9224 | 23 | 16 |
| 104 | 3 | 0 | 1064 | 22 | 1 | 3904 | 19 | 9 | 9480 | 24 | 16 |
| 112 | 2 | 2 | 1128 | 23 | 1 | 3968 | 15 | 12 | 9736 | 23 | 18 |
| 136 | 3 | 1 | 1160 | 24 | 1 | 4032 | 22 | 8 | 9992 | 21 | 19 |
| 144 | 4 | 0 | 1192 | 20 | 2 | 4096 | 20 | 9 | 10248 | 24 | 18 |
| 152 | 2 | 3 | 1224 | 16 | 3 | 4224 | 23 | 8 | 10504 | 22 | 19 |
| 160 | 1 | 7 | 1256 | 21 | 2 | 4352 | 24 | 8 | 10760 | 23 | 19 |
| 176 | 5 | 0 | 1288 | 22 | 2 | 4480 | 22 | 9 | 11016 | 18 | 22 |
| 184 | 4 | 1 | 1320 | 17 | 3 | 4608 | 20 | 11 | 11272 | 24 | 19 |
| 208 | 1 | 9 | 1352 | 23 | 2 | 4736 | 23 | 9 | 11528 | 19 | 22 |
| 224 | 6 | 0 | 1416 | 24 | 2 | 4864 | 21 | 11 | 11784 | 23 | 20 |
| 240 | 5 | 1 | 1480 | 19 | 3 | 4992 | 24 | 9 | 12040 | 20 | 22 |
| 256 | 7 | 0 | 1544 | 20 | 3 | 5120 | 13 | 17 | 12296 | 24 | 20 |
| 272 | 2 | 6 | 1608 | 21 | 3 | 5248 | 23 | 11 | 12552 | 19 | 23 |
| 288 | 8 | 0 | 1672 | 14 | 5 | 5376 | 18 | 13 | 12808 | 23 | 21 |
| 304 | 4 | 3 | 1736 | 22 | 3 | 5504 | 24 | 11 | 13064 | 20 | 23 |
| 320 | 2 | 7 | 1800 | 23 | 3 | 5632 | 19 | 13 | 13320 | 22 | 22 |
| 336 | 9 | 0 | 1864 | 24 | 3 | 5760 | 22 | 12 | 13576 | 24 | 21 |
| 352 | 6 | 2 | 1928 | 20 | 4 | 5888 | 20 | 13 | 13832 | 21 | 23 |
| 368 | 10 | 0 | 2024 | 21 | 4 | 6016 | 23 | 12 | 14088 | 23 | 22 |
| 384 | 8 | 1 | 2088 | 22 | 4 | 6144 | 13 | 19 | 14344 | 22 | 23 |
| 408 | 11 | 0 | 2152 | 23 | 4 | 6272 | 24 | 12 | 14600 | 24 | 22 |
| 432 | 12 | 0 | 2216 | 19 | 5 | 6400 | 19 | 14 | 14856 | 21 | 24 |
| 456 | 6 | 3 | 2280 | 24 | 4 | 6528 | 22 | 13 | 15112 | 23 | 23 |
| 480 | 13 | 0 | 2408 | 21 | 5 | 6656 | 20 | 14 | 15624 | 22 | 24 |
| 504 | 14 | 0 | 2472 | 18 | 6 | 6784 | 23 | 13 | 15880 | 24 | 23 |
| 528 | 11 | 1 | 2536 | 22 | 5 | 6912 | 8 | 28 | 16136 | 23 | 24 |
| 552 | 15 | 0 | 2600 | 19 | 6 | 7040 | 21 | 14 | 16392 | 22 | 25 |
| 576 | 12 | 1 | 2664 | 23 | 5 | 7168 | 24 | 13 | 16896 | 24 | 24 |
| 608 | 16 | 0 | 2728 | 20 | 6 | 7296 | 13 | 21 | 17424 | 23 | 25 |
| 640 | 17 | 0 | 2792 | 24 | 5 | 7424 | 22 | 14 | 17928 | 24 | 25 |
| 672 | 18 | 0 | 2856 | 21 | 6 | 7552 | 19 | 16 | 18432 | 23 | 26 |
| 704 | 19 | 0 | 2976 | 18 | 7 | 7680 | 23 | 14 | 18960 | 24 | 26 |
| 736 | 20 | 0 | 3104 | 22 | 6 | 7808 | 21 | 15 | 19968 | 24 | 27 |
| 768 | 21 | 0 | 3240 | 23 | 6 | 7936 | 20 | 16 | 21000 | 24 | 28 |
| 808 | 22 | 0 | 3368 | 24 | 6 | 8064 | 24 | 14 |  |  |  |

Table B.2.1.1-2: Void

### B.2.1.2 Uplink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 1, number of CDM groups = 1

Table B.2.1.2-1: TBS for PUSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 1, number of CDM groups = 1, PUSCH-duration = 14

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 32 | 1 | 0 | 848 | 23 | 0 | 3496 | 19 | 8 | 8192 | 22 | 15 |
| 40 | 1 | 1 | 888 | 24 | 0 | 3624 | 22 | 7 | 8456 | 21 | 16 |
| 56 | 1 | 2 | 928 | 19 | 1 | 3752 | 23 | 7 | 8712 | 23 | 15 |
| 72 | 2 | 0 | 984 | 20 | 1 | 3824 | 8 | 19 | 8968 | 24 | 15 |
| 88 | 2 | 1 | 1032 | 21 | 1 | 3840 | 24 | 7 | 9224 | 23 | 16 |
| 104 | 3 | 0 | 1064 | 22 | 1 | 3904 | 19 | 9 | 9480 | 24 | 16 |
| 112 | 2 | 2 | 1128 | 23 | 1 | 3968 | 15 | 12 | 9736 | 23 | 18 |
| 136 | 3 | 1 | 1160 | 24 | 1 | 4032 | 22 | 8 | 9992 | 21 | 19 |
| 144 | 4 | 0 | 1192 | 20 | 2 | 4096 | 20 | 9 | 10248 | 24 | 18 |
| 152 | 2 | 3 | 1224 | 16 | 3 | 4224 | 23 | 8 | 10504 | 22 | 19 |
| 160 | 1 | 7 | 1256 | 21 | 2 | 4352 | 24 | 8 | 10760 | 23 | 19 |
| 176 | 5 | 0 | 1288 | 22 | 2 | 4480 | 22 | 9 | 11016 | 18 | 22 |
| 184 | 4 | 1 | 1320 | 17 | 3 | 4608 | 20 | 11 | 11272 | 24 | 19 |
| 208 | 1 | 9 | 1352 | 23 | 2 | 4736 | 23 | 9 | 11528 | 19 | 22 |
| 224 | 6 | 0 | 1416 | 24 | 2 | 4864 | 21 | 11 | 11784 | 23 | 20 |
| 240 | 5 | 1 | 1480 | 19 | 3 | 4992 | 24 | 9 | 12040 | 20 | 22 |
| 256 | 7 | 0 | 1544 | 20 | 3 | 5120 | 13 | 17 | 12296 | 24 | 20 |
| 272 | 2 | 6 | 1608 | 21 | 3 | 5248 | 23 | 11 | 12552 | 19 | 23 |
| 288 | 8 | 0 | 1672 | 14 | 5 | 5376 | 18 | 13 | 12808 | 23 | 21 |
| 304 | 4 | 3 | 1736 | 22 | 3 | 5504 | 24 | 11 | 13064 | 20 | 23 |
| 320 | 2 | 7 | 1800 | 23 | 3 | 5632 | 19 | 13 | 13320 | 22 | 22 |
| 336 | 9 | 0 | 1864 | 24 | 3 | 5760 | 22 | 12 | 13576 | 24 | 21 |
| 352 | 6 | 2 | 1928 | 20 | 4 | 5888 | 20 | 13 | 13832 | 21 | 23 |
| 368 | 10 | 0 | 2024 | 21 | 4 | 6016 | 23 | 12 | 14088 | 23 | 22 |
| 384 | 8 | 1 | 2088 | 22 | 4 | 6144 | 13 | 19 | 14344 | 22 | 23 |
| 408 | 11 | 0 | 2152 | 23 | 4 | 6272 | 24 | 12 | 14600 | 24 | 22 |
| 432 | 12 | 0 | 2216 | 19 | 5 | 6400 | 19 | 14 | 14856 | 21 | 24 |
| 456 | 6 | 3 | 2280 | 24 | 4 | 6528 | 22 | 13 | 15112 | 23 | 23 |
| 480 | 13 | 0 | 2408 | 21 | 5 | 6656 | 20 | 14 | 15624 | 22 | 24 |
| 504 | 14 | 0 | 2472 | 18 | 6 | 6784 | 23 | 13 | 15880 | 24 | 23 |
| 528 | 11 | 1 | 2536 | 22 | 5 | 6912 | 8 | 28 | 16136 | 23 | 24 |
| 552 | 15 | 0 | 2600 | 19 | 6 | 7040 | 21 | 14 | 16392 | 22 | 25 |
| 576 | 12 | 1 | 2664 | 23 | 5 | 7168 | 24 | 13 | 16896 | 24 | 24 |
| 608 | 16 | 0 | 2728 | 20 | 6 | 7296 | 13 | 21 | 17424 | 23 | 25 |
| 640 | 17 | 0 | 2792 | 24 | 5 | 7424 | 22 | 14 | 17928 | 24 | 25 |
| 672 | 18 | 0 | 2856 | 21 | 6 | 7552 | 19 | 16 | 18432 | 23 | 26 |
| 704 | 19 | 0 | 2976 | 18 | 7 | 7680 | 23 | 14 | 18960 | 24 | 26 |
| 736 | 20 | 0 | 3104 | 22 | 6 | 7808 | 21 | 15 | 19968 | 24 | 27 |
| 768 | 21 | 0 | 3240 | 23 | 6 | 7936 | 20 | 16 | 21000 | 24 | 28 |
| 808 | 22 | 0 | 3368 | 24 | 6 | 8064 | 24 | 14 |  |  |  |

Table B.2.1.2-2: Void

### B.2.1.3 Void

### B.2.1.4 Void

### B.2.1.5 Uplink TBS using MCS index table 5.1.3.1-1, dmrs-AdditionalPosition = 2, number of CDM groups = 2

Table B.2.1.5-1: TBS for PUSCH using MCS index table 5.1.3.1-1 with dmrs-AdditionalPosition = 2, number of CDM groups = 2, PUSCH-duration = 14

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** | **TBS** | **LRBs** | **IMCS** |
| 24 | 1 | 0 | 672 | 21 | 0 | 2856 | 21 | 7 | 7552 | 24 | 15 |
| 40 | 1 | 1 | 704 | 23 | 0 | 2976 | 22 | 7 | 7680 | 15 | 22 |
| 48 | 1 | 2 | 736 | 24 | 0 | 3104 | 23 | 7 | 7808 | 23 | 16 |
| 56 | 2 | 0 | 768 | 19 | 1 | 3240 | 24 | 7 | 7936 | 22 | 18 |
| 64 | 1 | 3 | 808 | 20 | 1 | 3368 | 19 | 9 | 8064 | 24 | 16 |
| 72 | 1 | 4 | 848 | 21 | 1 | 3496 | 22 | 8 | 8192 | 23 | 18 |
| 80 | 2 | 1 | 888 | 22 | 1 | 3624 | 23 | 8 | 8456 | 21 | 19 |
| 88 | 3 | 0 | 928 | 23 | 1 | 3752 | 24 | 8 | 8712 | 24 | 18 |
| 96 | 2 | 2 | 984 | 24 | 1 | 3824 | 17 | 12 | 8968 | 19 | 21 |
| 112 | 1 | 6 | 1032 | 20 | 2 | 3840 | 22 | 9 | 9224 | 23 | 19 |
| 120 | 4 | 0 | 1064 | 21 | 2 | 3904 | 20 | 11 | 9480 | 24 | 19 |
| 128 | 2 | 3 | 1128 | 22 | 2 | 3968 | 14 | 14 | 9736 | 22 | 20 |
| 144 | 3 | 2 | 1160 | 23 | 2 | 4032 | 23 | 9 | 9992 | 23 | 20 |
| 152 | 5 | 0 | 1192 | 24 | 2 | 4096 | 21 | 11 | 10248 | 20 | 22 |
| 160 | 4 | 1 | 1224 | 19 | 3 | 4224 | 24 | 9 | 10504 | 24 | 20 |
| 168 | 1 | 9 | 1256 | 8 | 8 | 4352 | 13 | 16 | 10760 | 21 | 22 |
| 184 | 6 | 0 | 1288 | 20 | 3 | 4480 | 23 | 11 | 11016 | 23 | 21 |
| 192 | 4 | 2 | 1320 | 3 | 20 | 4608 | 24 | 11 | 11272 | 22 | 22 |
| 208 | 5 | 1 | 1352 | 21 | 3 | 4736 | 21 | 12 | 11528 | 24 | 21 |
| 224 | 7 | 0 | 1416 | 22 | 3 | 4864 | 22 | 12 | 11784 | 23 | 22 |
| 240 | 8 | 0 | 1480 | 18 | 4 | 4992 | 20 | 13 | 12040 | 20 | 24 |
| 256 | 5 | 2 | 1544 | 23 | 3 | 5120 | 23 | 12 | 12296 | 24 | 22 |
| 272 | 9 | 0 | 1608 | 24 | 3 | 5248 | 21 | 13 | 12552 | 21 | 24 |
| 288 | 7 | 1 | 1672 | 21 | 4 | 5376 | 24 | 12 | 12808 | 23 | 23 |
| 304 | 10 | 0 | 1736 | 15 | 6 | 5504 | 22 | 13 | 13064 | 22 | 24 |
| 320 | 8 | 1 | 1800 | 22 | 4 | 5632 | 20 | 14 | 13320 | 24 | 23 |
| 336 | 11 | 0 | 1864 | 23 | 4 | 5760 | 23 | 13 | 13576 | 20 | 26 |
| 352 | 7 | 2 | 1928 | 24 | 4 | 5888 | 10 | 24 | 13832 | 23 | 24 |
| 368 | 12 | 0 | 2024 | 20 | 5 | 6016 | 24 | 13 | 14088 | 22 | 25 |
| 384 | 6 | 3 | 2088 | 21 | 5 | 6144 | 18 | 16 | 14344 | 24 | 24 |
| 408 | 13 | 0 | 2152 | 22 | 5 | 6272 | 22 | 14 | 14600 | 23 | 25 |
| 432 | 14 | 0 | 2216 | 19 | 6 | 6400 | 19 | 16 | 14856 | 22 | 26 |
| 456 | 11 | 1 | 2280 | 23 | 5 | 6528 | 23 | 14 | 15368 | 24 | 25 |
| 480 | 15 | 0 | 2408 | 24 | 5 | 6656 | 21 | 15 | 15624 | 23 | 26 |
| 504 | 16 | 0 | 2472 | 18 | 7 | 6784 | 24 | 14 | 16136 | 24 | 26 |
| 528 | 17 | 0 | 2536 | 22 | 6 | 6912 | 22 | 15 | 16896 | 24 | 27 |
| 552 | 18 | 0 | 2600 | 19 | 7 | 7040 | 21 | 16 | 17424 | 24 | 28 |
| 576 | 14 | 1 | 2664 | 23 | 6 | 7168 | 20 | 18 |  |  |  |
| 608 | 19 | 0 | 2728 | 20 | 7 | 7296 | 23 | 15 |  |  |  |
| 640 | 20 | 0 | 2792 | 24 | 6 | 7424 | 22 | 16 |  |  |  |

Table B.2.1.5-2: Void

## B.2.2 Void

## B.2.3 Void

Annex C (informative):  
Style guide and design principles

# C.1 Style guide

The style guide specified in TS 36.523-3 [12] Annex B applies to the present document.

# C.2 Design principles

The design principles specified in TS 36.523-3 [12] Annex B apply to the present document.

Annex D (normative): TTCN-3 definitions

# D.0 Introduction

The present Annex D specifies the TTCN-3 type definitions used at the system interface to configure and control the SS.

In case of discrepancy between the content of the present Annex D and the equivalent TTCN-3 definitions / semantic requirements found in the TTCN modules provided as attachments to the present specification, the latter shall take precedence.

NOTE: This annex is automatically generated from the TTCN-3 modules provided as attachment to the present specification and containing the listed TTCN-3 type definitions.























































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































































# D.1 NR\_ASP\_TypeDefs

Type definitions for configuration of the system simulator;  
Common design principles:  
Semantics of OMIT: unless specified otherwise, for all TTCN-3 type definitions used in ASPs omit means "keep as it is" =>  
- on initial configuration in general all fields shall be provided  
- no default values for fields are foreseen  
- if necessary non-existence of information shall be explicitly configured  
 (e.g. with a union of "no configuration" and "configuration parameters"  
- fields within structures imported from the core spec are excepted from this rule  
- if a sub-structure is explicitly excluded from this rule all fields and sub-fields shall be fully specified for each (re-)configuration

## D.1.1 ASN1\_Container

Definitions containing ASN.1 types for backward compatibility

NR\_ASN1\_ARFCN\_ValueNR\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_ARFCN\_ValueNR\_Type** | |
| **Comment** |  | |
| R15 | ARFCN\_ValueNR |  |

NR\_ASN1\_UL\_AM\_RLC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_UL\_AM\_RLC\_Type** | |
| **Comment** |  | |
| R15 | UL\_AM\_RLC |  |

NR\_ASN1\_DL\_AM\_RLC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_DL\_AM\_RLC\_Type** | |
| **Comment** |  | |
| R15 | DL\_AM\_RLC |  |

NR\_ASN1\_UL\_UM\_RLC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_UL\_UM\_RLC\_Type** | |
| **Comment** |  | |
| R15 | UL\_UM\_RLC |  |

NR\_ASN1\_DL\_UM\_RLC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_DL\_UM\_RLC\_Type** | |
| **Comment** |  | |
| R15 | DL\_UM\_RLC |  |

NR\_ASN1\_PDSCH\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_PDSCH\_Config\_Type** | |
| **Comment** |  | |
| R15 | PDSCH\_Config |  |

NR\_ASN1\_PDSCH\_ConfigCommon\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_PDSCH\_ConfigCommon\_Type** | |
| **Comment** |  | |
| R15 | PDSCH\_ConfigCommon |  |

NR\_ASN1\_SPS\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_SPS\_Config\_Type** | |
| **Comment** |  | |
| R15 | SPS\_Config |  |
| R16 | [SPS\_Config\_R16](#SPS_Config_R16) |  |

NR\_ASN1\_TDD\_UL\_DL\_ConfigCommon\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_TDD\_UL\_DL\_ConfigCommon\_Type** | |
| **Comment** |  | |
| R15 | TDD\_UL\_DL\_ConfigCommon |  |

NR\_ASN1\_TDD\_UL\_DL\_SlotConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_TDD\_UL\_DL\_SlotConfig\_Type** | |
| **Comment** |  | |
| R15 | TDD\_UL\_DL\_SlotConfig |  |

NR\_ASN1\_FrequencyInfoDL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_FrequencyInfoDL\_Type** | |
| **Comment** |  | |
| R15 | FrequencyInfoDL |  |

NR\_ASN1\_FrequencyInfoUL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_FrequencyInfoUL\_Type** | |
| **Comment** |  | |
| R15 | FrequencyInfoUL |  |

NR\_ASN1\_BWP\_UplinkCommon\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_BWP\_UplinkCommon\_Type** | |
| **Comment** |  | |
| R15 | BWP\_UplinkCommon |  |

NR\_ASN1\_BWP\_UplinkDedicated\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_BWP\_UplinkDedicated\_Type** | |
| **Comment** |  | |
| R15 | BWP\_UplinkDedicated |  |

NR\_ASN1\_RACH\_ConfigDedicated\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_RACH\_ConfigDedicated\_Type** | |
| **Comment** |  | |
| R15 | RACH\_ConfigDedicated |  |

NR\_ASN1\_SI\_RequestConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_SI\_RequestConfig\_Type** | |
| **Comment** |  | |
| R15 | SI\_RequestConfig |  |

NR\_ASN1\_PDSCH\_ServingCellConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_PDSCH\_ServingCellConfig\_Type** | |
| **Comment** |  | |
| R15 | PDSCH\_ServingCellConfig |  |

NR\_ASN1\_PUSCH\_ServingCellConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_PUSCH\_ServingCellConfig\_Type** | |
| **Comment** |  | |
| R15 | PUSCH\_ServingCellConfig |  |

NR\_ASN1\_SearchSpace\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_SearchSpace\_Type** | |
| **Comment** |  | |
| R15 | SearchSpace |  |

NR\_ASN1\_ControlResourceSet\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_ControlResourceSet\_Type** | |
| **Comment** |  | |
| R15 | ControlResourceSet |  |

NR\_ASN1\_BWP\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_BWP\_Type** | |
| **Comment** |  | |
| R15 | BWP |  |

NR\_ASN1\_DRX\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_DRX\_Config\_Type** | |
| **Comment** |  | |
| R15 | DRX\_Config |  |

NR\_ASN1\_MeasGapConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_MeasGapConfig\_Type** | |
| **Comment** |  | |
| R15 | MeasGapConfig |  |

NR\_ASN1\_MAC\_CellGroupConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_MAC\_CellGroupConfig\_Type** | |
| **Comment** |  | |
| R15 | MAC\_CellGroupConfig |  |

NR\_ASN1\_PhysicalCellGroupConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_PhysicalCellGroupConfig\_Type** | |
| **Comment** |  | |
| R15 | PhysicalCellGroupConfig |  |

NR\_ASN1\_RateMatchPattern\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_RateMatchPattern\_Type** | |
| **Comment** |  | |
| R15 | RateMatchPattern |  |

NR\_ASN1\_RateMatchPatternLTE\_CRS\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_RateMatchPatternLTE\_CRS\_Type** | |
| **Comment** |  | |
| R15 | RateMatchPatternLTE\_CRS |  |

## D.1.2 System\_Configuration

Formal ASP Definitions for system configuration

NR\_SystemRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SystemRequest\_Type** | |
| **Comment** |  | |
| Cell | [NR\_CellConfigRequest\_Type](#NR_CellConfigRequest_Type) | configure/release a cell |
| CellAttenuationList | [NR\_CellAttenuationList\_Type](#NR_CellAttenuationList_Type) | power attenuation for one or several cells;  all cells included in the list shall be changed at the same time;  all cells in the list shall reach the new cell power within a maximum of 100ms (10 frames) as according to TS 38.523-3 clause 7.1.4.2  CellId: In the common ASP part the CellId shall be set  - to the cell the timing information refers to if activation time shall be applied  - to nr\_Cell\_NonSpecific when there is no activation time  TimingInfo: 'Now' (in general, but activation time may be used also) |
| RadioBearerList | [NR\_RadioBearerList\_Type](#NR_RadioBearerList_Type) | configure/release one or several SRBs and/or DRBs at an SpCell  NOTE: RBs are not configured in an SCell |
| EnquireTiming | [Null\_Type](#Null_Type) | get current timing information for the given cell  TimingInfo : 'Now' |
| AS\_Security | [NR\_AS\_Security\_Type](#NR_AS_Security_Type) | StartRestart/Release of AS security |
| SystemIndCtrl | [NR\_System\_IndicationControl\_Type](#NR_System_IndicationControl_Type) | to configure SS to generate system indications |
| PdcpCount | [NR\_PDCP\_CountReq\_Type](#NR_PDCP_CountReq_Type) | to set or enquire PDCP COUNT for one or more RBs |
| DciTrigger | [NR\_DCI\_Trigger\_Type](#NR_DCI_Trigger_Type) | to trigger a specific DCI to be transmitted on PDCCH (e.g. PDCCH order) |
| Paging | [NR\_PagingTrigger\_Type](#NR_PagingTrigger_Type) | to trigger SS to send paging at the given paging occasion (as calculated in TTCN)  NOTE: The SS shall use the DCI configuration as provided by NR\_PcchConfig\_Type; the DCI may or may not carry a short message but it in any case it shall indicate presence |
| MacCommandTrigger | [NR\_MAC\_ControlElementDL\_Type](#NR_MAC_ControlElementDL_Type) | to trigger a specific MAC control element to be transmitted to the UE |
| L1\_TestMode | [NR\_L1\_TestMode\_Type](#NR_L1_TestMode_Type) | to Set L1/MAC in special Test modes e.g. DL CRC etc.  per default (at initial configuration) no test mode is activated |
| PdcpHandoverControl | [NR\_PDCP\_HandoverControlReq\_Type](#NR_PDCP_HandoverControlReq_Type) | to inform the target cell about the handover (or PSCell change) procedure. |
| DeltaValues | [NR\_Band\_SsbForDelta\_Type](#NR_Band_SsbForDelta_Type) | to provide the primary and secondary frequency info for deriving the delta values |
| SpsCg | [NR\_SPS\_CG\_ActDeact\_Type](#NR_SPS_CG_ActDeact_Type) | to configure/activate or release/deactivate DL SPS assignment or UL configured grant type 2 scheduling |

NR\_SystemConfirm\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SystemConfirm\_Type** | |
| **Comment** | confirmations for system configuration;  in general to be sent after the configuration has been done | |
| Cell | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| CellAttenuationList | [Null\_Type](#Null_Type) | (no further parameters from SS)  NOTE 1:  the confirmation shall be sent when all cells have changed power levels  NOTE 2:  for the CellId in the common ASP part the same rules are applied as for the SYSTEM REQ |
| RadioBearerList | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| EnquireTiming | [Null\_Type](#Null_Type) | the cell's timing information is contained in the TimingInfo of the ASP's common part |
| AS\_Security | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| SystemIndCtrl | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| PdcpCount | [NR\_PDCP\_CountCnf\_Type](#NR_PDCP_CountCnf_Type) | as response to 'Get' a list is returned containing COUNT information for the requested RBs |
| DciTrigger | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| MacCommandTrigger | [Null\_Type](#Null_Type) | (no further parameters from SS) |
| L1\_TestMode | [Null\_Type](#Null_Type) | confirmation for L1 test mode |
| PdcpHandoverControl | [Null\_Type](#Null_Type) | confirmation for PDCP handover control |
| DeltaValues | [UE\_NR\_DeltaValues\_Type](#UE_NR_DeltaValues_Type) | Delta values to be used for primary and secondary band |
| SpsCg | [Null\_Type](#Null_Type) | confirmation for DL SPS or UL configured grant type 2 Activation/Deactivation |

NR\_SystemIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SystemIndication\_Type** | |
| **Comment** |  | |
| Error | charstring | indicates an error situation in SS;  is not explicitly handled in TTCN but causes an INCONC due to default behaviour;  an additional error code can be signalled in the common part of the ASP;  SS shall raise an error when in TS 38.523-3 or in any other ASP definitions |
| RlcDiscardInd | [NR\_RlcDiscardInd\_Type](#NR_RlcDiscardInd_Type) | indicates discarded PDUs |
| MAC | [NR\_MAC\_ControlElementUL\_Type](#NR_MAC_ControlElementUL_Type) | indicates MAC control element being receive from the UE |
| RachPreamble | [NR\_RachPreamble\_Type](#NR_RachPreamble_Type) | RACH preamble being sent by the UE |
| SchedReq | [Null\_Type](#Null_Type) | indication for scheduling request sent by the UE |
| UL\_HARQ | [HARQ\_Type](#HARQ_Type) | to report the UL HARQ as received on PUCCH or PUSCH for corresponding DL transmission |
| HarqError | [NR\_HarqError\_Type](#NR_HarqError_Type) | indicates detection of HARQ error:  1. HARQ CRC error for UL data  2. HARQ NACK from the UE unless SS is configured to report HARQ ACK/NACK |

## D.1.3 Cell\_Configuration

Specific Info for Cell Configuration Primitive

### D.1.3.1 Cell\_Configuration\_Common

NR\_ASP\_TypeDefs: Constant Definitions

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Basic Types** | | | |
| **tsc\_NR\_CellAttenuation\_Off** | [NR\_Attenuation\_Type](#NR_Attenuation_Type) | {Off:=true} |  |

Cell\_Configuration\_Common: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_InitialAttenuation\_Type** | [NR\_Attenuation\_Type](#NR_Attenuation_Type) ([tsc\_NR\_CellAttenuation\_Off](#tsc_NR_CellAttenuation_Off)) | Attenuation restricted to 'Off' |

NR\_CellConfigRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_CellConfigRequest\_Type** | |
| **Comment** |  | |
| AddOrReconfigure | [NR\_CellConfigInfo\_Type](#NR_CellConfigInfo_Type) | for cell configuration:  TimingInfo : 'Now' for initial configuration; specific TimingInfo may be used for reconfiguration  ControlInfo : FollowOnFlag:=false (unless explicitly specified otherwise in TS 38.523-3 clause 7) |
| Release | [Null\_Type](#Null_Type) | to remove a cell completely -  CellId : identifier of the cell to be released; nr\_Cell\_NonSpecific, in case all cells shall be released  TimingInfo : 'Now'  ControlInfo : FollowOnFlag:=false |

NR\_CellConfigInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigInfo\_Type** | | |
| **Comment** | common information for initial cell configuration or reconfiguration;  in case of reconfiguration omit means 'keep configuration as it is' | | |
| StaticResourceConfig | [NR\_SS\_StaticCellResourceConfig\_Type](#NR_SS_StaticCellResourceConfig_Type) | opt | mandatory for the initial configuration; to be omitted afterwards |
| CellConfigCommon | [NR\_CellConfigCommon\_Type](#NR_CellConfigCommon_Type) | opt | common configuration parameters which are not specific to physical layer (or any other layer) |
| PhysicalLayer | [NR\_CellConfigPhysicalLayer\_Type](#NR_CellConfigPhysicalLayer_Type) | opt | Physical layer configuration: physical channels, signals and BWPs for UL and DL; DCI |
| BcchConfig | [NR\_BcchConfig\_Type](#NR_BcchConfig_Type) | opt | configuration of BCCH/BCH; SS is triggered to configure RLC/MAC accordingly;  BCCH data on the PDSCH is distinguished by the SI-RNTI  PBCH: MIB;  PDSCH: scheduling and resource allocation; SIBs |
| PcchConfig | [NR\_PcchConfig\_Type](#NR_PcchConfig_Type) | opt | configuration of PCCH/PCH; SS is triggered to configure RLC/MAC accordingly;  PCCH data on the PDSCH is distinguished by the P-RNTI  (needed even to modify SI => shall be configured for CELL\_BROADCASTING) |
| RachProcedureConfig | [NR\_RachProcedureConfig\_Type](#NR_RachProcedureConfig_Type) | opt | to configure the SS's behaviour for the RACH procedure;  may be omitted at initial configuration e.g. in case that the cell shall not have an uplink;  NOTE: there is no way to explicitly remove the RACH procedure configuration after it has been configured for a cell |
| DcchDtchConfig | [NR\_DcchDtchConfig\_Type](#NR_DcchDtchConfig_Type) | opt | Parameters related to DCCH/DTCH in UL and DL |
| ServingCellConfig | [NR\_ServingCellConfig\_Type](#NR_ServingCellConfig_Type) | opt | To be configured at initial configuration of a cell:  for non-CA scenarios it shall be either 'SpCell' or 'None' ('None' applies for pure neighbouring cells) |

NR\_SS\_StaticCellResourceConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SS\_StaticCellResourceConfig\_Type** | | |
| **Comment** | capabilities of a cell according to the initial condition of a test case, to allow resource management at SS implementation (see TS 38.508-1 clause 6.3.3) | | |
| CA\_Capability | [NR\_CellCA\_Capability\_Type](#NR_CellCA_Capability_Type) |  | capability of a cell in context of carrier aggregation |

NR\_CellCA\_Capability\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_CellCA\_Capability\_Type** |
| **Comment** | static information about the cell's capability for carrier aggregation, not being changed during a test case;  may be used for resource management at the SS; according to TS 38.508-1 clause 6.3.3.2 |
| SpCell | Cell can be used as SpCell during a test case (primary cell of a master or secondary cell group; TS 37.340 clause 3.1);  normal case i.e. applicable even when SpCell is the only cell of the cell group |
| Scell\_Active | Active SCell: An NR cell that may become an SCell at any point of time during the test case and which, while being an SCell, may be activated |
| Scell\_Inactive | Inactive SCell: An NR cell that may become an SCell at any point of time during the test case but is never activated while being an SCell |
| None | e.g. when a cell is not used for connected mode during a test case (pure neighbouring cell) |

NR\_CellConfigCommon\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigCommon\_Type** | | |
| **Comment** | common configuration parameters which are not specific to physical layer (or any other layer) | | |
| C\_RNTI | [RNTI\_Value\_Type](#RNTI_Value_Type) | opt | (pre-)configured C-RNTI used by physical layer and by MAC layer;  affects scrambling of PDSCH/PUSCH and CRC of PDCCH(s);  shall be used implicitly in RACH procedure (i.e. as CE in RAR) |
| CellTimingInfo | [CellTimingInfo\_Type](#CellTimingInfo_Type) | opt |  |
| InitialCellPower | [NR\_InitialCellPower\_Type](#NR_InitialCellPower_Type) | opt | reference cell power of each antenna in DL  NOTE 1:  the power of an antenna may be reduced by antenna specific configuration  NOTE 2:  in general the power may be adjusted on a per resource element basis  => all physical channel/signal power settings shall be adjusted relatively to the reference cell power;  if there are more than one TX antennas each one may have its own attenuation;  independently from those relative power settings the cell power can easily be adjusted by just changing the reference power |

NR\_Attenuation\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_Attenuation\_Type** | |
| **Comment** | attenuation of the reference power | |
| Value | integer (0..149) | cell power reference power reduced by the given attenuation (value is in dB);  corresponds to AbsoluteCellPower\_Type |
| Off | [Null\_Type](#Null_Type) | =< -145dBm according to TS 38.508-1 Table 6.2.2.1-3 |

NR\_InitialCellPower\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_InitialCellPower\_Type** | | |
| **Comment** |  | | |
| MaxReferencePower | [NR\_AbsoluteCellPower\_Type](#NR_AbsoluteCellPower_Type) |  | maximum value of cell reference power (in dBm/SCS as per TS 38.508-1, clause 6.2.2);  a cell is initialised with this reference power;  its value is the upper bound of the cell power during the test case |
| Attenuation | [NR\_InitialAttenuation\_Type](#NR_InitialAttenuation_Type) |  | initial attenuation |

### D.1.3.2 PhysicalLayer

NR\_CellConfigPhysicalLayer\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigPhysicalLayer\_Type** | | |
| **Comment** | Common configuration of physical channels, signals and BWPs | | |
| Common | [NR\_CellConfigPhysicalLayerCommon\_Type](#NR_CellConfigPhysicalLayerCommon_Type) | opt | Configuration common for UL and DL |
| Downlink | [NR\_CellConfigPhysicalLayerDownlink\_Type](#NR_CellConfigPhysicalLayerDownlink_Type) | opt | DL configuration |
| Uplink | [NR\_CellConfigPhysicalLayerUplink\_Type](#NR_CellConfigPhysicalLayerUplink_Type) | opt | UL configuration;  may be omitted at initial configuration e.g. in case that the cell shall not have an uplink;  NOTE: there is no way to explicitly remove the uplink configuration after it has been configured for a cell |

#### D.1.3.2.1 PhysicalLayer\_Common

NR\_CellConfigPhysicalLayerCommon\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigPhysicalLayerCommon\_Type** | | |
| **Comment** | Configuration common for UL and DL | | |
| PhysicalCellId | PhysCellId | opt | Physical-layer cell identity according to 38.211 clause 7.4.2.1;  EN-DC: corresponds to ServingCellConfigCommon.physCellId |
| DuplexMode | [NR\_DuplexMode\_Type](#NR_DuplexMode_Type) | opt | FDD or TDD; FDD/TDD specific parameters |

NR\_DuplexMode\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DuplexMode\_Type** | |
| **Comment** | FDD/TDD and maybe other types of duplex mode; in general FDD/TDD mode is determined from the frequency band | |
| FDD | [NR\_FDD\_Info\_Type](#NR_FDD_Info_Type) |  |
| TDD | [NR\_TDD\_Info\_Type](#NR_TDD_Info_Type) |  |

NR\_FDD\_Info\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record Type** | |
| **Name** | **NR\_FDD\_Info\_Type** |
| **Comment** | FDD (paired spectrum) specific parameters: no further parameters defined for FDD |

NR\_TDD\_UL\_DL\_SlotConfigList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_TDD\_UL\_DL\_SlotConfigList\_Type** |
| **Comment** | corresponds to ServingCellConfig.tdd-UL-DL-ConfigurationDedicated |
| record of [NR\_ASN1\_TDD\_UL\_DL\_SlotConfig\_Type](#NR_ASN1_TDD_UL_DL_SlotConfig_Type) | |

NR\_TDD\_Config\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_TDD\_Config\_Type** | | |
| **Comment** | Common and dedicated TDD configuration | | |
| Common | [NR\_ASN1\_TDD\_UL\_DL\_ConfigCommon\_Type](#NR_ASN1_TDD_UL_DL_ConfigCommon_Type) | opt | Common TDD configuration as used in TS 38.213 clause 11 corresponding to ServingCellConfigCommon.tdd-UL-DL-ConfigurationCommon;  shall be present for TDD at initial configuration |
| Dedicated | [NR\_TDD\_UL\_DL\_SlotConfigList\_Type](#NR_TDD_UL_DL_SlotConfigList_Type) | opt | Dedicated TDD configuration for single slots over-ruling the flexible slots of the common configuration;  corresponds to ServingCellConfig.tdd-UL-DL-ConfigurationDedicated;  shall be present for TDD at initial configuration: the list is empty when there is no dedicated slot configuration;  (omit means "keep as it is");  NOTE: The dedicated configuration can only exist together with common configuration as a single slot configuration is related to the periodicity given by the common configuration (see TDD-UL-DL-SlotConfig field description for slotIndex in TS 38.331) |

NR\_TDD\_Info\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_TDD\_Info\_Type** | |
| **Comment** | cell specific parameters for TDD (unpaired spectrum) | |
| Config | [NR\_TDD\_Config\_Type](#NR_TDD_Config_Type) | specific TDD configuration with sets of symbols for UL and DL and possibly flexible symbols which are not specified as UL or DL  (corresponding to TDD-UL-DL-ConfigurationCommon and TDD-UL-DL-ConfigDedicated according to TS 38.213 clause 11.1) |
| FullFlexible | [Null\_Type](#Null_Type) | No TDD configuration is provided to the UE: all slots and symbols are considered as flexible according to TS 38.213 clause 11.1 |

#### D.1.3.2.2 PhysicalLayer\_Downlink

PhysicalLayer\_Downlink: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_EPRE\_Ratio\_Type** | integer | Energy per resource element relative to given reference signal or abstract reference cell power (dB) |

NR\_CellConfigPhysicalLayerDownlink\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigPhysicalLayerDownlink\_Type** | | |
| **Comment** | physical layer configuration at the SS for the downlink of a cell | | |
| FrequencyInfoDL | [NR\_ASN1\_FrequencyInfoDL\_Type](#NR_ASN1_FrequencyInfoDL_Type) | opt | carries information about location of SSB and reference resource block (point A) in frequency domain  and about associated frequency bands (list of FreqBandIndicatorNR) |
| SSPbchBlock | [NR\_SSB\_Config\_Type](#NR_SSB_Config_Type) | opt | Configuration of SS/PBCH-block transmission |
| PdschCellLevelConfig | [NR\_PDSCH\_CellLevelConfig\_Type](#NR_PDSCH_CellLevelConfig_Type) | opt | Cell-level configuration of PDSCH being applicable independent from the BWP a PDSCH is associated to |
| BWPs | [NR\_DownlinkBWPs\_Type](#NR_DownlinkBWPs_Type) | opt | Configuration of DL BWPs and their associated physical channels and signals |
| CsiConfig | [NR\_CSI\_Config\_Type](#NR_CSI_Config_Type) | opt | Configuration of CSI Reference Signals |

##### D.1.3.2.2.1 SS\_PBCH\_Block

SS/PBCH block configuration according to TS 38.213 clause 4.1:  
SS/PBCH block consists of synchronisation Signals (PSS and SSS) and PBCH (see e.g. TS 38.300 figure 5.2.4-1);  
a demodulation reference signal (DM-RS) is frequency multiplexed on the PBCH symbols (TS 38.300 clause 5.2.4, TS 38.211 clause 7.4.1.4) and  
the DM-RS sequence corresponds to the three LSBs of the SS/PBCH index (TS 38.213 clause 4.1 and TS 38.211 clause 7.4.1.4.1);  
the SS/PBCH index needs to be maintained by the SS (as the system frame number);  
the physical layer cell id is carried by PSS and SSS according to TS 38.211 clause 7.4.2

SS\_PBCH\_Block: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SSB\_Periodicity\_Type** | ServingCellConfigCommon.ssb\_periodicityServingCell |  |
| **NR\_SSB\_PositionsInBurst\_Type** | ServingCellConfigCommon.ssb\_PositionsInBurst |  |

NR\_SS\_BlockPattern\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_SS\_BlockPattern\_Type** |
| **Comment** | TS 38.101-1 Table 5.4.3.3-1 specifies for a given operating band and SS Block subcarrier spacing which case of TS 38.213 clause 4.1 to be applied  => first symbol indexes for candidate SS/PBCH blocks and the size of the bitmap are determined accordingly |
| caseA | 15 kHz subcarrier spacing: 4 bits (<= 3GHz) or 8 bits (> 3GHz); first symbol indexes: {2,8} + 14\*n |
| caseB | 30 kHz subcarrier spacing: 4 bits (<= 3GHz) or 8 bits (> 3GHz); first symbol indexes: {4,8,16,20} + 28\*n |
| caseC | 30 kHz subcarrier spacing: 4 bits (<= 3GHz) or 8 bits (> 3GHz); first symbol indexes: {2,8} + 14\*n |
| caseD | 120 kHz subcarrier spacing: 64 bits (> 6GHz); first symbol indexes: {4,8,16,20} + 28\*n |
| caseE | 240 kHz subcarrier spacing: 64 bits (> 6GHz); first symbol indexes: {8,12,16,20,32,36,40,44} + 56\*n |

NR\_SSB\_Beam\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SSB\_Beam\_Type** | | |
| **Comment** |  | | |
| SsbIndex | integer | opt | SSB index starting at 0 according to TS 38.213 clause 4.1 |
| Attenuation | integer | opt | Beam power: reference power for SSB transmissions relative to the actual reference cell power (MaxReferencePower - Attenuation of cell power);  the beam power is reduced by 'Attenuation' relative to the actual reference cell power;  the attenuation may be negative in which case the power level of the SSB transmission is higher than the actual cell power |

NR\_SSB\_BeamArray\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SSB\_BeamArray\_Type** |
| **Comment** |  |
| record of [NR\_SSB\_Beam\_Type](#NR_SSB_Beam_Type) | |

NR\_SSB\_BurstConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SSB\_BurstConfig\_Type** | | |
| **Comment** | To describe the SSB burst | | |
| BlockPattern | [NR\_SS\_BlockPattern\_Type](#NR_SS_BlockPattern_Type) | opt | case A..E according to 38.213 clause 4.1;  mandatory for initial configuration, "keep as it is" in case of omit otherwise |
| PositionsInBurst | [NR\_SSB\_PositionsInBurst\_Type](#NR_SSB_PositionsInBurst_Type) | opt | "SSB-transmitted" parameter as used by the UE to rate-match around SSBs acc. 38.214 cl. 5.1;  4, 8 or 64 bits;  mandatory for initial configuration, "keep as it is" in case of omit otherwise |
| BeamArray | [NR\_SSB\_BeamArray\_Type](#NR_SSB_BeamArray_Type) | opt | beam specific configuration:  if omit, all SSBs as configured in 'Bitmap' shall be transmitted with no attenuation (i.e. using the actual reference cell power);  if present only the SSBs contained in the array shall be transmitted (with beam power as according to their entry in the array);  when the array contains beams with an SSB index not included in 'Bitmap', the SS may raise an error |

NR\_SSB\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SSB\_EPREs\_Type** | | |
| **Comment** | EPRE for PBCH and related signals relative to the reference power (EPRE\_SSB#N) of an SSB (beam) given by SSB index N | | |
| PbchToDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | transmit power for resource elements (REs) being occupied by PBCH;  EPRE ratio of PBCH to PBCH DMRS |
| PssToSss | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | Primary synchronization signal; 38.211 clause 7.4.2.2;  EPRE ratio of PSS to SSS |
| SssToSsbBeam | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | Secondary synchronization signal; 38.211 clause 7.4.2.3;  EPRE ratio of SSS to EPRE\_SSB#N; in general the SSS power is the same as the reference beam power, i.e. SssToSsbBeam = 0dB |
| DmrsToSss | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | DM-RS associated to PBCH (Demodulation reference signals for PBCH; 38.211 clause 7.4.1.4);  EPRE ratio of PBCH DMRS to SSS |

NR\_SSB\_Config\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SSB\_Config\_Type** | | |
| **Comment** | Synchronization signals and PBCH; TS 38.211 clause 7.4.3, TS 38.300 clause 5.2.4;  NOTE:  SSB location in frequency domain is specified by NR\_CellConfigPhysicalLayerDownlink\_Type.FrequencyInfoDL.absoluteFrequencySSB | | |
| SubCarrierSpacing | SubcarrierSpacing | opt | sub-carrier spacing for SS/PBCH block (as specified by ServingCellConfigCommon.subcarrierSpacing in case of non-initial access):  According to comments for ServingCellConfigCommon.subcarrierSpacing "Only the values 15 or 30 kHz (<6GHz), 120 or 240 kHz (>6GHz) are applicable";  this corresponds to tables 13-1 .. 13.10 in TS 38.213 where only 15 or 30 kHz and 120 or 240 kHz are considered for SS/PBCH block sub-carrier spacing;  and it corresponds to 38.211 clause 7.4.3.1 defining SS/PBCH block type A as numerology=0,1 and type B as numerology=3,4 (i.e. there is no numerology=2 for SS/PBCH block)  NOTE 1:  in contrast to SS/PBCH block sub-carrier spacing the sub-carrier spacing for SIB1, Msg.2/4 for initial access and broadcast SI-messages is restricted to  15kHz or 30kHz for carrier frequency <= 6 GHz and 60kHz or 120kHz for carrier frequency > 6 GHz  (see comments for MIB.subCarrierSpacingCommon and TS 38.213 tables 13-1 .. 13.10)  NOTE 2:  As long as there is no sub-carrier spacing of 60kHz (numerology=2) for the SS/PBCH block acc. to TS 38.211 Table 4.2-1 there is no extended cyclic prefix either  (even though Table 4.2-1 is mainly for BWP there is no indication for any extended cyclic prefix for SS/PBCH block)  => there is no need to specify the cyclic prefix for SS/PBCH block configuration (normal cyclic prefix is assumed for all cases) |
| SubcarrierOffset | integer | opt | k\_SSB as defined in TS 38.211 clause 7.4.3.1;  needs to be consistent with absoluteFrequencySSB and absoluteFrequencyPointA as provided by FrequencyInfoDL to the UE and the SS |
| Periodicity | [NR\_SSB\_Periodicity\_Type](#NR_SSB_Periodicity_Type) | opt | in multiples of half frames (5ms) |
| HalfFrameOffset | integer | opt | to specify together the Periodicity the half-frames in which the SSB burst shall be transmitted:  - for Periodicity = 5ms  SSB burst in every half-frame  - for a Periodicity >= 5ms  SSB burst in frames with (SFN mod (Periodicity / 10)) = (HalfFrameOffset / 2) and in the  - lower half-frame for (HalfFrameOffset mod 2) = 0  - higher half-frame for (HalfFrameOffset mod 2) = 1  Depending on the Periodicity the HalfFrameOffset has a range of 0 .. ((Periodicity / 5) - 1)  Unless explicitly required by a test case the HalfFrameOffset is always 0 |
| BurstConfig | [NR\_SSB\_BurstConfig\_Type](#NR_SSB_BurstConfig_Type) | opt | to specify the burst configuration and a bitmap for the SS/PBCH block candidates which are eventually used for transmission of SS/PBCH blocks in a half frame |
| RelativeTxPower | [NR\_SSB\_EPREs\_Type](#NR_SSB_EPREs_Type) | opt | transmit power for PBCH and SS/PBCH signals  NOTE:  Parameter SS-PBCHBlockPower is provided to the UE in SIB1.ss-PBCH-BlockPower, ServingCellConfigCommon.ss-PBCH-BlockPower) as referenceSignalPower;  The UE uses referenceSignalPower to determine the transmission power of the PRACH (TS 38.213 clause 7.4)  => For signalling tests there seems to be no need to provide this parameter to the SS  (nevertheless the value provided to the UE shall not conflict with the power settings for the SSB at the SS) |

##### D.1.3.2.2.2 CSI\_Configuration

NR\_CSI\_RS\_Periodicity\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_CSI\_RS\_Periodicity\_Type** | |
| **Comment** | NOTE: may be extended with 'Aperiodic' branch if needed | |
| PeriodicityAndOffset | CSI\_ResourcePeriodicityAndOffset | periodicity and slot offset as used by NZP-CSI-RS-Resource for periodic and semi-persistent configuration;  the periodicity is given in the number of slots whereas CSI-RS-Resource-Mobility.slotConfig specifies the periodicity in millseconds  => to configure the CSI-RS configuration corresponding to CSI-RS-Resource-Mobility the periodicity needs to be converted in TTCN depending on the numerology |

NR\_NZP\_CSI\_RS\_Config\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_NZP\_CSI\_RS\_Config\_Type** | | |
| **Comment** | Channel-state information reference signal (CSI) according to TS 38.211 clause 7.4.1.5, TS 38.214 clause 5.1.6.1 and clause 5.2.2.3;  the UE may be configured with non-zero-power (NZP) CSI-RS by  a) NZP-CSI-RS-Resource (contained in CSI-MeasConfig) or  b) CSI-RS-Resource-Mobility (contained in MeasConfig)  (according to TS 38.211 clause 7.4.1.5.1) | | |
| ScramblingId | ScramblingId | opt | INTEGER(0..1023); Scrambling ID for CSI-RS as provided to the UE in NZP-CSI-RS-Resource.scramblingID or CSI-RS-Resource-Mobility.sequenceGenerationConfig |
| ResourceMapping | CSI\_RS\_ResourceMapping | opt | resource mapping as used in NZP-CSI-RS-Resource;  there is the following mapping with CSI-RS-CellMobility  - frequencyDomainAllocation:  For CSI-RS-Resource-Mobility there are row1 or row2 only  - nrofPorts:  One port for CSI-RS-Resource-Mobility (according to TS 38.211 Table 7.4.1.5.3-1 for Row=1 and Row=2)  - firstOFDMSymbolInTimeDomain (l0):  same for CSI-RS-ResourceMapping and CSI-RS-Resource-Mobility  - firstOFDMSymbolInTimeDomain2 (l1):  Not present for CSI-RS-Resource-Mobility (there is no l1 for Row=1 and Row=2 in Table 7.4.1.5.3-1 of TS 38.211)  - cdm-Type:  No CDM for CSI-RS-Resource-Mobility (according to Row=1 and Row=2 in Table 7.4.1.5.3-1 of TS 38.211)  - density:  ENUMERATED {d1,d3} for CSI-RS-CellMobility to be mapped to CHOICE (one, three) of CSI-RS-ResourceMapping  - freqBand:  According to TS 38.331  a) CSI-FrequencyOccupation specifies the frequency range for CSI-RS relative to a given BWP (CSI-ResourceConfig.bwp-id) whereas  b) CSI-RS-CellMobility specifies the position relative to point A (given by MeasObjectNR.refFreqCSI-RS)  => As there is no equivalent to CSI-ResourceConfig.bwp-id for variant b), 'OffsetToFreqBand' is used to fully specify the frequency range (see below) |
| OffsetToFreqBand | integer | opt | The frequency band for CSI-RS starts at OffsetToFreqBand + ResourceMapping.freqBand.startingRB from point A.  a) When the UE is configured with NZP-CSI-RS-Resource:  ResourceMapping.freqBand shall be set to the same value as signalled to the UE and OffsetToFreqBand shall be set offsetToCarrier + BWP.RB\_Start.  (NOTE: in general RB\_Start is 0 in BWP.locationAndBandwidth: i.e. BWP.RB\_Start=0 => OffsetToFreqBand = offsetToCarrier)  b) When the UE is configured with CSI-RS-CellMobility:  OffsetToFreqBand and ResourceMapping.freqBand.startingRB shall be set so that  OffsetToFreqBand + ResourceMapping.freqBand.startingRB = CSI-RS-CellMobility.csi-rs-MeasurementBW.startPRB.  (NOTE: In general it shall be  OffsetToFreqBand = offsetToCarrier and  ResourceMapping.freqBand.startingRB = CSI-RS-CellMobility.csi-rs-MeasurementBW.startPRB - offsetToCarrier) |
| Periodicity | [NR\_CSI\_RS\_Periodicity\_Type](#NR_CSI_RS_Periodicity_Type) | opt |  |
| Attenuation | integer | opt | Beam power: reference power for CSI-RS transmissions relative to the actual reference cell power (MaxReferencePower - Attenuation of cell power);  see NR\_SSB\_Beam\_Type |

NR\_NZP\_CSI\_RS\_ConfigList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_NZP\_CSI\_RS\_ConfigList\_Type** |
| **Comment** | Array with set of CSI reference signals; each CSI-RS may belong to a different beam |
| record of [NR\_NZP\_CSI\_RS\_Config\_Type](#NR_NZP_CSI_RS_Config_Type) | |

NR\_CSI\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_CSI\_Config\_Type** | |
| **Comment** | Primitive for configuration CSI at the SS  NOTE: further branches may be added e.g. to support CSI-IM | |
| CSI\_RS | [NR\_NZP\_CSI\_RS\_ConfigList\_Type](#NR_NZP_CSI_RS_ConfigList_Type) | Configuration of CSI reference signals:  Configuration of CSI reference signals does not necessarily mean that there is CSI reporting but CSI-RS is also needed for  - link monitoring (beam failure scenarios) and  - neighbouring cell measurement.  For these cases periodic CSI-RS is used and may be started immediately (TimingInfo=Now) or at a specific point in time with periodicity as specified by Periodicity.PeriodicityAndOffset.  Semi-persistent CSI-RS could be realised in the same way as periodic CSI-RS (but with specific TimingInfo).  Aperiodic CSI-RS is not considered so far  (NOTE: For simple cases of aperiodic CSI-RS NR\_CSI\_RS\_Periodicity\_Type may be extended with an 'Aperiodic' branch but e.g. combination of periodic and aperiodic CSI-RS would require a more complex approach, e.g. with explicit trigger for the transmission of the CSI-RS) |
| None | [Null\_Type](#Null_Type) |  |

##### D.1.3.2.2.3 Cell\_Level\_Configuration\_PDSCH

Cell\_Level\_Configuration\_PDSCH: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_PDSCH\_DMRS\_TypeA\_Position\_Type** | MIB.dmrs\_TypeA\_Position | same as ServingCellConfigCommon.dmrs-TypeA-Position |

NR\_PDSCH\_CellLevelConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDSCH\_CellLevelConfig\_Type** | | |
| **Comment** | cell-level parameters for PDSCH:  in contrast to BWP specific parameters the cell-level parameters apply to any PDSCH independent from the BWP a PDSCH is associated to | | |
| DMRS\_TypeA\_Position | [NR\_PDSCH\_DMRS\_TypeA\_Position\_Type](#NR_PDSCH_DMRS_TypeA_Position_Type) | opt | Provided to the UE by MIB.dmrs-TypeA-Position or ServingCellConfigCommon.dmrs-TypeA-Position;  dmrs-TypeA-Position defines position of the first DM-RS symbol in the sequence of DM-RS symbols according to TS 38.211 clause 7.4.1.1. |
| RateMatchPattern | [NR\_CellLevelRateMatchPattern\_Type](#NR_CellLevelRateMatchPattern_Type) | opt | rate match pattern according to TS 38.214 clause 5.1.4 |
| ServingCellConfig | [NR\_ASN1\_PDSCH\_ServingCellConfig\_Type](#NR_ASN1_PDSCH_ServingCellConfig_Type) | opt | PDSCH related parameters not being BWP-specific;  corresponds to ServingCellConfig.pdsch-ServingCellConfig |

NR\_RateMatchPatternList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RateMatchPatternList\_Type** |
| **Comment** |  |
| record of [NR\_ASN1\_RateMatchPattern\_Type](#NR_ASN1_RateMatchPattern_Type) | |

NR\_RateMatchPatternLteCrsList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RateMatchPatternLteCrsList\_Type** |
| **Comment** |  |
| record of [NR\_ASN1\_RateMatchPatternLTE\_CRS\_Type](#NR_ASN1_RateMatchPatternLTE_CRS_Type) | |

NR\_CellLevelRateMatchPattern\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellLevelRateMatchPattern\_Type** | | |
| **Comment** | configuration of rate match pattern on cell level (see TS 38.214 clause 5.1.4) | | |
| PatternList | [NR\_RateMatchPatternList\_Type](#NR_RateMatchPatternList_Type) | opt | up to 4 cell-level RateMatchPattern according to TS 38.214 clause 5.1.4 (L1 RateMatchPattern);  corresponds to ServingCellConfigCommon.rateMatchPatternToAddModList/rateMatchPatternToReleaseList;  empty list per default (i.e. at initial configuration) |
| PatternListLteCrs | [NR\_RateMatchPatternLteCrsList\_Type](#NR_RateMatchPatternLteCrsList_Type) | opt | 0 or 1 LTE CRS pattern to rate match around (see TS 38.214 clause 5.1.4.2)  corresponds to ServingCellConfigCommon.lte-CRS-ToMatchAround;  empty list per default (i.e. at initial configuration) |

##### D.1.3.2.2.4 Downlink\_BWP

NR\_DownlinkBWP\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DownlinkBWP\_Type** | | |
| **Comment** | Configuration of single BWP at the SS | | |
| Id | BWP\_Id | opt | Initial BWP: 0  Dedicated BWP: 1..4 |
| BWP | [NR\_ASN1\_BWP\_Type](#NR_ASN1_BWP_Type) | opt | Frequency domain location and bandwidth, subcarrier spacing, cyclic prefix |
| Pdcch | [NR\_BWP\_PDCCH\_Configuration\_Type](#NR_BWP_PDCCH_Configuration_Type) | opt |  |
| Pdsch | [NR\_BWP\_PDSCH\_Configuration\_Type](#NR_BWP_PDSCH_Configuration_Type) | opt |  |
| Sps | [NR\_ASN1\_SPS\_Config\_Type](#NR_ASN1_SPS_Config_Type) | opt | BWP-DownlinkDedicated.SPS-Config |

NR\_DownlinkBWP\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DownlinkBWP\_List\_Type** |
| **Comment** | configuration of BWPs: each entry shall have a distinct Id with ID=0 for the initial BWP;  NOTE 1:  Even though in general the BWP-Id corresponds to the index of the element within the array of BWPs, the SS shall not take this as assumption |
| record of [NR\_DownlinkBWP\_Type](#NR_DownlinkBWP_Type) | |

NR\_DownlinkBWPs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DownlinkBWPs\_Type** | | |
| **Comment** | configuration of downlink BWPs | | |
| ActiveBWP | BWP\_Id | opt | Id of the currently active BWP (this does not need to be the same as the index)  According to TS 38.211 clause 4.4.5:  "A UE can be configured with up to four carrier bandwidth parts in the downlink with a single downlink carrier bandwidth part being active at a given time.  The UE is not expected to receive PDSCH, PDCCH, CSI-RS, or TRS outside an active bandwidth part." |
| BwpArray | [NR\_DownlinkBWP\_List\_Type](#NR_DownlinkBWP_List_Type) | opt | array of band width parts: initial BWP + up to 4 dedicated BWPs |

SPS\_Config\_R16

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SPS\_Config\_R16** | | |
| **Comment** |  | | |
| sps\_ConfigToAddModList\_r16 | SPS\_ConfigToAddModList\_r16 | opt |  |
| sps\_ConfigToReleaseList\_r16 | SPS\_ConfigToReleaseList\_r16 | opt |  |
| sps\_ConfigDeactivationStateList\_r16 | SPS\_ConfigDeactivationStateList\_r16 | opt |  |

###### D.1.3.2.2.4.1 PDSCH\_Configuration

Configuration of PDSCH and its related reference signals:  
- DM-RS (Demodulation reference signal); TS 38.211 clause 7.4.1.1  
- PT-RS (Phase-tracking reference signals for PDSCH); TS 38.211 clause 7.4.1.2

NR\_BWP\_PDSCH\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BWP\_PDSCH\_Configuration\_Type** | | |
| **Comment** | PDSCH configuration at the SS for specific BWP | | |
| ConfigCommon | [NR\_ASN1\_PDSCH\_ConfigCommon\_Type](#NR_ASN1_PDSCH_ConfigCommon_Type) | opt |  |
| ConfigDedicated | [NR\_ASN1\_PDSCH\_Config\_Type](#NR_ASN1_PDSCH_Config_Type) | opt |  |
| RelativeTxPower | [NR\_PDSCH\_EPREs\_Type](#NR_PDSCH_EPREs_Type) | opt |  |

NR\_PDSCH\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDSCH\_EPREs\_Type** | | |
| **Comment** | EPRE for PDSCH and related signals | | |
| PdschToCell | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | transmit power relative to given reference cell power for resource elements (REs) being occupied by PDSCH |
| PdschToDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE power ratio of PDSCH to DM-RS being associated to the PDSCH according to TS 38.214 clause 4.1 |
| PdschToPtrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE power ratio of PDSCH to PT-RS being associated to the PDSCH according to TS 38.214 clause 4.1  NOTE:  PT-RS need only to be considered when being present (TS 38.211 clause 7.4.1.2.2 according to TS 38.214 clause 4.1),  i.e. the SS shall ignore the PT-RS's EPRE if no PT-RS is present |

###### D.1.3.2.2.4.2 PDCCH\_Configuration

Configuration of PDSCH and its related reference signals:  
- DM-RS (Demodulation reference signal); TS 38.211 clause 7.4.1.3

NR\_BWP\_PDCCH\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BWP\_PDCCH\_Configuration\_Type** | | |
| **Comment** | PDCCH configuration at the SS for specific BWP;  NOTE:  There are no fields for PDCCH-Config's "downlinkPreemption", "slotFormatIndicator", "tpc-PUSCH" and "tpc-PUCCH":  This information is related to triggering DCI formats 2\_X an shall be configured there (NR\_DCI\_Trigger\_Type) according to test case requirements | | |
| SearchSpaceArray | [NR\_BWP\_SearchSpaceList\_Type](#NR_BWP_SearchSpaceList_Type) | opt |  |
| CoresetArray | [NR\_BWP\_CoresetList\_Type](#NR_BWP_CoresetList_Type) | opt |  |
| RelativeTxPower | [NR\_PDCCH\_EPREs\_Type](#NR_PDCCH_EPREs_Type) | opt |  |
| Coreset0\_OffsetRBs | integer | opt | Number of Offset RBs as specified in 38.213 clause 13. Applied to CORESET#0 only |

NR\_BWP\_CoresetList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_BWP\_CoresetList\_Type** |
| **Comment** | list of CORESETs defined for a single BWP;  according to TS 38.213 clause 10.1 "The control resource set configured for Type0-PDCCH common search space has control resource set index 0"  NOTE: even though in general (array) index and controlResourceSetId are the same it is not clear what is meant by TS 38.213 |
| record of [NR\_ASN1\_ControlResourceSet\_Type](#NR_ASN1_ControlResourceSet_Type) | |

NR\_BWP\_SearchSpaceList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_BWP\_SearchSpaceList\_Type** |
| **Comment** | list of search spaces defined for a single BWP;  according to TS 38.213 clause 10.1 "The Type0-PDCCH common search space has search space index 0"  NOTE: even though in general (array) index and searchSpaceId are the same it is not clear what is meant by TS 38.213 |
| record of [NR\_BWP\_SearchSpaceConfig\_Type](#NR_BWP_SearchSpaceConfig_Type) | |

NR\_PDCCH\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCCH\_EPREs\_Type** | | |
| **Comment** | EPRE for PDCCH and related signals | | |
| PdcchToCell | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | transmit power relative to given reference cell power for resource elements (REs) being occupied by PDCCH |
| PdcchToDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE power ratio of PDCCH to DM-RS being associated to the PDCCH;  further DMRS parameters are given by ASN.1 PDCCH-Config as signalled to the UE or by additional parameters of the initial BWP configuration |

D.1.3.2.2.4.2.1 Search\_Space\_Configuration

Search\_Space\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SearchSpaceCandidatePriority\_Type** | [UInt\_Type](#UInt_Type) | Priorities to be considered by the SS in order to choose the candidate of a search space not colliding with the candidate of some other search space;  a value of 0 represents the highest priority, a value of 1 the second highest priority and so on.  (see TS 38.523-3 clause 7.1.2.1.4 for further details) |

NR\_SearchSpaceType\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_SearchSpaceType\_Type** |
| **Comment** | types of search spaces according to TS 38.213 clause 10.1;  NOTE 1: In principle there could be more than one instance for the same kind of search space;  if this is ever needed, this enumerated shall be enhanced by introduction of a second entry for a particular type.  NOTE 2: For the USS UL and DL are distinguished as they may need different priority in terms of scheduling of DCIs |
| cssType0 | Type0-PDCCH common search space for scheduling of SIB1 (SI-RNTI);  the SS shall scramble the DCI format's CRC with SI-RNTI;  aggregation level and number of candidates correspond to TS 38.213 Table 10.1-1;  For stand-alone options parameters of search space and associated CORESET are according MIB.pdcch-ConfigSIB1 (TS 38.213 clause 13) |
| cssType0A | Type0A-PDCCH common search space for scheduling of other system information (SI-RNTI);  the SS shall scramble the DCI format's CRC with SI-RNTI |
| cssType1 | Type1-PDCCH common search space for scheduling of Msg2 or Msg4 of RACH procedure;  the SS shall scramble the DCI format's CRC with RA-RNTI for Msg2 or with TC-RNTI for Msg4 (temporary C-RNTI) as configured for Msg4 (NR\_TempC\_RNTI\_Type in NR\_RAR\_Payload\_Type) |
| cssType2 | Type2-PDCCH common search space for scheduling of Paging messages or short messages (P-RNTI);  the SS shall scramble the DCI format's CRC with P-RNTI |
| cssType3 | Type3-PDCCH common search space for other purpose DCIs  (INT-RNTI, SFI-RNTI, TPC-PUSCH-RNTI, TPC-PUCCH-RNTI, TPC-SRS-RNTI, C-RNTI, CS-RNTI(s));  the SS shall scramble the DCI format's CRC with the RNTI-value as according to the ASP triggering the DCI to be sent |
| ussDL | UE-specific search space (C-RNTI, CS-RNTI(s));  the SS shall scramble the DCI format's CRC with the C-RNTI value as stored for the cell (NR\_CellConfigCommon\_Type) |
| ussUL | UE-specific search space: as USS\_DL but in general with lower priority to give DL assignments precedence over periodic UL grants |

NR\_SearchSpaceTypeAndPriority\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SearchSpaceTypeAndPriority\_Type** | | |
| **Comment** |  | | |
| Type | [NR\_SearchSpaceType\_Type](#NR_SearchSpaceType_Type) |  |  |
| CandidatePriority | [NR\_SearchSpaceCandidatePriority\_Type](#NR_SearchSpaceCandidatePriority_Type) |  | priority to be considered when candidates of a different or the same search space overlap the same CCEs |

NR\_SearchSpaceTypeAndPriorityList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SearchSpaceTypeAndPriorityList\_Type** |
| **Comment** |  |
| record of [NR\_SearchSpaceTypeAndPriority\_Type](#NR_SearchSpaceTypeAndPriority_Type) | |

NR\_PDCCH\_CCE\_AggregationLevel\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_PDCCH\_CCE\_AggregationLevel\_Type** |
| **Comment** | Aggregation level for a search space |
| AggregationLevel1 |  |
| AggregationLevel2 |  |
| AggregationLevel4 |  |
| AggregationLevel8 |  |
| AggregationLevel16 |  |

NR\_BWP\_SearchSpaceConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BWP\_SearchSpaceConfig\_Type** | | |
| **Comment** | configuration of a single search space at the SS:  The position of a particular search space candidate in frequency and time domain depends on configuration of the search space and its associated CORESET  (see TS 38.213 clause 10.1):  - Common or UE-specific search space  - aggregation level L  - number of candidates per aggregation level  - PDCCH monitoring periodicity and offset  - frequency domain resources  - number of symbols (time domain)  in addition in case of UE-specific search space:  - C-RNTI (as configured for the active cell)  - carrier indicator field value (in case of cross carrier scheduling)  all fields are mandatory as modification of a single field may cause inconsistencies | | |
| TypeAndPriorityList | [NR\_SearchSpaceTypeAndPriorityList\_Type](#NR_SearchSpaceTypeAndPriorityList_Type) |  | list of search space types (according to TS 38.213 clause 10.1) to be mapped to the given search space configuration.  NOTE 1:  In general the lists of search space types for different search spaces shall be mutual exclusive;  NOTE 2:  TS 38.213 clause 10.1 could be read as if the different types of search spaces use distinct instances of search spaces;  nevertheless RRC type definitions allow use of different types in one and the same search space |
| AggregationLevel | [NR\_PDCCH\_CCE\_AggregationLevel\_Type](#NR_PDCCH_CCE_AggregationLevel_Type) |  | aggregation level to be applied for an actual PDCCH of the given search space |
| SearchSpaceConfigAtUE | [NR\_ASN1\_SearchSpace\_Type](#NR_ASN1_SearchSpace_Type) |  | search space configuration as sent to the UE; contains searchSpaceId and controlResourceSetId referring to the associated CORESET;  furthermore the SS may need e.g. the number of candidates to detect error situations in context of candidate selection |

D.1.3.2.2.4.2.2 Search\_Space\_DCI\_Assignment

NR\_BWP\_Id\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_BWP\_Id\_List\_Type** |
| **Comment** |  |
| record of BWP\_Id | |

NR\_AssignedBWPs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_AssignedBWPs\_Type** | | |
| **Comment** | definition of a set of BWPs being assigned e.g. to system information scheduling or RACH procedures  NOTE 1: there is no error when e.g. "ActiveBWP" is set and the currently active BWP is contained in DedicatedBWPs too  NOTE 2: it is up to use of this type in TTCN to ensure that a specific BWP assignment makes sense, in most cases multiple BWPs may not be applicable | | |
| ActiveBWP | [Null\_Type](#Null_Type) | opt | SS shall assign the currently active BWP |
| InitialBWP | [Null\_Type](#Null_Type) | opt | SS shall assign the initial BWP |
| DedicatedBWPs | [NR\_BWP\_Id\_List\_Type](#NR_BWP_Id_List_Type) |  | SS shall assign all BWPs as listed (on top of active or initial BWP if set); an empty list indicates that no (additional) BWPs are assigned |

NR\_SearchSpaceDlDciAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SearchSpaceDlDciAssignment\_Type** | | |
| **Comment** | configuration of DCI for a specific search space;  in general the configuration belongs to a transport channel configuration (e.g. BCH, PCH, DL-SCH):  the DCI is applied for DL transmission on the respective channel and  can be explicitly initiated by TTCN (e.g. PCH, DL-SCH) or automatically by the SS (e.g. BCH or Msg2/Msg4 scheduling of RACH procedure);  all fields are mandatory for the first configuration of an instance for modifications "omit" means "keep as it is" | | |
| AssignedBWPs | [NR\_AssignedBWPs\_Type](#NR_AssignedBWPs_Type) | opt | BWP where given DCI shall be scheduled in given search space;  NOTE 1:  When there is no BWP according to configuration of AssignedBWPs, there is no DL assignment;  this can be used e.g. to prevent automatic scheduling of system information;  NOTE 2:  In principle a DL assignment can happen simultaneously in more than one BWP e.g. if system information shall be scheduled in active and initial BWP;  but as long as there is no use case for simultaneous DL assignments, configuration of AssignedBWPs shall be restricted to a maximum of one BWP |
| SearchSpaceType | [NR\_SearchSpaceType\_Type](#NR_SearchSpaceType_Type) | opt | search space to be used for sending of given DCI;  when at the scheduled point in time of a DL transmission there is no such search space configured at the given BWP, the SS may raise an error |
| DciInfo | [NR\_DciDlInfo\_Type](#NR_DciDlInfo_Type) | opt | DCI to be used |

NR\_SearchSpaceUlDciAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SearchSpaceUlDciAssignment\_Type** | | |
| **Comment** | configuration of DCI for UL grants in the UL USS;  in general the configuration belongs to a transport channel configuration (e.g. UL-SCH);  all fields are mandatory for the first configuration of an instance for modifications "omit" means "keep as it is" | | |
| AssignedBWPs | [NR\_AssignedBWPs\_Type](#NR_AssignedBWPs_Type) | opt | BWP where given DCI shall be scheduled in given search space;  AssignedBWPs shall specify exactly one BWP (ActiveBWP in general); the SS may raise an error otherwise |
| SearchSpaceType | [NR\_SearchSpaceType\_Type](#NR_SearchSpaceType_Type) | opt | search space to be used for sending of given DCI;  when at the scheduled point in time of a UL grant transmission there is no such search space configured at the given BWP, the SS may raise an error |
| DciInfo | [NR\_DciUlInfo\_Type](#NR_DciUlInfo_Type) | opt | DCI to be used |

#### D.1.3.2.3 PhysicalLayer\_Uplink

Uplink physical layer configuration: UL channels and BWPs

NR\_CellConfigPhysicalLayerUplink\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellConfigPhysicalLayerUplink\_Type** | | |
| **Comment** | physical layer configuration at the SS for the uplink of a cell | | |
| Uplink | [NR\_Uplink\_Type](#NR_Uplink_Type) | opt |  |
| SupplementaryUplink | [NR\_Uplink\_Type](#NR_Uplink_Type) | opt |  |
| TimingAdvance | [NR\_SS\_TimingAdvanceConfig\_Type](#NR_SS_TimingAdvanceConfig_Type) | opt |  |
| PUSCH\_ServingCellConfig | [NR\_ASN1\_PUSCH\_ServingCellConfig\_Type](#NR_ASN1_PUSCH_ServingCellConfig_Type) | opt |  |
| PUSCH\_ServingCellConfigSUL | [NR\_ASN1\_PUSCH\_ServingCellConfig\_Type](#NR_ASN1_PUSCH_ServingCellConfig_Type) | opt |  |

NR\_Uplink\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_Uplink\_Type** | |
| **Comment** |  | |
| Config | [NR\_UplinkConfig\_Type](#NR_UplinkConfig_Type) |  |
| None | [Null\_Type](#Null_Type) | in case the uplink or supplementary uplink is not used/needed |

NR\_SS\_TimingAdvanceConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SS\_TimingAdvanceConfig\_Type** | |
| **Comment** |  | |
| InitialValue | [NR\_RACH\_TimingAdvance\_Type](#NR_RACH_TimingAdvance_Type) | initial 12 bit value corresponding to Timing Advance Command field of the Random Access Response (TS 38.321 clause 6.2.3):  value of 0..3846 according to TS 38.213 clause 4.2; 0 in normal cases) |
| Relative | [NR\_TimingAdvanceIndex\_Type](#NR_TimingAdvanceIndex_Type) | timing advance command to adjust changes of timing advance acc. to TS 38.213 clause 4.2;  (range acc. 6 bit value: -31..32) |

##### D.1.3.2.3.1 Uplink\_BWP

NR\_UplinkBWP\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UplinkBWP\_Type** | | |
| **Comment** | Configuration of single BWP at the SS;  NOTE: for rel-15 this is the same as the ASN.1 type "BWP-Uplink" but nevertheless the TTCN type may be useful for future extensions | | |
| Id | BWP\_Id | opt | Initial BWP: 0  Dedicated BWP: 1..4 |
| Common | [NR\_ASN1\_BWP\_UplinkCommon\_Type](#NR_ASN1_BWP_UplinkCommon_Type) | opt | contains common configuration for RACH, PUSCH, PUCCH  configuration at the UE:  - Initial BWP:  -> ServingCellConfigCommon.uplinkConfigCommon.initialUplinkBWP  ServingCellConfigCommon.supplementaryUplinkConfig.initialUplinkBWP  -> SIB1.uplinkConfigCommon.initialUplinkBWP  SIB1.supplementaryUplink.uplinkConfigCommon.initialUplinkBWP  - Dedicated BWP:  -> ServingCellConfig.uplinkConfig.uplinkBWP-ToAddModList[-].bwp-Common  ServingCellConfig.supplementaryUplink.uplinkBWP-ToAddModList[-].bwp-Common |
| Dedicated | [NR\_ASN1\_BWP\_UplinkDedicated\_Type](#NR_ASN1_BWP_UplinkDedicated_Type) | opt | contains dedicated configuration for PUCCH, PUCCH, ConfiguredGrant, SRS, BeamFailureRecovery  configuration at the UE:  - Initial BWP:  -> ServingCellConfig.uplinkConfig.initialUplinkBWP  ServingCellConfig.supplementaryUplink.initialUplinkBWP  - Dedicated BWP:  -> ServingCellConfig.uplinkConfig.uplinkBWP-ToAddModList[-].bwp-Dedicated  ServingCellConfig.supplementaryUplink.uplinkBWP-ToAddModList[-].bwp-Dedicated |

NR\_UplinkBWP\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_UplinkBWP\_List\_Type** |
| **Comment** | configuration of BWPs: each entry shall have a distinct Id with ID=0 for the initial BWP  NOTE: Even though in general the BWP-Id corresponds to the index of the element within the array of BWPs, the SS shall not take this as assumption |
| record of [NR\_UplinkBWP\_Type](#NR_UplinkBWP_Type) | |

NR\_ActiveUplinkBWP\_Id\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ActiveUplinkBWP\_Id\_Type** | |
| **Comment** |  | |
| Explicit | BWP\_Id | in case that BWP-Id of active UL-BWP (and/or active UL-BWP of supplementary UL) is different than BWP-Id of active DL-BWP |
| SameIdAsDL | [Null\_Type](#Null_Type) | same BWP-Id as of the active DL-BWP |

NR\_UplinkBWPs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UplinkBWPs\_Type** | | |
| **Comment** | configuration of uplink BWPs | | |
| ActiveBWP | [NR\_ActiveUplinkBWP\_Id\_Type](#NR_ActiveUplinkBWP_Id_Type) | opt | Id of the currently active BWP (this does not need to be the same as the index) |
| BwpArray | [NR\_UplinkBWP\_List\_Type](#NR_UplinkBWP_List_Type) | opt | array of band width parts: initial BWP + up to 4 dedicated BWPs |

NR\_UplinkConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UplinkConfig\_Type** | | |
| **Comment** | configuration of a single uplink (uplink or supplementary uplink) | | |
| FrequencyInfoUL | [NR\_ASN1\_FrequencyInfoUL\_Type](#NR_ASN1_FrequencyInfoUL_Type) | opt | carries information about location of reference resource block (point A) in frequency domain  and about associated frequency bands (list of FreqBandIndicatorNR) |
| BWPs | [NR\_UplinkBWPs\_Type](#NR_UplinkBWPs_Type) | opt |  |
| RACH\_ConfigDedicated | [NR\_ASN1\_RACH\_ConfigDedicated\_Type](#NR_ASN1_RACH_ConfigDedicated_Type) | opt | configuration at the UE:  -> SpCellConfig.reconfigurationWithSync.rach-ConfigDedicated.uplink/supplementaryUplink |
| SI\_RequestConfig | [NR\_ASN1\_SI\_RequestConfig\_Type](#NR_ASN1_SI_RequestConfig_Type) | opt | configuration of PRACH preamble(s) and PRACH resource(s) for si-RequestConfig configuration at the UE: -> in SIB1.si-SchedulingInfo.si-RequestConfig |

#### D.1.3.2.4 DCI\_Configuration

Definitions for resource assignment and DCI according to TS 38.212 clause 7.3 and TS 38.214 clause 5.1.2 and 6.1.2

##### D.1.3.2.4.1 Common\_Fields

Common type definitions for DCI fields being used for UL and DL assignments (format 0\_X and 1\_X);  
NOTE: in general fields of DCIs are defined as union in the first place to allow backward compatible enhancements,  
e.g. when a dynamic SS behaviour needs to replace the static value assignment

NR\_DciCommon\_CarrierIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_CarrierIndicator\_Type** | |
| **Comment** | Carrier indicator field (CIF) of DCI formats 0\_1 and 1\_1 according to TS 38.212 and TS 38.213 clause 10.1 | |
| None | [Null\_Type](#Null_Type) | no cell index to be indicated in Carrier indicator field |
| CellIndex | [B3\_Type](#B3_Type) | 3 bits cell index to be indicated in Carrier indicator field; applicable when the UE is configured with higher layer parameter CrossCarrierSchedulingConfig |

NR\_DciCommon\_BWPIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_BWPIndicator\_Type** | |
| **Comment** | Bandwidth part indicator according to TS 38.212 Table 7.3.1.1.2-1; used to address RRC-configured BandwidthPart-Config;  NOTE:  in general the BWP configuration at the SS is static i.e. dedicated BWPs may be preconfigured in a test case preamble =>  a) BWP configuration at the SS is not always the same as at the UE and SS cannot determine the number of BWPs being configured at the UE from its BWP configuration.  b) The number and order of BWPs may differ at SS and UE.  c) The index used in the DCI's BWP indicator is not identical with the BWP-Id as the BWP indicator is the index in the UE's BWP array  => in general the SS cannot determine the size and value of the DCI's BWP indicator but this need to be done in TTCN | |
| Index | bitstring | 0, 1 or 2 bits |

NR\_DciCommon\_TpcCommand\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_TpcCommand\_Type** | |
| **Comment** | TPC Command Field according to TS 38.213 Table 7.1.1-1 and Table 7.2.1-1 | |
| Value | [B2\_Type](#B2_Type) | 2 bits; default value: '01'B (0 dB; accumulated TPC) |

NR\_DciCommon\_UL\_SUL\_Indicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_UL\_SUL\_Indicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.1/2: UL/SUL indicator | |
| None | [Null\_Type](#Null_Type) | to be used when no SUL is configured |
| Value | [B1\_Type](#B1_Type) | UL/SUL indicator according to TS 38.212 Table 7.3.1.1.1-1 |

NR\_DciCommon\_VrbPrbMapping\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_VrbPrbMapping\_Type** | |
| **Comment** | to specify how VRB-to-PRB mapping shall be controlled by DCI if applicable (see TS 38.212 Table 7.3.1.2.2-5 and where it is referred) | |
| None | [Null\_Type](#Null_Type) | 0 bit, applicable for format 1\_0 when only resource allocation type 0 is configured |
| Index | [B1\_Type](#B1_Type) | 1 bit, index in TS 38.212 Table 7.3.1.2.2-5 indicating non-interleaved or interleaved VRB-to-PRB mapping according to TS 38.211 clause 6.3.1.7 |

NR\_DciCommon\_TimeDomainResourceAssignment\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_TimeDomainResourceAssignment\_Type** | |
| **Comment** | Common type definition for UL/DL Resource allocation in time domain according to TS 38.214 clause 5.1.2.1 and 6.1.2.1 | |
| Index | bitstring | index of entry in SEQUENCE OF PUSCH/PDSCH-TimeDomainResourceAllocation provided e.g. by PUSCH/PDSCH-Config;  number of bits in a particular DCI depends on the size of the SEQUENCE OF PUSCH/PDSCH-TimeDomainResourceAllocation  (e.g. Time domain resource assignment is an empty bitstring (''B) when only one time-domain configuration is provided to the UE)  NOTE: PDSCH/PUSCH-Config overrules list in PDSCH/PUSCH-ConfigCommon |

NR\_DciFormat\_X\_1\_SrsRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_1\_SrsRequest\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2: SRS request | |
| SingleUL | [B2\_Type](#B2_Type) | 2 bits: Index of the SRS resource set to be used according to TS 38.212 Table 7.3.1.1.2-24 |
| UL\_SUL | [B3\_Type](#B3_Type) | 3 bits: Index of the SRS resource set to be used according to TS 38.212 Table 7.3.1.1.2-24 plus first bit to distinguish UL/SUL |

NR\_DciCommon\_DmrsSequenceInit\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_DmrsSequenceInit\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2 (format 0\_1), clause 7.3.1.1.3 (format 0\_2), clause 7.3.1.2.2 (format 1\_1) and clause 7.3.1.2.3 (format 1\_2): DMRS sequence initialization | |
| None | [Null\_Type](#Null_Type) | 0 bit  - for format 0\_1 if transform precoder is enabled;  - for format 0\_2 if dmrs-SequenceInitializationDCI-0-2 is not configured or if transform precoder is enabled;  - for format 1\_2 if dmrs-SequenceInitializationDCI-1-2 is not configured or if transform precoder is enabled |
| Value | [B1\_Type](#B1_Type) | 1 bit else |

NR\_DciCommon\_PriorityIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciCommon\_PriorityIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2 (format 0\_1), clause 7.3.1.2.2 (format 1\_1), clause 7.3.1.1.3 (format 0\_2) and clause 7.3.1.2.3 (format 1\_2): Priority indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit no Priority indicator, if higher layer parameter priorityIndicatorDCI-0-1/priorityIndicatorDCI-1-1/priorityIndicatorDCI-0-2/priorityIndicatorDCI-1-2 is not configured |
| Value | [B1\_Type](#B1_Type) | 1 bit as defined in Clause 9 in TS 38.213. |

NR\_DciFormat\_X\_1\_MinimumApplicableSchedulingOffset\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_1\_MinimumApplicableSchedulingOffset\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2 (format 0\_1) and clause 7.3.1.2.2 (format 1\_1): Minimum applicable scheduling offset indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit no Minimum applicable scheduling offset indicator |
| Value | [B1\_Type](#B1_Type) | 1 bit if minimumSchedulingOffsetK2(format 0\_1)/minimumSchedulingOffsetK0((format 1\_1)) is configured. Set according to TS 38.212 according to TS 38.212 Table 7.3.1.1.2-33. |

NR\_DciFormat\_X\_1\_SCellDormancyIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_1\_SCellDormancyIndication\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2 (format 0\_1) and clause 7.3.1.2.2 (format 1\_1): SCell dormancy indication | |
| None | [Null\_Type](#Null_Type) | 0 bit no SCell dormancy indication |
| Value | bitstring | 1, 2, 3, 4 or 5 bits: determined according to dormancyGroupWithinActiveTime parameter |

NR\_DciFormat\_X\_0\_ChannelAccessCPext\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_0\_ChannelAccessCPext\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.1 and clause 7.3.1.2.1: ChannelAccess-CPext | |
| None | [Null\_Type](#Null_Type) | 0 bit no ChannelAccess-CPext |
| Value | [B2\_Type](#B2_Type) | 2 bits indicating combinations of channel access type and CP extension as defined in TS 38.212 Table 7.3.1.1.1-4 for operation in a cell with shared spectrum channel access. |

NR\_DciFormat\_X\_2\_CarrierIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_2\_CarrierIndicator\_Type** | |
| **Comment** | Carrier indicator field (CIF) of DCI formats 0\_2 and 1\_2 according to TS 38.212 and TS 38.213 clause 10.1 | |
| None | [Null\_Type](#Null_Type) | no cell index to be indicated in Carrier indicator field |
| CellIndex | bitstring | 1, 2 or 3 bits cell index to be indicated in carrierIndicatorSize\_r16.carrierIndicatorSizeDCI\_1\_2\_r16/carrierIndicatorSize\_r16.carrierIndicatorSizeDCI\_0\_2\_r16 |

NR\_DciFormat\_X\_2\_SrsRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_X\_2\_SrsRequest\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.3 and clause 7.3.1.1.3: SRS Request | |
| None | [Null\_Type](#Null_Type) | srs-RequestDCI-0-2-r16/srs-RequestDCI-1-2-r16 is not present |
| Value | bitstring | 1 or 2 or 3 as defined in 7.3.1.2.3/7.3.1.1.3 |

##### D.1.3.2.4.2 Resource\_Allocation

Type definitions for resource allocation which do not correpond directly to DCI fields  
but are used to configure how the SS maintains resource allocation for a given DCI

Resource\_Allocation: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_ImcsValue\_Type** | integer (0..31) | Modulation and coding scheme index coding |
| **NR\_RedundancyVersion\_Type** | integer (0..255) | Redundancy Version (RV):  - 2 bits if the number of scheduled PUSCH indicated by the Time domain resource assignment field is 1  - 2, 3, 4, 5, 6, 7 or 8 bits determined by the maximum number of schedulable PUSCHs among all entries in pusch-TimeDomainAllocationListForMultiPUSCH (TS 38.212 clause 7.3.1.1.2). |

NR\_ResourceAllocationType\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_ResourceAllocationType\_Type** |
| **Comment** | to specify the format of the resource allocation type being used for frequency domain resource assignment in DCI;  NOTE 1:  For DCI Format 0\_0 and 1\_0 only resourceAllocationType1 is applicable (TS 38.214 clause 5.1.2.2 and 6.1.2.2)  NOTE 2:  The SS needs to determine based on RRC configuration whether MSB of the frequency domain resource assignment needs to be used as discriminator for type 0/1  (see TS 38.212 clause 7.3.1.1.2 and clause 7.3.1.2.2 and PUSCH/PDSCH-Config.resourceAllocation)  NOTE 3:  The SS shall raise an error if the DCI configuration conflicts with the configuration given by PUSCH/PDSCH-Config.resourceAllocation |
| resourceAllocationType0 | resource allocation type 0 according to TS 38.214 clause 5.1.2.2.1 and 6.1.2.2.1:  bitmap indicating the Resource Block Groups (RBGs) that are allocated;  not applicable for DCI Format 0\_0 and 1\_0 |
| resourceAllocationType1 | resource allocation type 1 according to TS 38.214 clause 5.1.2.2.2 and 6.1.2.2.2:  resource indication value (RIV) corresponding to a starting virtual resource block and a length in terms of contiguously allocated resource blocks |

NR\_ModulationSchemePDSCH\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_ModulationSchemePDSCH\_Type** |
| **Comment** | Supported modulation schemes for PDSCH according to 38.211 Table 7.3.1.2-1 |
| qpsk |  |
| qam16 |  |
| qam64 |  |
| qam256 |  |

NR\_FreqDomainSchedulExplicit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_FreqDomainSchedulExplicit\_Type** | | |
| **Comment** | type used for explicit DL scheduling; Nprb is the exact number of RBs whereas in NR\_FreqDomainSchedulCommon\_Type MaxRbCnt is the upper bound | | |
| FirstRbIndex | integer |  | index of the first resource block in frequency domain |
| Nprb | integer |  | number of resource blocks to be assigned |

NR\_FreqDomainSchedulCommonDL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_FreqDomainSchedulCommonDL\_Type** | | |
| **Comment** | common type to specify restrictions for frequency domain scheduling by a start index and a maximum range of RBs  (similar to EUTRA, but for NR in general the frequency domain scheduling is not related to the whole frequency band but to a given band width part (BWP) | | |
| FirstRbIndex | integer |  | index of the first (virtual) resource block in frequency domain |
| MaxRbCnt | integer |  | maximum number of resource-blocks to be used for a transport block;  SS shall not assigned more than the given resource blocks;  FirstRbIndex + MaxRbCnt shall not exceed the total number of available resoource blocks in frequency domain; the SS shall raise an error otherwise |

NR\_FreqDomainResourceAssignmentDL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_FreqDomainResourceAssignmentDL\_Type** | |
| **Comment** |  | |
| Automatic | [NR\_FreqDomainSchedulCommonDL\_Type](#NR_FreqDomainSchedulCommonDL_Type) | The SS shall automatically do the resource assignment needed for a DL transmission based on TBS evaluation guideline given in Annex B.1 of 38.523-3 |
| Explicit | [NR\_FreqDomainSchedulExplicit\_Type](#NR_FreqDomainSchedulExplicit_Type) | Frequency domain resource assignment is given explicitly by TTCN;  the SS needs to calculate the RIV (resource allocation type 1) or generate the bitmap (resource allocation type 0).  In case of resource allocation type 0 the allocation shall also be in consecutive RBGs.  NOTE: So far there is no requirement for signalling tests to use non-consecutive RBGs ((neither for LTE nor for NR) |

NR\_RedundancyVersionList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RedundancyVersionList\_Type** |
| **Comment** | There shall be as many entries in the list as re-transmissions are allowed;  if there are not enough elements specified SS shall raise an error;  In 4G at least in UL the array length corresponds to maxHARQ-Tx (i.e. up to 28 re-transmissions according to RRC ASN.1) |
| record of [NR\_RedundancyVersion\_Type](#NR_RedundancyVersion_Type) | |

NR\_TransportBlockSchedulingDL\_Automatic\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_TransportBlockSchedulingDL\_Automatic\_Type** | | |
| **Comment** | transport block information for a DL transmission and potential retransmission in automatic mode | | |
| TransportBlock1 | [NR\_ModulationSchemePDSCH\_Type](#NR_ModulationSchemePDSCH_Type) |  |  |
| TransportBlock2 | [NR\_ModulationSchemePDSCH\_Type](#NR_ModulationSchemePDSCH_Type) | opt | MCS for 2nd transport block (if any); 'omit' means that there is no 2nd transport block;  presence corresponds to PDSCH-Config.maxNrofCodeWordsScheduledByDCI |
| RedundancyVersionList | [NR\_RedundancyVersionList\_Type](#NR_RedundancyVersionList_Type) | opt | list of Redundancy versions to be used for DL transmission and possible retransmissions;  not present, if the DL transmission does not make use of harq processing (e.g. paging);  in automatic mode the same list of redundancy versions is used for both transport blocks;  if there are not enough elements to achieve successful DL transmission, SS shall raise an error |

RetransmissionTiming\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **RetransmissionTiming\_Type** | |
| **Comment** | to specify the timing of potential retransmissions related to the initial transmission.  Rules in case of necessary UL or DL retransmissions:  - When a transmission is scheduled with TimingInfo=Now, then any retransmission of a previous transmission takes precedence over the new transmission  - Re-transmissions take precedence over periodic UL grants  - The SS shall raise an error indication when  - a retransmission collides with another UL or DL transmisssion which is scheduled by TTCN with specific TimingInfo for the same slot as the retransmssion  - a new DL transmission would take over an ongoing DL transmission  - the retransmission is not possible at the given time for any other reason (e.g. due to slot format) | |
| SlotOffset | integer | the kth retransmission shall be k \* SlotOffset slots after the initial transmission:  e.g. slots per subframe = N and initial transmission at subframeX and slotX =>  1. retransmission at subframeX + (slotX + SlotOffset) / N and (slotX + SlotOffset) mod N  2. retransmission at subframeX + (slotX + 2\*SlotOffset) / N and (slotX + 2\*SlotOffset) mod N  and so on |
| SubframeOffset | integer | the kth retransmission shall be k \* SubframeOffset subframes after the initial transmission in the same slot of subframe as for the initial transmission:  e.g. initial transmission at subframeX and slotX  1. retransmission at subframeX + SubframeOffset and slotX  2. retransmission at subframeX + 2\*SubframeOffset and slotX  and so on |
| AnyTime | [Null\_Type](#Null_Type) | the SS shall autonomuously determine the next possible Ocassion for the retransmission |

TransmissionTimingOffset\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TransmissionTimingOffset\_Type** | |
| **Comment** | Timing information for retransmissions | |
| None | [Null\_Type](#Null_Type) | initial transmission: no timing offset but timing info as according to common part of the ASP |
| Retransmission | [RetransmissionTiming\_Type](#RetransmissionTiming_Type) | retransmission with timing offset relative to initial transmission |

NR\_TransportBlockSingleTransmission\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_TransportBlockSingleTransmission\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.1 and 7.3.1.2.2: parameters for transmission (or re-transmission) of a single transport block;  used for explicit mode of DL transmission and for UL grants | | |
| TimingOffset | [TransmissionTimingOffset\_Type](#TransmissionTimingOffset_Type) |  | in general "None" in case of a new transmission (i.e. no timing offset) and "Retransmission" for any retransmission |
| ImcsValue | [NR\_ImcsValue\_Type](#NR_ImcsValue_Type) |  | Imcs value to be mapped to the Modulation and coding scheme field of DCI format 1\_0 or 1\_1 |
| RedundancyVersion | [NR\_RedundancyVersion\_Type](#NR_RedundancyVersion_Type) |  | Redundancy version for a single transmission or re-transmission |
| ToggleNDI | boolean |  | "true" for transmission of a new transport block, "false" for a re-transmission;  the NDI (New data indicator) itself is maintained by the SS and therefore not provided as configuration parameter |

NR\_TransportBlockRetransmissionList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_TransportBlockRetransmissionList\_Type** |
| **Comment** | list of (initial) transmission and potential retransmissions;  used for explicit mode of DL transmission and for UL grants;  in general the Imcs is the same for all (re-)transmissions and the NDI is not toggled for the retransmissions |
| record of [NR\_TransportBlockSingleTransmission\_Type](#NR_TransportBlockSingleTransmission_Type) | |

NR\_TransportBlockSchedulingDL\_Explicit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_TransportBlockSchedulingDL\_Explicit\_Type** | | |
| **Comment** |  | | |
| TransportBlock1 | [NR\_TransportBlockRetransmissionList\_Type](#NR_TransportBlockRetransmissionList_Type) |  | list of transmission and retransmissions for transport block 1 |
| TransportBlock2 | [NR\_TransportBlockRetransmissionList\_Type](#NR_TransportBlockRetransmissionList_Type) | opt | 'omit' means that there is no 2nd transport block;  Presence corresponds to PDSCH-Config.maxNrofCodeWordsScheduledByDCI |

NR\_TransportBlockSchedulingDL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_TransportBlockSchedulingDL\_Type** | |
| **Comment** |  | |
| Automatic | [NR\_TransportBlockSchedulingDL\_Automatic\_Type](#NR_TransportBlockSchedulingDL_Automatic_) |  |
| Explicit | [NR\_TransportBlockSchedulingDL\_Explicit\_Type](#NR_TransportBlockSchedulingDL_Explicit_T) |  |

NR\_HarqProcessConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_HarqProcessConfig\_Type** | |
| **Comment** | HARQ processes to be used automatically for UL grants or DL assignments | |
| None | [Null\_Type](#Null_Type) | when there is no HARQ for the given DCI (paging) |
| Broadcast | [Null\_Type](#Null_Type) | when the broadcast process shall be used |
| AnyProcess | [Null\_Type](#Null_Type) | The SS may choose any process for scheduling of the UL/DL data transfer |
| SpecificSubset | [NR\_HarqProcessList\_Type](#NR_HarqProcessList_Type) | only the HARQ processes of this list shall be used automatically, other processes are excluded from automatic assignments;  nevertheless for DL any HARQ processes may be addressed explicitly by NR\_DRB\_DataPerSlot\_DL\_Type.HarqProcess |

##### D.1.3.2.4.3 PDSCH\_Scheduling

NR\_DciDlInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciDlInfo\_Type** | | |
| **Comment** | scheduling for CCCH/DCCH/DTCH mapped to DL-SCH mapped to PDSCH;  for all parameters: mandatory for initial configuration of an instance, omit means "keep as it is" afterwards;  definition is applicable for DCI format 1\_X | | |
| ResoureAssignment | [NR\_DciFormat\_1\_X\_ResourceAssignment\_Type](#NR_DciFormat_1_X_ResourceAssignment_Type) | opt | resource assignment; to control setting of the following fields in DCI formats 1\_X (TS 38.212 clause 7.3.1.2.X):  Frequency domain resource assignment  Time domain resource assignment  Modulation and coding scheme  New data indicator  Redundancy version  HARQ process number |
| VrbPrbMapping | [NR\_DciCommon\_VrbPrbMapping\_Type](#NR_DciCommon_VrbPrbMapping_Type) | opt | VRB-to-PRB mapping |
| Format | [NR\_DciFormat\_1\_X\_SpecificInfo\_Type](#NR_DciFormat_1_X_SpecificInfo_Type) | opt | DCI format and DCI format specific parameters |

NR\_DciFormat\_1\_X\_ResourceAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_X\_ResourceAssignment\_Type** | | |
| **Comment** | Common definition to be used for resource scheduling in DL | | |
| ResourceAllocationType | [NR\_ResourceAllocationType\_Type](#NR_ResourceAllocationType_Type) | opt | resource allocation type to be used for the frequency domain resource assignment |
| FreqDomain | [NR\_FreqDomainResourceAssignmentDL\_Type](#NR_FreqDomainResourceAssignmentDL_Type) | opt |  |
| TimeDomain | [NR\_DciCommon\_TimeDomainResourceAssignment\_Type](#NR_DciComm__TimeDomainResourceAssignment) | opt |  |
| TransportBlockScheduling | [NR\_TransportBlockSchedulingDL\_Type](#NR_TransportBlockSchedulingDL_Type) | opt | information about MCS and RV for one or two transport blocks |
| HarqProcessConfig | [NR\_HarqProcessConfig\_Type](#NR_HarqProcessConfig_Type) | opt | configures which HARQ processes the SS may use;  corresponds to "HARQ process number" in TS 38.212 clause 7.3.1.2.1 and 7.3.1.2.2 |

NR\_DciFormat\_1\_X\_SpecificInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_SpecificInfo\_Type** | |
| **Comment** |  | |
| Format\_1\_0 | [NR\_DciFormat\_1\_0\_SpecificInfo\_Type](#NR_DciFormat_1_0_SpecificInfo_Type) |  |
| Format\_1\_0\_P\_RNTI | [NR\_DciFormat\_1\_0\_P\_RNTI\_SpecificInfo\_Type](#NR_DciFormat_1_0_P_RNTI_SpecificInfo_Typ) |  |
| Format\_1\_0\_SI\_RNTI | [NR\_DciFormat\_1\_0\_SI\_RNTI\_SpecificInfo\_Type](#NR_DciFormat_1_0_SI_RNTI_SpecificInfo_Ty) |  |
| Format\_1\_0\_RA\_RNTI | [NR\_DciFormat\_1\_0\_RA\_RNTI\_SpecificInfo\_Type](#NR_DciFormat_1_0_RA_RNTI_SpecificInfo_Ty) |  |
| Format\_1\_1 | [NR\_DciFormat\_1\_1\_SpecificInfo\_Type](#NR_DciFormat_1_1_SpecificInfo_Type) |  |
| Format\_1\_2 | [NR\_DciFormat\_1\_2\_SpecificInfo\_Type](#NR_DciFormat_1_2_SpecificInfo_Type) |  |

NR\_DciFormat\_1\_0\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_0\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: scheduling of PDSCH in one DL cell; default parameters according to TS 38.508-1 clause 4.3.6.1.2.1 | | |
| DAI | [NR\_DciFormat\_1\_0\_DAI\_Type](#NR_DciFormat_1_0_DAI_Type) | opt | downlink assignment index |
| TpcCommandPucch | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) | opt | TPC command for scheduled PUCCH; to be set to 1 per default (0 dB; accumulated TPC) |
| PucchResourceIndicator | [NR\_DciFormat\_1\_X\_PucchResourceIndicator\_Type](#NR_DciFormat_1_X_PucchResourceIndicator_) | opt | PUCCH resource indicator |
| PdschHarqTimingIndicator | [NR\_DciFormat\_1\_X\_PdschHarqTimingIndicator\_Type](#NR_DciForm__1_X_PdschHarqTimingIndicator) | opt | PDSCH-to-HARQ\_feedback timing indicator |
| ChannelAccessCPext | [NR\_DciFormat\_X\_0\_ChannelAccessCPext\_Type](#NR_DciFormat_X_0_ChannelAccessCPext_Type) | opt | ChannelAccess-CPext |

NR\_DciFormat\_1\_0\_P\_RNTI\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_0\_P\_RNTI\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: scheduling of PDSCH with DCI scrambled by P-RNTI; default parameters according to TS 38.508-1 clause 4.3.6.1.2.1 | | |
| ShortMessageIndicator | [B2\_Type](#B2_Type) | opt | Short Message Indicator according to TS 38.212 Table 7.3.1.2.1-1 |
| ShortMessages | [B8\_Type](#B8_Type) | opt | Short Messages according to TS 38.331 Table 6.5-1 |
| TbScaling | [B2\_Type](#B2_Type) | opt | Scaling factor according to TS 38.214 Table 5.1.3.2-2 |

NR\_DciFormat\_1\_0\_SI\_RNTI\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_0\_SI\_RNTI\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: scheduling of PDSCH with DCI scrambled by SI-RNTI; default parameters according to TS 38.508-1 clause 4.3.6.1.2.1 | | |
| SystemInfoIndicator | [B1\_Type](#B1_Type) | opt | System information indicator according to TS 38.212 Table 7.3.1.2.1-2 |

NR\_DciFormat\_1\_0\_RA\_RNTI\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_0\_RA\_RNTI\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: scheduling of PDSCH with DCI scrambled by RA-RNTI; default parameters according to TS 38.508-1 clause 4.3.6.1.2.1.  FFS whether this is applicable to MsgB-RNTI | | |
| TbScaling | [B2\_Type](#B2_Type) | opt | Scaling factor according to TS 38.214 Table 5.1.3.2-2 |
| LSBsOfSFN | [NR\_DciFormat\_1\_0\_LSBsOfSFN\_Type](#NR_DciFormat_1_0_LSBsOfSFN_Type) | opt | LSBs of SFN |

NR\_DciFormat\_1\_1\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_1\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: scheduling of PDSCH in one cell; default parameters according to TS 38.508-1 clause 4.3.6.1.2.2  For all fields: 'omit' means that the information shall not be contained in the DCI on PDCCH | | |
| CarrierIndicator | [NR\_DciCommon\_CarrierIndicator\_Type](#NR_DciCommon_CarrierIndicator_Type) | opt | Carrier indicator - CIF value for Cross Carrier Scheduling; 'None' otherwise |
| BWPIndicator | [NR\_DciCommon\_BWPIndicator\_Type](#NR_DciCommon_BWPIndicator_Type) | opt | Bandwidth part indicator |
| PrbBundlingSizeIndicator | [NR\_DciFormat\_1\_X\_PrbBundlingSizeIndicator\_Type](#NR_DciForm__1_X_PrbBundlingSizeIndicator) | opt | PRB bundling size indicator |
| RateMatchingIndicator | [NR\_DciFormat\_1\_X\_RateMatchingIndicator\_Type](#NR_DciFormat_1_X_RateMatchingIndicator_T) | opt | Rate matching indicator |
| ZP\_CSI\_RS\_Trigger | [NR\_DciFormat\_1\_X\_ZP\_CSI\_RS\_Trigger\_Type](#NR_DciFormat_1_X_ZP_CSI_RS_Trigger_Type) | opt | ZP CSI-RS trigger |
| DAI | [NR\_DciFormat\_1\_1\_DAI\_Type](#NR_DciFormat_1_1_DAI_Type) | opt | downlink assignment index |
| TpcCommandPucch | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) | opt | TPC command for scheduled PUCCH; to be set to 1 per default (0 dB; accumulated TPC) |
| PucchResourceIndicator | [NR\_DciFormat\_1\_X\_PucchResourceIndicator\_Type](#NR_DciFormat_1_X_PucchResourceIndicator_) | opt | PUCCH resource indicator |
| PdschHarqTimingIndicator | [NR\_DciFormat\_1\_X\_PdschHarqTimingIndicator\_Type](#NR_DciForm__1_X_PdschHarqTimingIndicator) | opt | PDSCH-to-HARQ\_feedback timing indicator |
| OneShotHarqAckRequest | [NR\_DciFormat\_1\_1\_OneShotHarqAckRequest\_Type](#NR_DciFormat_1_1_OneShotHarqAckRequest_T) | opt | One-shot HARQ-ACK request |
| PdschGroupIndex | [NR\_DciFormat\_1\_1\_PdschGroupIndex\_Type](#NR_DciFormat_1_1_PdschGroupIndex_Type) | opt | PDSCH group index |
| NewFeedbackIndicator | [NR\_DciFormat\_1\_1\_NewFeedbackIndicator\_Type](#NR_DciFormat_1_1_NewFeedbackIndicator_Ty) | opt | New feedback indicator |
| NumberRequestedPdschGroup | [NR\_DciFormat\_1\_1\_NumberRequestedPdschGroup\_Type](#NR_DciForm___1_NumberRequestedPdschGroup) | opt | Number of requested PDSCH group |
| AntennaPorts | [NR\_DciFormat\_1\_1\_AntennaPorts\_Type](#NR_DciFormat_1_1_AntennaPorts_Type) | opt | Antenna port(s) |
| TCI | [NR\_DciFormat\_1\_1\_TCI\_Type](#NR_DciFormat_1_1_TCI_Type) | opt | Transmission configuration indication |
| SrsRequest | [NR\_DciFormat\_X\_1\_SrsRequest\_Type](#NR_DciFormat_X_1_SrsRequest_Type) | opt | SRS request |
| CBGTI | [NR\_DciFormat\_1\_1\_CBGTI\_Type](#NR_DciFormat_1_1_CBGTI_Type) | opt | CBG transmission information (CBGTI) |
| CBGFI | [NR\_DciFormat\_1\_1\_CBGFI\_Type](#NR_DciFormat_1_1_CBGFI_Type) | opt | CBG flushing out information (CBGFI) |
| DmrsSequenceInit | [NR\_DciCommon\_DmrsSequenceInit\_Type](#NR_DciCommon_DmrsSequenceInit_Type) | opt | DMRS sequence initialization |
| PriorityIndicator | [NR\_DciCommon\_PriorityIndicator\_Type](#NR_DciCommon_PriorityIndicator_Type) | opt | Priority indicator |
| ChannelAccessCPext | [NR\_DciFormat\_1\_1\_ChannelAccessCPext\_Type](#NR_DciFormat_1_1_ChannelAccessCPext_Type) | opt | ChannelAccess-CPext |
| MinimumApplicableSchedulingOffset | [NR\_DciFormat\_X\_1\_MinimumApplicableSchedulingOffset\_Type](#NR_DciForm__umApplicableSchedulingOffset) | opt | Minimum applicable scheduling offset indicator |
| SCellDormancyIndication | [NR\_DciFormat\_X\_1\_SCellDormancyIndication\_Type](#NR_DciFormat_X_1_SCellDormancyIndication) | opt | SCell dormancy indication |

NR\_DciFormat\_1\_2\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_1\_2\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2.3: scheduling of PDSCH in one cell; default parameters according to TS 38.508-1 clause 4.3.6.1.2.3.  For all fields: 'omit' means that the information shall not be contained in the DCI on PDCCH | | |
| CarrierIndicator | [NR\_DciFormat\_X\_2\_CarrierIndicator\_Type](#NR_DciFormat_X_2_CarrierIndicator_Type) | opt | Carrier indicator - CIF value for Cross Carrier Scheduling; 'None' otherwise |
| BWPIndicator | [NR\_DciCommon\_BWPIndicator\_Type](#NR_DciCommon_BWPIndicator_Type) | opt | Bandwidth part indicator |
| PrbBundlingSizeIndicator | [NR\_DciFormat\_1\_X\_PrbBundlingSizeIndicator\_Type](#NR_DciForm__1_X_PrbBundlingSizeIndicator) | opt | PRB bundling size indicator |
| RateMatchingIndicator | [NR\_DciFormat\_1\_X\_RateMatchingIndicator\_Type](#NR_DciFormat_1_X_RateMatchingIndicator_T) | opt | Rate matching indicator |
| ZP\_CSI\_RS\_Trigger | [NR\_DciFormat\_1\_X\_ZP\_CSI\_RS\_Trigger\_Type](#NR_DciFormat_1_X_ZP_CSI_RS_Trigger_Type) | opt | ZP CSI-RS trigger |
| DAI | [NR\_DciFormat\_1\_2\_DAI\_Type](#NR_DciFormat_1_2_DAI_Type) | opt | downlink assignment index |
| TpcCommandPucch | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) | opt | TPC command for scheduled PUCCH; to be set to 1 per default (0 dB; accumulated TPC) |
| PucchResourceIndicator | [NR\_DciFormat\_1\_2\_PucchResourceIndicator\_Type](#NR_DciFormat_1_2_PucchResourceIndicator_) | opt | PUCCH resource indicator |
| PdschHarqTimingIndicator | [NR\_DciFormat\_1\_X\_PdschHarqTimingIndicator\_Type](#NR_DciForm__1_X_PdschHarqTimingIndicator) | opt | PDSCH-to-HARQ\_feedback timing indicator |
| AntennaPorts | [NR\_DciFormat\_1\_2\_AntennaPorts\_Type](#NR_DciFormat_1_2_AntennaPorts_Type) | opt | Antenna port(s) |
| TCI | [NR\_DciFormat\_1\_2\_TCI\_Type](#NR_DciFormat_1_2_TCI_Type) | opt | Transmission configuration indication |
| SrsRequest | [NR\_DciFormat\_X\_2\_SrsRequest\_Type](#NR_DciFormat_X_2_SrsRequest_Type) | opt | SRS request |
| DmrsSequenceInit | [NR\_DciCommon\_DmrsSequenceInit\_Type](#NR_DciCommon_DmrsSequenceInit_Type) | opt | DMRS sequence initialization |
| PriorityIndicator | [NR\_DciCommon\_PriorityIndicator\_Type](#NR_DciCommon_PriorityIndicator_Type) | opt | Priority indicator |

NR\_DciFormat\_1\_X\_PucchResourceIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_PucchResourceIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.1/2: PUCCH resource indicator | |
| Value | [B3\_Type](#B3_Type) | 3 bits as defined in TS 38.213 clause 9.2.3 or reserved bits;  index to "PUCCH-ResourceSet" according to 38.213 clause 9.2.3 as provided by PUCCH-Config |

NR\_DciFormat\_1\_X\_PdschHarqTimingIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_PdschHarqTimingIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.1/2: PDSCH-to-HARQ\_feedback timing indicator (TS 38.213 clause 9.2.3) | |
| Value | bitstring | Format 1\_0: 3 bits, addresses one of {1, 2, 3, 4, 5, 6, 7, 8} according to TS 38.213 clause 9.2.3;  Format 1\_1: 0..3 bits, addresses entry in table provided by PUCCH-Config.dl-DataToUL-ACK |

NR\_DciFormat\_1\_0\_DAI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_0\_DAI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: DAI (downlink assignment indicator) | |
| Index | [DAI\_B2\_Type](#DAI_B2_Type) | 2 bits according to TS 38.213 clause 9.1.3 or reserved bits |

NR\_DciFormat\_1\_0\_LSBsOfSFN\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_0\_LSBsOfSFN\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.1: LSBs of SFN | |
| None | [Null\_Type](#Null_Type) | no LSBs of SFN |
| Automatic | [Null\_Type](#Null_Type) | LSBs of SFN automatically assigned by SS; 2 bits |

NR\_DciFormat\_1\_X\_PrbBundlingSizeIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_PrbBundlingSizeIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.X: PRB bundling size indicator | |
| None | [Null\_Type](#Null_Type) | no PRB bundling |
| Dynamic | [B1\_Type](#B1_Type) | when PDSCH-Config.prb-BundlingType is set to 'dynamicBundling';  indicates which set of PRG values to be used (see 38.214 clause 5.1.2.3) |

NR\_DciFormat\_1\_X\_RateMatchingIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_RateMatchingIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.X: Rate matching indicator;  rateMatchPatternGroup1/rateMatchPatternGroup1DCI-1-2 and rateMatchPatternGroup2/rateMatchPatternGroup2DCI-1-2 configured by PDSCH-Config | |
| Bitmap | bitstring | 0, 1, or 2 bits: bitmap indicating rateMatchPatternGroup1/rateMatchPatternGroup1DCI-1-2 and/or rateMatchPatternGroup2/rateMatchPatternGroup2DCI-1-2 to be applied  size depending on whether rateMatchPatternGroup1/rateMatchPatternGroup1DCI-1-2, rateMatchPatternGroup2/rateMatchPatternGroup2DCI-1-2 or both are configured by PDSCH-Config at the UE |

NR\_DciFormat\_1\_X\_ZP\_CSI\_RS\_Trigger\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_X\_ZP\_CSI\_RS\_Trigger\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.X: ZP CSI-RS trigger | |
| Index | bitstring | 0, 1, or 2 bits: Index in list of ZP-CSI-RS-Resource as configured by PDSCH-Config at the UE |

NR\_DciFormat\_1\_1\_DAI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_DAI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: DAI (downlink assignment indicator)  - 6 bits if more than one serving cell are configured in the DL and the higher layer parameter NFI-TotalDAI-Included-r16 = enable  - 4 bits if only one serving cell are configured in the DL and the higher layer parameter NFI-TotalDAI-Included-r16 = enable  - 4 bits if more than one serving cell are configured in the DL, the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic or pdsch-HARQ-ACK-Codebook=enhancedDynamic-r16, and NFI-TotalDAI-Included-r16 is not configured  - 4 bits if only one serving cell is configured in the DL, and the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic, and the UE is not provided CORESETPoolIndex or is provided CORESETPoolIndex with value 0 for one or more first CORESETs and is provided CORESETPoolIndex with value 1 for one or more second CORESETs, and is provided ACKNACKFeedbackMode = JointFeedback  - 2 bits if only one serving cell is configured in the DL, the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic or pdsch-HARQ-ACK-Codebook=enhancedDynamic-r16, and NFI-TotalDAI-Included-r16 is not configured, when the UE is not configured with CORESETPoolIndex or the value of CORESETPoolIndex is the same for all CORESETs if CORESETPoolIndex is provided or the UE is not configured with ACKNACKFeedbackMode = JointFeedback | |
| None | [Null\_Type](#Null_Type) | no DAI |
| TwoBits | [DAI\_B2\_Type](#DAI_B2_Type) |  |
| FourBits | [DAI\_B4\_Type](#DAI_B4_Type) |  |
| SixBits | [DAI\_B6\_Type](#DAI_B6_Type) |  |

NR\_DciFormat\_1\_1\_AntennaPorts\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_AntennaPorts\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: Antenna ports as defined by TS 38.212 Tables 7.3.1.2.2-1..4 and Tables 7.3.1.2.2-1A/2A/3A/4A | |
| Index | bitstring | bitstring presentation of index to TS 38.212 Tables 7.3.1.2.2-1..4 and Tables 7.3.1.2.2-1A/2A/3A/4A |

NR\_DciFormat\_1\_1\_TCI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_TCI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: Transmission configuration indication (TCI) | |
| None | [Null\_Type](#Null_Type) | if ControlResourceSet.tci-PresentInDCI does not indicate 'enabled' |
| Value | [B3\_Type](#B3_Type) | if ControlResourceSet.tci-PresentInDCI=='enabled': TCI according to TS 38.213 clause 5.1.5/6 |

NR\_DciFormat\_1\_1\_CBGTI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_CBGTI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: CBG transmission information (CBGTI) | |
| Bitmap | bitstring | 0, 2, 4, 6, or 8 bits according to PDSCH-CodeBlockGroupTransmission.maxCodeBlockGroupsPerTransportBlock and PDSCH-Config.maxNrofCodeWordsScheduledByDCI and TS 38.214 clause 5.1.7.2 |

NR\_DciFormat\_1\_1\_CBGFI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_CBGFI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: CBG flushing out information (CBGFI) | |
| None | [Null\_Type](#Null_Type) | no CBGFI |
| Flag | [B1\_Type](#B1_Type) | CBGFI flag, if codeBlockGroupTransmission is configured in PDSCH-ServingCellConfig with codeBlockGroupFlushIndicator set to true |

NR\_DciFormat\_1\_1\_ChannelAccessCPext\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_ChannelAccessCPext\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: ChannelAccess-CPext | |
| None | [Null\_Type](#Null_Type) | no ChannelAccess-CPext |
| Value | bitstring | 1, 2, 3 or 4 bits. Determined with dl-DCI-triggered-UL-ChannelAccess-CPext-r16 and from Table 7.3.1.2.2-6. |

DAI\_B1\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DAI\_B1\_Type** | |
| **Comment** |  | |
| Index | [B1\_Type](#B1_Type) | 1 bit DAI value |
| Automatic | [Null\_Type](#Null_Type) | DAI automatically assigned by SS according to clause 7.1.2.1.3.3 |

DAI\_B2\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DAI\_B2\_Type** | |
| **Comment** |  | |
| Index | [B2\_Type](#B2_Type) | 2 bits DAI value |
| Automatic | [Null\_Type](#Null_Type) | DAI automatically assigned by SS according to clause 7.1.2.1.3.3 |

DAI\_B4\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DAI\_B4\_Type** | |
| **Comment** |  | |
| Index | [B4\_Type](#B4_Type) | 4 bits DAI value |
| Automatic | [Null\_Type](#Null_Type) | DAI automatically assigned by SS according to clause 7.1.2.1.3.3 |

DAI\_B6\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DAI\_B6\_Type** | |
| **Comment** |  | |
| Index | [B6\_Type](#B6_Type) | 6 bits DAI value |
| Automatic | [Null\_Type](#Null_Type) | DAI automatically assigned by SS according to clause 7.1.2.1.3.3 |

NR\_DciFormat\_1\_1\_OneShotHarqAckRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_OneShotHarqAckRequest\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: One-shot HARQ-ACK request | |
| None | [Null\_Type](#Null_Type) | no One-shot HARQ-ACK request |
| Value | [B1\_Type](#B1_Type) | 1 bit if higher layer parameter pdsch-HARQ-ACK-OneShotFeedback-r16 is configured |

NR\_DciFormat\_1\_1\_PdschGroupIndex\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_PdschGroupIndex\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: PDSCH group index | |
| None | [Null\_Type](#Null_Type) | no PDSCH group index |
| Value | [B1\_Type](#B1_Type) | 1 bit if the higher layer parameter pdsch-HARQ-ACK-Codebook = enhancedDynamic-r16 |

NR\_DciFormat\_1\_1\_NewFeedbackIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_NewFeedbackIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: New feedback indicator | |
| None | [Null\_Type](#Null_Type) | no New feedback indicator |
| Value | bitstring | 1 or 2 bits if pdsch-HARQ-ACK-Codebook = enhancedDynamic-r16 |

NR\_DciFormat\_1\_1\_NumberRequestedPdschGroup\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_1\_NumberRequestedPdschGroup\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.2: Number of requested PDSCH group(s) | |
| None | [Null\_Type](#Null_Type) | no Number of requested PDSCH group(s) |
| Value | [B1\_Type](#B1_Type) | if the higher layer parameter pdsch-HARQ-ACK-Codebook = enhancedDynamic-r16 |

NR\_DciFormat\_1\_2\_DAI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_2\_DAI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.3: DAI (downlink assignment indicator)  0 bit if the higher layer parameter downlinkAssignmentIndexDCI-1-2 is not configured;  4 bits if more than one serving cell are configured in the DL and the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic, where the 2 MSB bits are the counter DAI and the 2 LSB bits are the total DAI  4 bits if one serving cell are configured in the DL and the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic, and the UE is not provided coresetPoolIndex or is provided coresetPoolIndex with value 0 for one or more first CORESETs and is provided coresetPoolIndex with value 1 for one or more second CORESETs, and is provided ackNackFeedbackMode = joint, where the 2 MSB bits are the counter DAI and the 2 LSB bits are the total DAI.  1 or 2 bits if only one serving cell is configured in the DL and the higher layer parameter pdsch-HARQ-ACK-Codebook=dynamic, when the UE is not configured with coresetPoolIndex or the value of coresetPoolIndex is the same for all CORESETs if coresetPoolIndex is provided or the UE is not configured with ackNackFeedbackMode = joint, where the 1 bit or 2 bits are the counter DAI. | |
| None | [Null\_Type](#Null_Type) | no DAI |
| OneBit | [DAI\_B1\_Type](#DAI_B1_Type) |  |
| TwoBits | [DAI\_B2\_Type](#DAI_B2_Type) |  |
| FourBits | [DAI\_B4\_Type](#DAI_B4_Type) |  |

NR\_DciFormat\_1\_2\_PucchResourceIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_2\_PucchResourceIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.3: PUCCH resource indicator | |
| None | [Null\_Type](#Null_Type) | Numberofbits-forPUCCHresourceindicator-ForDCIFormat1\_2 is not present |
| Value | bitstring | 1 or 2 or 3 bits determined by parameter Numberofbits-forPUCCHresourceindicator-ForDCIFormat1\_2 |

NR\_DciFormat\_1\_2\_AntennaPorts\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_2\_AntennaPorts\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.3: Antenna ports as defined by TS 38.212 Tables 7.3.1.2.2-6..26 and Tables 7.3.1.2.2-1A/2A/3A/4A | |
| None | [Null\_Type](#Null_Type) | antennaPortsFieldPresenceDCI-1-2 is not configured |
| Index | bitstring | 2, 3, 4, or 5 bits, bitstring presentation of index to TS 38.212 Tables 7.3.1.2.2-6..26 and Tables 7.3.1.2.2-1A/2A/3A/4A |

NR\_DciFormat\_1\_2\_TCI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_1\_2\_TCI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.2.3: Transmission configuration indication | |
| None | [Null\_Type](#Null_Type) | tci-PresentDCI-1-2-r16 is not present |
| Value | bitstring | 1 or 2 or 3 bits determined by parameter tci-PresentDCI-1-2-r16 |

##### D.1.3.2.4.4 PUSCH\_Scheduling

NR\_DciUlInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciUlInfo\_Type** | | |
| **Comment** | scheduling for CCCH/DCCH/DTCH mapped to UL-SCH mapped to PUSCH;  for all parameters: mandatory for initial configuration of an instance, omit means "keep as it is" afterwards | | |
| ResoureAssignment | [NR\_DciFormat\_0\_X\_ResourceAssignment\_Type](#NR_DciFormat_0_X_ResourceAssignment_Type) | opt | resource assignment; to control setting of the following fields in DCI formats 0\_X (TS 38.212 clause 7.3.1.1.X):  Frequency domain resource assignment  Time domain resource assignment  Modulation and coding scheme  New data indicator  Redundancy version  HARQ process number |
| PuschHoppingCtrl | [NR\_DciFormat\_0\_X\_PuschHoppingCtrl\_Type](#NR_DciFormat_0_X_PuschHoppingCtrl_Type) | opt | control of frequency hopping in DCI formats (TS 38.212 Table 7.3.1.1.1-3) |
| TpcCommandPusch | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) | opt | TPC command for scheduled PUSCH; to be set to 1 per default (0 dB; accumulated TPC) |
| UL\_SUL\_Indicator | [NR\_DciCommon\_UL\_SUL\_Indicator\_Type](#NR_DciCommon_UL_SUL_Indicator_Type) | opt | to control use of supplementary UL by DCI |
| Format | [NR\_DciFormat\_0\_X\_SpecificInfo\_Type](#NR_DciFormat_0_X_SpecificInfo_Type) | opt | DCI format and DCI format specific parameters |

NR\_DciFormat\_0\_X\_ResourceAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_0\_X\_ResourceAssignment\_Type** | | |
| **Comment** | Common definition to be used for resource scheduling in UL | | |
| ResourceAllocationType | [NR\_ResourceAllocationType\_Type](#NR_ResourceAllocationType_Type) | opt | resource allocation type to be used for the frequency domain resource assignment |
| FreqDomain | [NR\_FreqDomainSchedulExplicit\_Type](#NR_FreqDomainSchedulExplicit_Type) | opt | explicit resource assignment: first RB, number of RBs;  corresponds to "Frequency domain resource assignment" in TS 38.212 clause 7.3.1.1.1 and 7.3.1.1.2 |
| TimeDomain | [NR\_DciCommon\_TimeDomainResourceAssignment\_Type](#NR_DciComm__TimeDomainResourceAssignment) | opt | corresponds to "Time domain resource assignment" in TS 38.212 clause 7.3.1.1.1 and 7.3.1.1.2 |
| TransportBlockScheduling | [NR\_TransportBlockRetransmissionList\_Type](#NR_TransportBlockRetransmissionList_Type) | opt | information about MCS and RV for transport block transmission and possible re-transmissions;  corresponds to "Modulation and coding scheme", "New data indicator" and "Redundancy version" in TS 38.212 clause 7.3.1.1.1 and 7.3.1.1.2 |
| HarqProcessConfig | [NR\_HarqProcessConfig\_Type](#NR_HarqProcessConfig_Type) | opt | HARQ process to be used for the scheduled UL data transfer  corresponds to "HARQ process number" in TS 38.212 clause 7.3.1.1.1 and 7.3.1.1.2;  NOTE: for 5G there is no synchronous HARQ anymore but HARQ is asynchronous even for UL  (TS 38.300 clause 5.3.5.4; TS 38.212 clause 7.3.1: 4-bit HARQ process number included in all DCI Formats for UL) |

NR\_DciFormat\_0\_X\_SpecificInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_SpecificInfo\_Type** | |
| **Comment** |  | |
| Format\_0\_0 | [NR\_DciFormat\_0\_0\_SpecificInfo\_Type](#NR_DciFormat_0_0_SpecificInfo_Type) |  |
| Format\_0\_1 | [NR\_DciFormat\_0\_1\_SpecificInfo\_Type](#NR_DciFormat_0_1_SpecificInfo_Type) |  |
| Format\_0\_2 | [NR\_DciFormat\_0\_2\_SpecificInfo\_Type](#NR_DciFormat_0_2_SpecificInfo_Type) |  |

NR\_DciFormat\_0\_0\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_0\_0\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.1: scheduling of PUSCH in one cell; default parameters according to TS 38.508-1 clause 4.3.6.1.1.1 | | |
| ChannelAccessCPext | [NR\_DciFormat\_X\_0\_ChannelAccessCPext\_Type](#NR_DciFormat_X_0_ChannelAccessCPext_Type) | opt | ChannelAccess-CPext |

NR\_DciFormat\_0\_1\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_0\_1\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.2: scheduling of PUSCH in one cell; default parameters according to TS 38.508-1 clause 4.3.6.1.1.2;  for all parameters: mandatory for initial configuration of an instance, omit means "keep as it is" afterwards | | |
| CarrierIndicator | [NR\_DciCommon\_CarrierIndicator\_Type](#NR_DciCommon_CarrierIndicator_Type) | opt | Carrier indicator - CIF value for Cross Carrier Scheduling; 'None' otherwise |
| DfiFlag | [NR\_DciFormat\_0\_1\_DfiFlag\_Type](#NR_DciFormat_0_1_DfiFlag_Type) | opt | DFI flag |
| BWPIndicator | [NR\_DciCommon\_BWPIndicator\_Type](#NR_DciCommon_BWPIndicator_Type) | opt | Bandwidth part indicator |
| FirstDAI | [NR\_DciFormat\_0\_X\_FirstDAI\_Type](#NR_DciFormat_0_X_FirstDAI_Type) | opt | 1st downlink assignment index |
| SecondDAI | [NR\_DciFormat\_0\_X\_SecondDAI\_Type](#NR_DciFormat_0_X_SecondDAI_Type) | opt | 2nd downlink assignment index |
| SrsResourceIndicator | [NR\_DciFormat\_0\_X\_SrsResourceIndicator\_Type](#NR_DciFormat_0_X_SrsResourceIndicator_Ty) | opt | SRS resource indicator |
| PrecodingInfo | [NR\_DciFormat\_0\_X\_PrecodingInfo\_Type](#NR_DciFormat_0_X_PrecodingInfo_Type) | opt | Precoding information and number of layers |
| AntennaPorts | [NR\_DciFormat\_0\_X\_AntennaPorts\_Type](#NR_DciFormat_0_X_AntennaPorts_Type) | opt | Antenna ports |
| SrsRequest | [NR\_DciFormat\_X\_1\_SrsRequest\_Type](#NR_DciFormat_X_1_SrsRequest_Type) | opt | SRS request |
| CsiRequest | [NR\_DciFormat\_0\_X\_CsiRequest\_Type](#NR_DciFormat_0_X_CsiRequest_Type) | opt | CSI request |
| CBGTI | [NR\_DciFormat\_0\_1\_CBGTI\_Type](#NR_DciFormat_0_1_CBGTI_Type) | opt | CBG transmission information (CBGTI) |
| PtrsDmrsAssociation | [NR\_DciFormat\_0\_X\_PtrsDmrsAssociation\_Type](#NR_DciFormat_0_X_PtrsDmrsAssociation_Typ) | opt | PTRS-DMRS association |
| BetaOffsetIndicator | [NR\_DciFormat\_0\_X\_BetaOffsetIndicator\_Type](#NR_DciFormat_0_X_BetaOffsetIndicator_Typ) | opt | beta\_offset indicator |
| DmrsSequenceInit | [NR\_DciCommon\_DmrsSequenceInit\_Type](#NR_DciCommon_DmrsSequenceInit_Type) | opt | DMRS sequence initialization |
| UlschIndicator | [NR\_DciFormat\_0\_X\_UlschIndicator\_Type](#NR_DciFormat_0_X_UlschIndicator_Type) | opt | UL-SCH indicator |
| ChannelAccessCPextCAPC | [NR\_DciFormat\_0\_1\_ChannelAccessCPextCAPC\_Type](#NR_DciFormat_0_1_ChannelAccessCPextCAPC_) | opt | ChannelAccess-CPext-CAPC |
| OpenLoopPowerControl | [NR\_DciFormat\_0\_X\_OpenLoopPowerControl\_Type](#NR_DciFormat_0_X_OpenLoopPowerControl_Ty) | opt | Open-loop power control parameter set indication |
| PriorityIndicator | [NR\_DciCommon\_PriorityIndicator\_Type](#NR_DciCommon_PriorityIndicator_Type) | opt | Priority indicator |
| InvalidSymbolPatternIndicator | [NR\_DciFormat\_0\_X\_InvalidSymbolPatternIndicator\_Type](#NR_DciForm__nvalidSymbolPatternIndicator) | opt | Invalid symbol pattern indicator |
| MinimumApplicableSchedulingOffset | [NR\_DciFormat\_X\_1\_MinimumApplicableSchedulingOffset\_Type](#NR_DciForm__umApplicableSchedulingOffset) | opt | Minimum applicable scheduling offset indicator |
| SCellDormancyIndication | [NR\_DciFormat\_X\_1\_SCellDormancyIndication\_Type](#NR_DciFormat_X_1_SCellDormancyIndication) | opt | SCell dormancy indication |
| SidelinkAssignmentIndex | [NR\_DciFormat\_0\_1\_SidelinkAssignmentIndex\_Type](#NR_DciFormat_0_1_SidelinkAssignmentIndex) | opt | Sidelink assignment index |

NR\_DciFormat\_0\_2\_SpecificInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_0\_2\_SpecificInfo\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.1.3: scheduling of PUSCH in one cell; default parameters according to TS 38.508-1 clause 4.3.6.1.1.3;  for all parameters: mandatory for initial configuration of an instance, omit means "keep as it is" afterwards | | |
| CarrierIndicator | [NR\_DciFormat\_X\_2\_CarrierIndicator\_Type](#NR_DciFormat_X_2_CarrierIndicator_Type) | opt | Carrier indicator - CIF value for Cross Carrier Scheduling; 'None' otherwise |
| BWPIndicator | [NR\_DciCommon\_BWPIndicator\_Type](#NR_DciCommon_BWPIndicator_Type) | opt | Bandwidth part indicator |
| FirstDAI | [NR\_DciFormat\_0\_X\_FirstDAI\_Type](#NR_DciFormat_0_X_FirstDAI_Type) | opt | 1st downlink assignment index |
| SecondDAI | [NR\_DciFormat\_0\_X\_SecondDAI\_Type](#NR_DciFormat_0_X_SecondDAI_Type) | opt | 2nd downlink assignment index |
| SrsResourceIndicator | [NR\_DciFormat\_0\_X\_SrsResourceIndicator\_Type](#NR_DciFormat_0_X_SrsResourceIndicator_Ty) | opt | SRS resource indicator |
| PrecodingInfo | [NR\_DciFormat\_0\_X\_PrecodingInfo\_Type](#NR_DciFormat_0_X_PrecodingInfo_Type) | opt | Precoding information and number of layers |
| AntennaPorts | [NR\_DciFormat\_0\_X\_AntennaPorts\_Type](#NR_DciFormat_0_X_AntennaPorts_Type) | opt | Antenna ports |
| SrsRequest | [NR\_DciFormat\_X\_2\_SrsRequest\_Type](#NR_DciFormat_X_2_SrsRequest_Type) | opt | SRS request |
| CsiRequest | [NR\_DciFormat\_0\_X\_CsiRequest\_Type](#NR_DciFormat_0_X_CsiRequest_Type) | opt | CSI request |
| PtrsDmrsAssociation | [NR\_DciFormat\_0\_X\_PtrsDmrsAssociation\_Type](#NR_DciFormat_0_X_PtrsDmrsAssociation_Typ) | opt | PTRS-DMRS association |
| BetaOffsetIndicator | [NR\_DciFormat\_0\_X\_BetaOffsetIndicator\_Type](#NR_DciFormat_0_X_BetaOffsetIndicator_Typ) | opt | beta\_offset indicator |
| DmrsSequenceInit | [NR\_DciCommon\_DmrsSequenceInit\_Type](#NR_DciCommon_DmrsSequenceInit_Type) | opt | DMRS sequence initialization |
| UlschIndicator | [NR\_DciFormat\_0\_X\_UlschIndicator\_Type](#NR_DciFormat_0_X_UlschIndicator_Type) | opt | UL-SCH indicator |
| OpenLoopPowerControl | [NR\_DciFormat\_0\_X\_OpenLoopPowerControl\_Type](#NR_DciFormat_0_X_OpenLoopPowerControl_Ty) | opt | Open-loop power control parameter set indication |
| PriorityIndicator | [NR\_DciCommon\_PriorityIndicator\_Type](#NR_DciCommon_PriorityIndicator_Type) | opt | Priority indicator |
| InvalidSymbolPatternIndicator | [NR\_DciFormat\_0\_X\_InvalidSymbolPatternIndicator\_Type](#NR_DciForm__nvalidSymbolPatternIndicator) | opt | Invalid symbol pattern indicator |

NR\_DciFormat\_0\_X\_PuschHoppingCtrl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_PuschHoppingCtrl\_Type** | |
| **Comment** | TS 38.212 7.3.1.1.1 (format 0\_0) and 7.3.1.1.2 (format 0\_1) | |
| None | [Null\_Type](#Null_Type) | DCI format 0\_1 only: 0 bit if only resource allocation type 0 is configured or PUSCH-Config.frequencyHopping is not configured |
| Flag | [B1\_Type](#B1_Type) | 1 bit if resource allocation type 1 is configured (or type 0 and type 1)  '1'B to indicate frequency hopping according to TS 38.214 clause 6.3 |

NR\_DciFormat\_0\_X\_FirstDAI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_FirstDAI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: First DAI (downlink assignment indicator) depending on PhysicalCellGroupConfig.pdsch-HARQ-ACK-Codebook | |
| SemiStaticCodebook | [DAI\_B1\_Type](#DAI_B1_Type) | 1 bit according to TS 38.213 clause 9.1.2.2 for Type-1 HARQ-ACK (pdsch-HARQ-ACK-codebook=semi-static) |
| DynamicCodebook | [DAI\_B2\_Type](#DAI_B2_Type) | 2 bits according to TS 38.213 Table 9.1.3-2 for Type-2 HARQ-ACK (pdsch-HARQ-ACK-codebook=dynamic or for enhanced dynamic HARQ-ACK codebook without UL-TotalDAI-Included-r16 configured) |
| EnhancedDynamicCodebook | [DAI\_B4\_Type](#DAI_B4_Type) | Not applicable for DCI 0\_2 - 4 bits for enhanced dynamic HARQ-ACK codebook and with UL-TotalDAI-Included-r16 = "enable". |

NR\_DciFormat\_0\_X\_SecondDAI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_SecondDAI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: Second DAI (downlink assignment indicator) depending on PhysicalCellGroupConfig.pdsch-HARQ-ACK-Codebook | |
| None | [Null\_Type](#Null_Type) | no 2nd DAI |
| DynamicCodebook | [DAI\_B2\_Type](#DAI_B2_Type) | 2 bits according to TS 38.213 Table 9.1.3-2 for Type-2 HARQ-ACK (pdsch-HARQ-ACK-codebook=dynamic or for enhanced dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks and without UL-TotalDAI-Included-r16 configured) |
| EnhancedDynamicCodebook | [DAI\_B4\_Type](#DAI_B4_Type) | Not applicable for DCI 0\_2 - 4 bits for enhanced dynamic HARQ-ACK codebook with two HARQ-ACK sub-codebooks and with UL-TotalDAI-Included-r16 = "enable" |

NR\_DciFormat\_0\_X\_SrsResourceIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_SrsResourceIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: SRS resource indicator depending on PUSCH-Config.txConfig | |
| NonCodeBook | bitstring | txConfig==NonCodeBook: bitstring of 0..3 bits according to TS 38.212 Tables 7.3.1.1.2-28/29/30/31  (according to TS 38.331 clause 6.3.2 "SRS-Config" there are at most 4 entries with usage==nonCodebook) |
| CodeBook | bitstring | txConfig==CodeBook:  - bitstring of 0 or 1 bits according to TS 38.212 Table 7.3.1.1.2-32  - bitstring of 4 bits according to TS 38.212 Table 7.3.1.1.2-32A/32B if ul-FullPowerTransmission-r16 is configured  (according to TS 38.331 clause 6.3.2 "SRS-Config" there are at most 2 entries with usage==codebook) |

NR\_DciFormat\_0\_X\_PrecodingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_PrecodingInfo\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: Precoding information and number of layers depending on PUSCH-Config.txConfig | |
| NonCodeBook | [Null\_Type](#Null_Type) | txConfig==NonCodeBook: 0 bits |
| CodeBook | bitstring | txConfig==CodeBook: bitstring according to TS 38.212 Tables 7.3.1.1.2-2..5A; empty string for one antenna port only |

NR\_DciFormat\_0\_X\_AntennaPorts\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_AntennaPorts\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: Antenna ports depending (mainly) on  - PUSCH-Config.transformPrecoder,  - DMRS-UplinkConfig.dmrs-Type,  - DMRS-UplinkConfig.maxLength,  - dmrs-UplinkTransformPrecoding-r16,  - tp-pi2BPSK | |
| Index | bitstring | bitstring presentation of index to Tables 7.3.1.1.2-6..23 |
| None | [Null\_Type](#Null_Type) | antennaPortsFieldPresenceDCI-0-2 is not present  Not applicable for DCI format 0\_1 |

NR\_DciFormat\_0\_X\_CsiRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_CsiRequest\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: CSI request | |
| Index | bitstring | 0, 1, 2, 3, 4, 5, or 6 bits determined by CSI-MeasConfig.reportTriggerSize/CSI-MeasConfig.reportTriggerSizeDCI-0-2; TS 38.214 clause 5.2.1.5.1) |

NR\_DciFormat\_0\_1\_CBGTI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_1\_CBGTI\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2: CBG transmission information (CBGTI) | |
| Index | bitstring | 0, 2, 4, 6, or 8 bits determined by PUSCH-CodeBlockGroupTransmission.maxCodeBlockGroupsPerTransportBlock configured by PUSCH-ServingCellConfig |

NR\_DciFormat\_0\_X\_PtrsDmrsAssociation\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_PtrsDmrsAssociation\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: PTRS-DMRS association | |
| None | [Null\_Type](#Null_Type) | 0 bit PTRS-UplinkConfig is not configured in either dmrs-UplinkForPUSCH-MappingTypeA or dmrs-UplinkForPUSCH-MappingTypeB and transform precoder is disabled, or if transform precoder is enabled, or if maxRank=1 |
| Value | [B2\_Type](#B2_Type) | 2 bits according to TS 38.212 Table 7.3.1.1.2-25 and 7.3.1.1.2-26 |

NR\_DciFormat\_0\_X\_BetaOffsetIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_BetaOffsetIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: beta\_offset indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit if uci-on-PUSCH != dynamic (ConfiguredGrantConfig.uci-OnPUSCH |
| Value | [B2\_Type](#B2_Type) | 2 bits according to TS 38.213 Table 9.3-3 and Table 9.3-3A |

NR\_DciFormat\_0\_X\_UlschIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_UlschIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: UL-SCH indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit if the number of scheduled PUSCH indicated by the Time domain resource assignment field is larger than 1  Not applicable for DCI format 0\_2 |
| Value | [B1\_Type](#B1_Type) | 1 bit: "1" indicates UL-SCH shall be transmitted on the PUSCH, "0" indicates UL-SCH shall not be transmitted on the PUSCH. Except for DCI format 0\_1 with CRC scrambled by SP-CSI-RNTI, a UE is not expected to receive a DCI format 0\_1 with UL-SCH indicator of "0" and CSI request of all zero(s). |

NR\_DciFormat\_0\_1\_DfiFlag\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_1\_DfiFlag\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2: DFI flag indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit no DFI flag indicator |
| Flag | [B1\_Type](#B1_Type) | 1 bit: if the UE is configured to monitor DCI format 0\_X with CRC scrambled by CS-RNTI and for operation in a cell with shared spectrum channel access. |

NR\_DciFormat\_0\_1\_ChannelAccessCPextCAPC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_1\_ChannelAccessCPextCAPC\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2: ChannelAccess-CPext-CAPC | |
| None | [Null\_Type](#Null_Type) | 0 bit: no ChannelAccess-CPext-CAPC |
| Value | bitstring | 1, 2, 3, 4, 5 or 6 bits.  One or more entries from Table 7.3.1.1.2-35 are configured by the higher layer parameter ul-dci-triggered-UL-ChannelAccess-CPext-CAPC-r16 |

NR\_DciFormat\_0\_X\_OpenLoopPowerControl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_OpenLoopPowerControl\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: Open-loop power control parameter set indication | |
| None | [Null\_Type](#Null_Type) | 0 bit no Open-loop power control parameter set indication |
| Value | bitstring | 1 or 2 bits  - 1 bit if SRS resource indicator is present in the DCI format 0\_X;  - 1 or 2 bits as determined by higher layer parameter olpc-ParameterSetForDCI-Format0-X if SRS resource indicator is not present in the DCI format 0\_X. |

NR\_DciFormat\_0\_X\_InvalidSymbolPatternIndicator\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_X\_InvalidSymbolPatternIndicator\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.X: Invalid symbol pattern indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit no Invalid symbol pattern indicator |
| Value | [B1\_Type](#B1_Type) | 1 bit as defined in Clause 6.1.2.1 in TS 38.214 |

NR\_DciFormat\_0\_1\_SidelinkAssignmentIndex\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_0\_1\_SidelinkAssignmentIndex\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.1.2: Sidelink assignment index | |
| None | [Null\_Type](#Null_Type) | 0 bit no Sidelink assignment index |
| Value | bitstring | 1 or 2 bits: 1 bit if the UE is configured with pdsch-HARQ-ACK-Codebook = semi-static ; 2 bits if the UE is configured with pdsch-HARQ-ACK-Codebook = dynamic |

### D.1.3.3 MAC\_Layer

Configuration for MAC procedures according to TS 38.321 clause 5 and related physical layer configuration

#### D.1.3.3.1 MAC\_Layer\_Common

MAC\_Layer\_Common: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_TimingAdvanceIndex\_Type** | integer (0..63) | acc. to TS 38.321, clause 6.1.3.4 "Timing Advance Command MAC CE" and TS 38.213 clause 4.2 "Transmission timing adjustments" |
| **NR\_TimingAdvance\_Period\_Type** | integer (400, 600, 1020, 1530, 2040, 4090, 8190) | the values correspond to 80 % of TimeAlignmentTimer (acc. to TS 38.523-3, clause 6.3.2):  ms500, ms750, ms1280, ms1920, ms2560, ms5120, ms10240 rounded to nearest multiple of 10 |

NR\_UplinkTimeAlignment\_AutoSynch\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UplinkTimeAlignment\_AutoSynch\_Type** | | |
| **Comment** | Parameters for automatic synchronisation of UL time alignment;  The SS shall periodically transmit TA MAC control elements according to 38.321 clause 6.1.3.4 with  - TAG-Id=0 for the SpCell  - TAG-Id as configured for an SCell  the transmission shall be continuously until being stopped | | |
| TimingAdvance | [NR\_TimingAdvanceIndex\_Type](#NR_TimingAdvanceIndex_Type) |  | amount of timing adjustment that MAC entity has to apply |
| TA\_Period | [NR\_TimingAdvance\_Period\_Type](#NR_TimingAdvance_Period_Type) |  | time period after which TA MAC control elements need to be automatically transmitted |

NR\_UplinkTimeAlignment\_Synch\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_UplinkTimeAlignment\_Synch\_Type** | |
| **Comment** | Configuration of Time Alignment of the UL | |
| None | [Null\_Type](#Null_Type) | no PUCCH Synchronisation applied |
| Auto | [NR\_UplinkTimeAlignment\_AutoSynch\_Type](#NR_UplinkTimeAlignment_AutoSynch_Type) | SS automatically maintains PUCCH synchronization at UE |

#### D.1.3.3.2 Random\_Access\_Procedure

NR\_RachProcedureConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RachProcedureConfig\_Type** | | |
| **Comment** | parameters to control the random access procedure; TS 38.321, clause 5.1. When SUL is configured, SS shall monitor UE RACH transmissions on both uplink and supplementary uplink carriers.  NOTE: RACH-ConfigCommon and RACH-ConfigDedicated are contained in NR\_UplinkBWP\_Type already (RACH-ConfigCommon as part of BWP-UplinkCommon).  When supplementary uplink is configured, RACH-ConfigCommon and RACH-ConfigDedicated are contained in the fields Uplink and SupplementaryUplink. | | |
| RachProcedureList | [NR\_RachProcedureList\_Type](#NR_RachProcedureList_Type) | opt | in normal cases there is one element which is used for any RA procedure |

NR\_RachProcedureList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RachProcedureList\_Type** |
| **Comment** | to simulate RACH procedure with one or more than one attempt by the UE:  There is one element in the list per PRACH Preamble attempt |
| record of [NR\_RachProcedure\_Type](#NR_RachProcedure_Type) | |

NR\_RachProcedure\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RachProcedure\_Type** | | |
| **Comment** |  | | |
| RandomAccessResponse | [NR\_RandomAccessResponseConfig\_Type](#NR_RandomAccessResponseConfig_Type) | opt | configures how the SS shall react on a PRACH Preamble attempt, in general:  - RAR with RAPID matching the RAPID of the UE's PRACH Preamble  - RAR with RAPID not matching the RAPID of the UE's PRACH Preamble  - BackoffIndicator  - no response at all |
| ContentionResolution | [NR\_ContentionResolutionCtrl\_Type](#NR_ContentionResolutionCtrl_Type) | opt | Random Access Procedure may be  1. Contention free (Non-contention based) => no contention resolution  2. Contention based (see TS 38.321 clause 5.1.5):  2a) C-RNTI based:  Msg3 contains MAC C-RNTI control element and in general contention resolution is done by assignment of an UL grant for this C-RNTI  2b) UE Contention Resolution Identity based:  Msg3 contains RRC message to setup or restore RRC connection  => contention resolution is done by sending of Msg4 with UE Contention Resolution Identity MAC CE |

##### D.1.3.3.2.1 Random\_Access\_Response

Random\_Access\_Response: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RACH\_TimingAdvance\_Type** | integer (0..3846) | 12 bit value corresponding to Timing Advance Command field of the Random Access Response (TS 38.321 clause 6.2.3): 0..3846 according to TS 38.213 clause 4.2) |
| **NR\_RAR\_BackoffIndicator\_Type** | integer (0..15) | MAC subPDU for Backoff Indicator only according to TS 38.321 clause 6.1.5 |

NR\_RAR\_UplinkGrant\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RAR\_UplinkGrant\_Type** | | |
| **Comment** | 27 bits according to TS 38.213 Table 8.2-1 and TS 38.321 Figure 6.2.3-1 | | |
| HoppingFlag | [B1\_Type](#B1_Type) |  | Hopping flag |
| Msg3FrequencyResourceAllocation | [B14\_Type](#B14_Type) |  | Msg3 PUSCH frequency resource allocation:  RIV value as defined in TS 38.213 clause 8.2 and TS 38.214 clause 6.1.2.2.2 |
| Msg3TimeResourceAllocation | [B4\_Type](#B4_Type) |  | Msg3 PUSCH time resource allocation similar to the Time-domain resource assignment field of DCI format 0\_0:  index addressing an entry of the applicable PUSCH time domain resource allocation table as specified in TS 38.214 clause 6.1.2.1.1;  the timing between the RAR and Msg3 is given by K2 (as in the time domain resource allocation table) and a delta value as according to Table 6.1.2.1.1-5 in TS 38.214.  It is the responsibility of SS implementation to send the RAR in an appropriate DL slot so that the corresponding Msg3 transmission is scheduled for a valid UL slot; it is responsibility of test specification to provide a correct K2 value for the given numerology. |
| MCS | [B4\_Type](#B4_Type) |  | Modulation and Coding Scheme: first sixteen indices of the applicable MCS index table for PUSCH (TS 38.214 Table 6.1.4.1-1) |
| TPC\_Command | [B3\_Type](#B3_Type) |  | TPC command for Msg3 PUSCH |
| CQI\_Req | [B1\_Type](#B1_Type) |  | CQI request |

NR\_TempC\_RNTI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_TempC\_RNTI\_Type** | |
| **Comment** |  | |
| SameAsC\_RNTI | [Null\_Type](#Null_Type) | in the RA response SS shall use the same C-RNTI as configured in NR\_CellConfigCommon\_Type;  this is useful for initial random access |
| Explicit | [RNTI\_Value\_Type](#RNTI_Value_Type) | in the RA response SS shall use different value as configured in NR\_CellConfigCommon\_Type;  this can be used when the UE already is in RRC\_CONNECTED to have a temporary C-RNTI different from the one used by the UE;  NOTE: when the UE is not in RRC\_CONNECTED there shall be no explicit temp. C-RNTI since then the UE would assume this value as C-RNTI |

NR\_RAR\_Payload\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RAR\_Payload\_Type** | | |
| **Comment** | MAC payload for Random Access Response according to TS 38.321 clause 6.2.3 | | |
| TimingAdvance | [NR\_RACH\_TimingAdvance\_Type](#NR_RACH_TimingAdvance_Type) |  | timing advance: TS 38.321 clause 6.2.3 and TS 38.213 clause 4.2  NOTE:  timing advance has impact not only on the RA procedure;  SS in general needs to adjust its timing accordingly |
| UplinkGrant | [NR\_RAR\_UplinkGrant\_Type](#NR_RAR_UplinkGrant_Type) |  | initial UL grant |
| TempC\_RNTI | [NR\_TempC\_RNTI\_Type](#NR_TempC_RNTI_Type) |  | NOTE:  In general for initial Random Access Procedure TempC\_RNTI shall be 'SameAsC\_RNTI'  For Random Access Procedure in RRC\_CONNECTED state the NW assigns a temporary C-RNTI which is replaced by the one stored at the UE;  => TempC\_RNTI may be 'SameAsC\_RNTI' (in this case temp. C-RNTI and C-RNTI are equal what is not likely in a real network),  or there is an explicit temp. C-RNTI what is used during RA procedure only (as in a real network) |

NR\_RAR\_RapIdOnly\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RAR\_RapIdOnly\_Type** | | |
| **Comment** | MAC subPDU for RAPID only (acknowledgment for SI request) according to TS 38.321 clause 6.1.5 | | |
| RapId | [RAR\_RapIdCtrl\_Type](#RAR_RapIdCtrl_Type) |  |  |

NR\_RAR\_RapIdAndPayload\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RAR\_RapIdAndPayload\_Type** | | |
| **Comment** | MAC subPDU for RAPID and RAR payload according to TS 38.321 clause 6.1.5 | | |
| RapId | [RAR\_RapIdCtrl\_Type](#RAR_RapIdCtrl_Type) |  |  |
| Payload | [NR\_RAR\_Payload\_Type](#NR_RAR_Payload_Type) |  |  |

NR\_RAR\_SubPdu\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RAR\_SubPdu\_Type** | |
| **Comment** | Random Access Response sub-PDU according to TS 38.321 clause 6.1.5 | |
| BackoffIndicator | [NR\_RAR\_BackoffIndicator\_Type](#NR_RAR_BackoffIndicator_Type) |  |
| RapIdOnly | [NR\_RAR\_RapIdOnly\_Type](#NR_RAR_RapIdOnly_Type) |  |
| RapIdAndPayload | [NR\_RAR\_RapIdAndPayload\_Type](#NR_RAR_RapIdAndPayload_Type) |  |

NR\_RAR\_SubPduList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RAR\_SubPduList\_Type** |
| **Comment** | list of MAC subPDUs; if a Backoff Indicator is included it has to be the first element (TS 38.321 clause 6.1.5) |
| record of [NR\_RAR\_SubPdu\_Type](#NR_RAR_SubPdu_Type) | |

NR\_RAR\_MacPdu\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RAR\_MacPdu\_Type** | | |
| **Comment** |  | | |
| SubPduList | [NR\_RAR\_SubPduList\_Type](#NR_RAR_SubPduList_Type) | opt | list of Backoff Indicator (optional) and random access responses;  empty list if no RAR shall be sent at all (omit means "keep as it is" as usual) |
| CrcError | boolean | opt | if set, MAC PDU shall transmitted with CRC bits (0-3) being toggled |

NR\_RandomAccessResponseConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RandomAccessResponseConfig\_Type** | | |
| **Comment** | configuration for Random Access Response mapped to DL-SCH mapped to PDSCH | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | in general a RACH procedure is expected at the BWP currently being configured as active BWP at the SS;  Type1-PDCCH common search space is used for scheduling of the Random Access Response (Msg2) |
| MacPdu | [NR\_RAR\_MacPdu\_Type](#NR_RAR_MacPdu_Type) | opt | MAC PDU to be sent automatically by the SS when there has been a RACH preamble |

##### D.1.3.3.2.2 Contention\_Resolution

NR\_ContentionResolutionCtrl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ContentionResolutionCtrl\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | no contention resolution: e.g. in case of contention free random access procedure or for special cases of contention based random access procedure |
| CRNTI\_Based | [NR\_SearchSpaceUlDciAssignment\_Type](#NR_SearchSpaceUlDciAssignment_Type) | contention resolution based on C-RNTI on PDCCH: The SS assigns UL grant on PDCCH;  the UL grant is scrambled by C-RNTI and associated with the UE-specific search space |
| Msg4\_Based | [NR\_RachProcedureMsg4\_Type](#NR_RachProcedureMsg4_Type) | contention resolution based on UE Contention Resolution Identity on DL-SCH |

NR\_RachProcedureMsg4\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RachProcedureMsg4\_Type** | | |
| **Comment** | Msg4 of the RACH procedure in case of contention resolution based on UE Contention Resolution Identity | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | DCI to be used for Msg4; the DCI is scrambled by the temporary C-RNTI and associated with the Type1-PDCCH common search space |
| ContentionResolutionId | [NR\_ContentionResolutionId\_Type](#NR_ContentionResolutionId_Type) | opt | Contention Resolution Id contained in MAC PDU of Msg4 |
| RrcPdu | [NR\_RachProcedureMsg4RrcMsg\_Type](#NR_RachProcedureMsg4RrcMsg_Type) | opt | RRC message to be contained in Msg4 of the RACH procedure |
| CrcError | boolean | opt | if set, MAC PDU shall transmitted with CRC bits (0-3) being toggled |

NR\_ContentionResolutionId\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ContentionResolutionId\_Type** | |
| **Comment** |  | |
| XorMask | [B48\_Type](#B48_Type) | When SS receives Contention Resolution ID from the UE,  SS shall XOR it with the given mask and use this as Contention Resolution ID;  this allows to get an unmatching Contention Resolution ID;  in normal cases mask shall be set to tsc\_ContentionResolutionId\_Unchanged  (i.e. the Contention Resolution ID remains unchanged)  NOTE: In case of UL\_CCCH1\_Message the contention resolution id shall be cut down to the first 48 bits according to TS 38.321 clause 6.1.3.3 |
| None | [Null\_Type](#Null_Type) | MAC Contention Resolution Control Element is not contained in the MAC PDU sent out as response for Msg3 |

NR\_RachProcedureMsg4RrcMsg\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RachProcedureMsg4RrcMsg\_Type** | |
| **Comment** |  | |
| RrcCcchMsg | octetstring | encoded RRC message for CCCH; LCID=000000 for CCCH |
| RrcDcchMsg | octetstring | encoded RRC message for DCCH; the SS shall  - apply integrity protection,  - add a PDCP header accordingly,  - add an AM RLC header,  - use LCID=000001 corresponding to SRB1 as logical channel id |
| None | [Null\_Type](#Null_Type) | Msg4 does not contain any RRC message, e.g. when RRC message is sent stand-alone in separate DL transmission |

### D.1.3.4 System\_Information\_Control

Primitive to configuration scheduling of system information on BCCH/BCH

System\_Information\_Control: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_BcchToPbchConfig\_Type** | [Null\_Type](#Null_Type) | place holder for BCCH mapped to BCH mapped to PBCH:  MIB using fixed periodicity (80ms) and repetitions (80ms) according to TS 38.331 clause 5.2.1;  the position of SS/PBCH blocks in frequency and time domain is specified in TS 38.211 clause 7.4.3 and TS 38.213 clause 4.1  the SS configuration for SS/PBCH blocks is defined by NR\_SSB\_Config\_Type as part of physical layer configuration of a cell |

NR\_Sib1Schedul\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_Sib1Schedul\_Type** | | |
| **Comment** | Scheduling of SIB1 (RMSI - Remaining Minimum SI, according to TS 38.300 clause 7.3):  fixed scheduling in time domain according to TS 38.331 clause 5.2.1  (periodicity: 160ms according to TS 38.331 clause 5.2.1) | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | in general SIB scheduling is assigned to the initial BWP's Type0-PDCCH common search space (searchSpaceZero);  in principle SIB scheduling can be configured to happen simultaneously in more than one BWP (e.g. initial BWP and active BWP);  SIB1 scheduling may be stopped by not assigning any BWP (AssignedBWPs being empty) |
| Periodicity | integer | opt | SIB1 repetition transmission period in milliseconds.  According to TS 38.331 clause 5.2.1 the SIB1 repetition transmission period is 20 ms in case of SSB and CORESET multiplexing pattern 1;  for SSB and CORESET multiplexing pattern 2/3 it is the same as the SSB period |
| SlotOffsetList | [IntegerList\_Type](#IntegerList_Type) | opt | List of slot offsets for SIB1:  For single beam configuration there is exactly one offset corresponding to the SSB index of the beam.  For multiple beam configuration with N beams, SIB1 may be scheduled per beam so that there can be up-to N SIB1-transmission per repetition period.  The offsets correspond to the SSB index of the respective beam as according to TS 38.213 clause 13:  For a repetition period of 20ms the offset is relative to start of frames with even SFN (i.e. SFN mod 2 = 0)  => in terms of TS 38.213 clause 13 for a given SSB index the slot offset is  n0 when nO refers to a frame with even SFN  n0 + (number of slots per frame) when nO refers to a frame with odd SFN  A repetition period other than 20ms is not considered as long as there is no test requirement.  NOTE: the SIB1 scheduling for a given offset shall match the Type0-PDCCH common search space configuration as configured in the SearchSpaceArray of the BWP |

NR\_SingleSiSchedul\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SingleSiSchedul\_Type** | | |
| **Comment** | Scheduling for a single SI in its SI-window within a BWP (or even within several BWPs) | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | in general SIB scheduling is assigned to the initial BWP's Type0A-PDCCH common search space;  nevertheless in principle scheduling can be configured to happen simultaneously in more than one BWP (e.g. initial BWP and active BWP) |
| SlotOffset | integer | opt | slot-offset within the SI-window |

NR\_OtherSiSchedul\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_OtherSiSchedul\_Type** | | |
| **Comment** | Scheduling of other SI ("other SI" according to TS 38.300 clause 7.3):  specifies for a specific SI the scheduling and repetitions within its SI window | | |
| Periodicity | [NR\_SiPeriodicity\_Type](#NR_SiPeriodicity_Type) | opt |  |
| Window | record of [NR\_SingleSiSchedul\_Type](#NR_SingleSiSchedul_Type) | opt | one or more repetitions within the si-window |

NR\_OtherSiSchedulList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_OtherSiSchedulList\_Type** |
| **Comment** |  |
| record of [NR\_OtherSiSchedul\_Type](#NR_OtherSiSchedul_Type) | |

NR\_PosSiSchedul\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PosSiSchedul\_Type** | | |
| **Comment** | Scheduling of other SI ("other SI" according to TS 38.300 clause 7.3) including posSIBs: specifies for a specific SI the scheduling and repetitions within its SI window | | |
| PosSI\_Periodicity | [NR\_PosSI\_Periodicity\_Type](#NR_PosSI_Periodicity_Type) | opt |  |
| Window | record of [NR\_SingleSiSchedul\_Type](#NR_SingleSiSchedul_Type) | opt | one or more repetitions within the si-window |

NR\_PosSiSchedulList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_PosSiSchedulList\_Type** |
| **Comment** |  |
| record of [NR\_PosSiSchedul\_Type](#NR_PosSiSchedul_Type) | |

PosSiSchedulInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **PosSiSchedulInfo\_Type** | | |
| **Comment** |  | | |
| OffsetToSI\_Used | boolean | opt | If true: indicates that all the SI messages containing posSIBs are scheduled with an offset of 8 radio frames compared to SI messages provided in NR\_AllOtherSiSchedul\_Type. SiList and NR\_AllOtherSiSchedul\_Type.SegmentedSiList.  If false: the SI messages containing posSIBs are scheduled after the other SI messages provided in NR\_AllOtherSiSchedul\_Type.SiList and NR\_AllOtherSiSchedul\_Type.SegmentedSiList.  Corresponding to ASN.1 PosSchedulingInfo-r16.offsetToSI-Used-r16. |
| PosSiList | [NR\_PosSiSchedulList\_Type](#NR_PosSiSchedulList_Type) | opt | list of scheduling info for the posSIs containing one or more posSIBs |

NR\_AllOtherSiSchedul\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_AllOtherSiSchedul\_Type** | | |
| **Comment** | Scheduling of (all) other SI (i.e. SIB2 and above according to TS 38.300 clause 7.3) | | |
| WindowLength | [NR\_SiWindowLength\_Type](#NR_SiWindowLength_Type) | opt | to calculate start of each SI window according to TS 38.331 clause 5.2.2.3.2 |
| SiList | [NR\_OtherSiSchedulList\_Type](#NR_OtherSiSchedulList_Type) | opt | list of scheduling info for the SIs containing one or more SIBs |
| SegmentedSiList | [NR\_OtherSiSchedulList\_Type](#NR_OtherSiSchedulList_Type) | opt | list of scheduling info for segmented SIs (e.g. SI containing SIB7 or SIB8 or SIB12);  corresponds to SegmentedSIs in NR\_BcchInfo\_Type: SS shall subsequently schedule the elements of the corresponding SegmentedSIs (NR\_BcchInfo\_Type);  SegmentedSiList[i] provides scheduling info for BcchInfo\_Type's SegmentedSIs[i]  The kth element of SegmentedSIs[i] is sent at the following slot number from T0:  SlotOffset + ((N+i)\* WindowLength) + k\*Periodicity  with  k : kth element in SegmentedSIs[i], i.e. SegmentedSIs[i][k]  N : number of SI provided in SIs in NR\_BcchInfo\_Type  T0: start of the modification period  SlotOffset, Periodicity: scheduling info as given by SegmentedSiList[i] - in slots  WindowLength: provided in NR\_AllOtherSiSchedul\_Type - in slots |
| PosSiSchedulInfo | [PosSiSchedulInfo\_Type](#PosSiSchedulInfo_Type) | opt | list of scheduling info for SIs containing one or more posSIBs |

NR\_BcchToPdschConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BcchToPdschConfig\_Type** | | |
| **Comment** | configuration for BCCH mapped to DL-SCH mapped to PDSCH | | |
| Sib1Schedul | [NR\_Sib1Schedul\_Type](#NR_Sib1Schedul_Type) | opt | SIB1 scheduling |
| SiSchedul | [NR\_AllOtherSiSchedul\_Type](#NR_AllOtherSiSchedul_Type) | opt | scheduling of other SI |

NR\_SI\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SI\_List\_Type** |
| **Comment** | list of system information messages |
| record of BCCH\_DL\_SCH\_Message | |

NR\_SegmentedSI\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SegmentedSI\_List\_Type** |
| **Comment** | Each element is a list of segments; used for segmented SIBs  Used for SIB7/SIB8/SIB12 segmentation |
| record of [NR\_SI\_List\_Type](#NR_SI_List_Type) | |

NR\_PosSI\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PosSI\_Type** | |
| **Comment** |  | |
| PosSI | BCCH\_DL\_SCH\_Message | None of the AssistanceDataElement in the posSIBs in the SI are segmented. |
| SegmentedPosSIs | [NR\_SI\_List\_Type](#NR_SI_List_Type) | List of SI containing posSIBs containing segments of AssistanceDataElement, according to TS 37.355 clause 7.3.  SS shall schedule one element of the list (SegmentedPosSIs) in the si-window;  PosSiSchedulInfo[i] provides scheduling info for PosSIs[i].SegmentedPosSIs |

NR\_PosSI\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_PosSI\_List\_Type** |
| **Comment** | Each element is an SI including posSIBs or a list of SI containing posSIBs containing segments of AssistanceDataElement. |
| record of [NR\_PosSI\_Type](#NR_PosSI_Type) | |

NR\_BcchInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BcchInfo\_Type** | | |
| **Comment** | Configuration of system information message contents to be scheduled at the SS | | |
| MIB | BCCH\_BCH\_Message | opt | TS 38.331, clause 6.2.1 BCCH-BCH-Message and clause 6.2.2 MIB;  NOTE:  the system frame number included in MIB needs to be handled and maintained by the system simulator;  that means that the system frame number being setup by TTCN shall be ignored and overwritten by the SS |
| SIB1 | BCCH\_DL\_SCH\_Message | opt | TS 38.331, clause 6.2.1 BCCH-DL-SCH-Message and clause 6.2.2 SIB1 |
| SIs | [NR\_SI\_List\_Type](#NR_SI_List_Type) | opt | list of SIs corresponding to SiList of NR\_AllOtherSiSchedul\_Type  (i.e. element i of NR\_AllOtherSiSchedul\_Type's SiList specifies the scheduling for SIs[i]) |
| SegmentedSIs | [NR\_SegmentedSI\_List\_Type](#NR_SegmentedSI_List_Type) | opt | list of SIs containing segmented SIBs;  corresponds to SegmentedSiList in NR\_AllOtherSiSchedul\_Type |
| PosSIs | [NR\_PosSI\_List\_Type](#NR_PosSI_List_Type) | opt | list of SIs containing posSIBs corresponding to PosSiSchedulInfo of NR\_AllOtherSiSchedul\_Type  (i.e. element i of NR\_AllOtherSiSchedul\_Type's PosSiSchedulInfo specifies the scheduling for posSIs[i]) |

NR\_BcchConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_BcchConfig\_Type** | | |
| **Comment** | Configuration of system information scheduling and content at the SS | | |
| Pbch | [NR\_BcchToPbchConfig\_Type](#NR_BcchToPbchConfig_Type) | opt |  |
| Pdsch | [NR\_BcchToPdschConfig\_Type](#NR_BcchToPdschConfig_Type) | opt |  |
| BcchInfo | [NR\_BcchInfo\_Type](#NR_BcchInfo_Type) | opt |  |

### D.1.3.5 Paging\_Control

Primitive to configuration PCCH/PCH

NR\_PcchConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PcchConfig\_Type** | | |
| **Comment** | configuration for PCCH mapped to PCH mapped to PDSCH | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | in general Paging happens at the BWP currently being configured as active BWP at the SS and Type2-PDCCH common search space is used for scheduling;  NOTE 1: there is no use case to schedule Paging simultaneously in multiple BWPs  NOTE 2: the DCI may or may not carry a short message but it in any case it shall indicate presence of the paging  (to send only a short message the "DciTrigger" primitive shall be used) |

### D.1.3.6 CCCH\_DCCH\_DTCH\_Configuration

NR\_DcchDtchConfigDL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DcchDtchConfigDL\_Type** | | |
| **Comment** | configuration for DCCH/DTCH mapped to DL-SCH mapped to DL-SCH mapped to PDSCH;  NOTE: in contrast to EUTRA the configuration of HARQ processes to be used is done as part of DCI configuration | | |
| SearchSpaceAndDci | [NR\_SearchSpaceDlDciAssignment\_Type](#NR_SearchSpaceDlDciAssignment_Type) | opt | in general DCCH/DTCH transmissions happen at the BWP currently being the active BWP at the SS and the UE specific search space is used for scheduling;  DCI configuration for Msg2 of the RACH procedure is done as part of the RACH procedure configuration (NR\_RandomAccessResponseConfig\_Type) |

NR\_DcchDtchConfigUL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DcchDtchConfigUL\_Type** | | |
| **Comment** | scheduling for DCCH/DTCH mapped to UL-SCH mapped to PUSCH | | |
| SearchSpaceAndDci | [NR\_SearchSpaceUlDciAssignment\_Type](#NR_SearchSpaceUlDciAssignment_Type) | opt | in general DCCH/DTCH transmissions happen at the BWP currently being the active BWP at the SS and the UE specific search space is used for scheduling |
| PUCCH\_Synch | [NR\_UplinkTimeAlignment\_Synch\_Type](#NR_UplinkTimeAlignment_Synch_Type) | opt | parameters for automatic control of timing advance |
| GrantConfig | [UL\_GrantConfig\_Type](#UL_GrantConfig_Type) | opt | configuration how UL grant allocation is done (as response to scheduling request, periodically, etc. |

NR\_DrxCtrl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DrxCtrl\_Type** | |
| **Comment** | DRX configuration for connected mode (TS 38.321, clause 5.7) | |
| None | [Null\_Type](#Null_Type) | DRX not configured |
| Config | [NR\_ASN1\_DRX\_Config\_Type](#NR_ASN1_DRX_Config_Type) | DRX is configured as signalled to the UE |

NR\_MeasGapCtrl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MeasGapCtrl\_Type** | |
| **Comment** | support of measurement gap configuration | |
| None | [Null\_Type](#Null_Type) | no measurement gap configuration |
| Config | [NR\_ASN1\_MeasGapConfig\_Type](#NR_ASN1_MeasGapConfig_Type) | measurement gap configuration acc. to TS 38.331, clause 5.5.2.9;  NOTE: the release branch of MeasGapConfig in general is not used for configuration of the SS |

NR\_DcchDtchConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DcchDtchConfig\_Type** | | |
| **Comment** |  | | |
| DL | [NR\_DcchDtchConfigDL\_Type](#NR_DcchDtchConfigDL_Type) | opt | Scheduling, parameters related to DCCH and DTCH in DL |
| UL | [NR\_DcchDtchConfigUL\_Type](#NR_DcchDtchConfigUL_Type) | opt | Scheduling, parameters related to DCCH and DTCH in UL |
| DrxCtrl | [NR\_DrxCtrl\_Type](#NR_DrxCtrl_Type) | opt | DRX configuration as sent to the UE (or 'None' when the UE does not support connected mode DRX) |
| MeasGapCtrl | [NR\_MeasGapCtrl\_Type](#NR_MeasGapCtrl_Type) | opt | to tell the SS when no assignments/grants shall be assigned to the UE |

### D.1.3.7 Cell\_Group\_Configuration

Configuration of cell group(s) in terms of dual connectivity and carrier aggregation

Cell\_Group\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_ServingCellIndex\_Type** | integer | corresponds to ASN.1 (v15.1.0) definitions SCellIndex (1..31) and ServCellIndex (0..maxNrofServingCells-1):  According to ASN.1 "The value range is shared across the Cell Groups" and "the PCell of the Master Cell Group uses ID = 0" |

NR\_ServingCellConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ServingCellConfig\_Type** | |
| **Comment** | serving cell capabilities of a cell | |
| SpCell | [NR\_SpCellConfig\_Type](#NR_SpCellConfig_Type) | parameters specific for an SpCell and cell group configuration |
| SCell | [NR\_SCellConfig\_Type](#NR_SCellConfig_Type) | parameters specific for an SCell |
| None | [Null\_Type](#Null_Type) | the is no serving cell at all (e.g. neighbouring cell only) |

NR\_SCellConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SCellConfig\_Type** | | |
| **Comment** | cell parameters specific for an SCell;  NOTE: the corresponding SpCell can be derived from the SpCell's SCellList;  further parameters may be added according to test requirements for CA test cases | | |
| ServingCellIndex | [NR\_ServingCellIndex\_Type](#NR_ServingCellIndex_Type) | opt |  |
| TAG\_Id | TAG\_Id | opt | Id of the Timing Advance Group the SCell belongs to (according to TS 38.321 clause 6.1.3.4 the SpCell has the TAG Identity 0);  the SS shall use the given TAG\_Id e.g. for automatic time alignment in UL (see NR\_UplinkTimeAlignment\_AutoSynch\_Type) |

NR\_SpCellConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SpCellConfig\_Type** | | |
| **Comment** | cell parameters specific for an SpCell (PCell of the MCG or the PSCell of the SCG) and additionall parameters of the cell group;  further parameters may be added according to test requirements for CA test cases | | |
| ServingCellIndex | [NR\_ServingCellIndex\_Type](#NR_ServingCellIndex_Type) | opt |  |
| CellGroupConfig | [NR\_SpCell\_CellGroupConfig\_Type](#NR_SpCell_CellGroupConfig_Type) | opt | parameters of the cell group of which the cell is SpCell (PCell or PSCell):  assigned to SpCell as in many test cases the cell group consists of the SpCell only and on the other hand every cell group has to have at least an SpCell |

NR\_SpCell\_CellGroupConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SpCell\_CellGroupConfig\_Type** | | |
| **Comment** | Configuration of an NR cell group;  NOTE 1:  The type of cell group (MCG, SCG) may be derived from the CellGroupId (CellGroupId==0 => MCG, CellGroupId>0 => SCG)  NOTE 2:  Further cell group specific MAC and PHY parameters may be added corresponding to ASN.1 MAC-CellGroupConfig or may need to be added  (but e.g. the DRX configuration is assigned to NR\_CcchDcchDtchConfig\_Type already i.e. there is no need to configure it here) | | |
| CellGroupId | CellGroupId | opt | 0 for MCG (i.e. EUTRA in EN-DC), 1 for SCG (NR in EN-DC); see comments to ASN.1 definition of CellGroupId (v15.1.0) |
| SCellList | [NR\_CellIdList\_Type](#NR_CellIdList_Type) | opt | list of SCells belonging to the SpCell's cell group; shall be initialised as empty list |
| MAC\_CellGroupConfig | [NR\_ASN1\_MAC\_CellGroupConfig\_Type](#NR_ASN1_MAC_CellGroupConfig_Type) | opt | Cell group specific MAC parameters as sent to the UE in CellGroupConfig.MAC-CellGroupConfig |
| PhysicalCellGroupConfig | [NR\_ASN1\_PhysicalCellGroupConfig\_Type](#NR_ASN1_PhysicalCellGroupConfig_Type) | opt | Cell group specific physical layer parameters as sent to the UE in CellGroupConfig.PhysicalCellGroupConfig |

## D.1.4 Cell\_Power\_Attenuation

NR\_CellAttenuationConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CellAttenuationConfig\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |
| Attenuation | [NR\_Attenuation\_Type](#NR_Attenuation_Type) |  |  |
| TimingInfo | [TimingInfo\_Type](#TimingInfo_Type) | opt |  |

NR\_CellAttenuationList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_CellAttenuationList\_Type** |
| **Comment** |  |
| record of [NR\_CellAttenuationConfig\_Type](#NR_CellAttenuationConfig_Type) | |

## D.1.5 Radio\_Bearer\_Configuration

Radio Bearer Configuration: SRBs/DRBs  
NOTE: Type definitions for PDCP configuration are in NR\_PDCP\_TypeDefs

NR\_RlcBearerConfigInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RlcBearerConfigInfo\_Type** | | |
| **Comment** | RLC bearer as defined in TS 37.340: RLC and MAC logical channel configuration of a radio bearer in one cell group | | |
| Rlc | [NR\_RLC\_Configuration\_Type](#NR_RLC_Configuration_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| LogicalChannelId | [NR\_LogicalChannelId\_Type](#NR_LogicalChannelId_Type) | opt | DRBs: DTCH-LogicalChannelIdentity as for rb-MappingInfo in DRB-ToAddModifyList;  SRBs: for SRBs specified configurations acc. to 38.331 clause 9.2.1 shall be applied:  SRB1: ul-LogicalChannel-Identity = dl-LogicalChannel-Identity = 1  SRB2: ul-LogicalChannel-Identity = dl-LogicalChannel-Identity = 2  SRB3: ul-LogicalChannel-Identity = dl-LogicalChannel-Identity = 3  for SRB0 being mapped to CCCH the SS shall apply  - LCID=0 for DL according to TS 38.321 Table 6.2.1-1  - LCID=0 or LCID=52 for UL according to TS 38.321 Table 6.2.1-2 depending on whether it is a CCCH1 or a CCCH message;  For DRBs and SRBs - except SRB0: mandatory for initial configuration; omit means "keep as it is"  For SRB0 LogicalChannelId is always omit and the SS shall apply the LCIDs according to TS 38.321 |
| Mac | [NR\_MAC\_Configuration\_Type](#NR_MAC_Configuration_Type) | opt |  |
| DiscardULData | boolean | opt | if omitted:  initial configuration: data is handed over to TTCN as usual  re-configuration: "keep as it is"  if set:  true - SS shall discard any data in UL for this radio bearer  false - (re)configuration back to normal mode  NOTE: typically applicable for UM DRBs only |

NR\_RlcBearerConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RlcBearerConfig\_Type** | |
| **Comment** | configuration of RLC bearer below NR-PDCP | |
| Config | [NR\_RlcBearerConfigInfo\_Type](#NR_RlcBearerConfigInfo_Type) | "normal" configuration: there is an RLC bearer configured for the cell which is linked to the PDCP being configured at the cell (the PDCP can be either 'RBTerminating' or 'Proxy') |
| None | [Null\_Type](#Null_Type) | No RLC bearer is configured at NR below the NR-PDCP:  NR\_PDCP\_Configuration\_Type shall be 'RBTerminating' with LinkToOtherCellGroup indicating cell with RLC bearer to be used |

NR\_RadioBearerConfigInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RadioBearerConfigInfo\_Type** | | |
| **Comment** |  | | |
| Sdap | [SDAP\_Configuration\_Type](#SDAP_Configuration_Type) | opt | omitted for EN-DC, otherwise mandatory for initial configuration;  omit means "keep as it is"  for SRBs: Sdap.None:=true |
| Pdcp | [NR\_PDCP\_Configuration\_Type](#NR_PDCP_Configuration_Type) | opt | for SRB0: "Pdcp.None:=true"  mandatory for initial configuration; omit means "keep as it is" |
| RlcBearer | [NR\_RlcBearerConfig\_Type](#NR_RlcBearerConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

NR\_RadioBearerConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RadioBearerConfig\_Type** | |
| **Comment** |  | |
| AddOrReconfigure | [NR\_RadioBearerConfigInfo\_Type](#NR_RadioBearerConfigInfo_Type) | add / re-configure RB |
| Release | [Null\_Type](#Null_Type) | release RB |

NR\_RadioBearer\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RadioBearer\_Type** | | |
| **Comment** |  | | |
| Id | [NR\_RadioBearerId\_Type](#NR_RadioBearerId_Type) |  | either for SRB or DRB |
| Config | [NR\_RadioBearerConfig\_Type](#NR_RadioBearerConfig_Type) |  |  |

NR\_RadioBearerList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RadioBearerList\_Type** |
| **Comment** | array of SRBs and/or DRBs.  TimingInfo: 'Now' in general;  activation time may be used in special case for release and/or reconfiguration of one or several RBs;  the following rules shall be considered:  - release/Reconfiguration of an RB shall not be scheduled earlier than 5ms after a previous data transmission on this RB  - subsequent release and reconfiguration(s) shall be scheduled with an interval of at least 5ms  - a subsequent data transmission on an RB shall not be scheduled earlier than 5ms after the last reconfiguration of the RB  the configuration shall be performed exactly at the given time  ControlInfo : FollowOnFlag:=false (unless explicitly specified otherwise in TS 38.523-3 clause 7) |
| record of [NR\_RadioBearer\_Type](#NR_RadioBearer_Type) | |

### D.1.5.1 RLC\_Configuration

RLC configuration: radio bearer specific

RLC\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SS\_RLC\_TM\_Type** | [Null\_Type](#Null_Type) | TM to configure SRB0; no parameters to be defined |

NR\_RLC\_ACK\_Prohibit\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_RLC\_ACK\_Prohibit\_Type** |
| **Comment** | As per 38.523-3 cl. 7.1.6.1 |
| Prohibit | cause SS RLC layer to stop any ACK transmission for UL PDUs received from UE |
| Continue | bring back the SS RLC in normal mode, where ACK/NACK are transmitted at polling |

NR\_RLC\_NotACK\_NextRLC\_PDU\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_RLC\_NotACK\_NextRLC\_PDU\_Type** |
| **Comment** | As per 38.523-3 cl. 7.1.6.1 |
| Start | cause SS RLC layer not to ACK the next received RLC PDU;  this is done regardless of whether the poll bit is set or not;  Example [from UMTS]:  when the UE gets new security information in a SECURITY MODE COMMAND  the response (SECURITY MODE COMPLETE) sent by the UE is not acknowledged at the RLC level;  this causes the UE to continue using the "old" security information |

NR\_RLC\_TransparentMode

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_TransparentMode** | |
| **Comment** |  | |
| Umd | SN\_FieldLengthUM | SN-FieldLengthUM ::= ENUMERATED {size6, size12} TS 38.331 |
| Amd | SN\_FieldLengthAM | SN-FieldLengthAM ::= ENUMERATED {size12, size18} TS 38.331 |

NR\_RLC\_TestModeInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_TestModeInfo\_Type** | |
| **Comment** |  | |
| AckProhibit | [NR\_RLC\_ACK\_Prohibit\_Type](#NR_RLC_ACK_Prohibit_Type) | valid only when the RLC is configured in AM |
| NotACK\_NextRLC\_PDU | [NR\_RLC\_NotACK\_NextRLC\_PDU\_Type](#NR_RLC_NotACK_NextRLC_PDU_Type) | valid only when the RLC is configured in AM |
| TransparentMode | [NR\_RLC\_TransparentMode](#NR_RLC_TransparentMode) |  |

NR\_RLC\_TestModeConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_TestModeConfig\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| Info | [NR\_RLC\_TestModeInfo\_Type](#NR_RLC_TestModeInfo_Type) |  |

NR\_SS\_RLC\_AM\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SS\_RLC\_AM\_Type** | | |
| **Comment** |  | | |
| Tx | [NR\_ASN1\_UL\_AM\_RLC\_Type](#NR_ASN1_UL_AM_RLC_Type) | opt | the UE's UL setting to be used in SS's tx direction |
| Rx | [NR\_ASN1\_DL\_AM\_RLC\_Type](#NR_ASN1_DL_AM_RLC_Type) | opt | the UE's DL setting to be used in SS's rx direction |

NR\_SS\_RLC\_UM\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SS\_RLC\_UM\_Type** | | |
| **Comment** |  | | |
| Tx | [NR\_ASN1\_UL\_UM\_RLC\_Type](#NR_ASN1_UL_UM_RLC_Type) | opt | the UE's UL setting to be used in SS's tx direction |
| Rx | [NR\_ASN1\_DL\_UM\_RLC\_Type](#NR_ASN1_DL_UM_RLC_Type) | opt | the UE's DL setting to be used in SS's rx direction |

NR\_RLC\_RbConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_RbConfig\_Type** | |
| **Comment** |  | |
| AM | [NR\_SS\_RLC\_AM\_Type](#NR_SS_RLC_AM_Type) |  |
| UM | [NR\_SS\_RLC\_UM\_Type](#NR_SS_RLC_UM_Type) |  |
| TM | [NR\_SS\_RLC\_TM\_Type](#NR_SS_RLC_TM_Type) | normally SRB0 only; may be used for test purposes also |

NR\_RLC\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_Configuration\_Type** | | |
| **Comment** |  | | |
| Rb | [NR\_RLC\_RbConfig\_Type](#NR_RLC_RbConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| TestMode | [NR\_RLC\_TestModeConfig\_Type](#NR_RLC_TestModeConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

### D.1.5.2 MAC\_Configuration

MAC configuration: radio bearer specific configuration

MAC\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_LogicalChannelId\_Type** | [UInt\_Type](#UInt_Type) |  |

NR\_MAC\_Test\_DLLogChID\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MAC\_Test\_DLLogChID\_Type** | |
| **Comment** |  | |
| LogChId | [NR\_LogicalChannelId\_Type](#NR_LogicalChannelId_Type) | Specifies to over write the logical channel ID in MAC header in all the DL messages sent on the configured logical channel |
| ConfigLchId | [Null\_Type](#Null_Type) | Specifies that the normal mode of correct logical channel ID to be used in DL MAc header.  This will be the default mode, when SS is initially configured. |

NR\_MAC\_Test\_SCH\_NoHeaderManipulation\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_MAC\_Test\_SCH\_NoHeaderManipulation\_Type** |
| **Comment** |  |
| NormalMode | MAC header is fully controlled by the SS |
| DL\_SCH\_Only | TTCN can submit a final MAC PDU including header and payloads;  SS does not do anything with this MAC PDU i.e. no header is added for the DL SCH transport channel.  It is possible that data belonging to multiple DRBs is sent in one MAC PDU and from one special RB configured.  NOTE: SRBs shall work as in normal mode and data can be sent/received on SRBs but sending on SRBs shall be in different TTIs than sending data PDUs. |
| DL\_UL\_SCH | In UL and DL the SS' MAC layer is transparent i.e. SS does not add or remove any MAC header |

NR\_MAC\_TestModeInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_TestModeInfo\_Type** | | |
| **Comment** | Parameters/Configuration for MAC tests | | |
| DiffLogChId | [NR\_MAC\_Test\_DLLogChID\_Type](#NR_MAC_Test_DLLogChID_Type) |  | to be used in test cases 7.1.1.1 and 7.1.1.2 for using a different logical channel ID in MAC-header on DL-SCH channel |
| No\_HeaderManipulation | [NR\_MAC\_Test\_SCH\_NoHeaderManipulation\_Type](#NR_MAC_Test_SCH_NoHeaderManipulation_Typ) |  | to configure mode for no header manipulation in SS MAC layer for DL/UL SCH |

NR\_MAC\_TestModeConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MAC\_TestModeConfig\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| Info | [NR\_MAC\_TestModeInfo\_Type](#NR_MAC_TestModeInfo_Type) |  |

NR\_MAC\_LogicalChannelConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_LogicalChannelConfig\_Type** | | |
| **Comment** |  | | |
| Priority | integer |  | logical channel priority for the DL as described in TS 38.321, clause 5.4.3.1 for the UL |
| PrioritizedBitRate | [NR\_PrioritizedBitRate\_Type](#NR_PrioritizedBitRate_Type) |  | PBR as described for the UL; probably not needed at SS |

NR\_MAC\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_Configuration\_Type** | | |
| **Comment** |  | | |
| LogicalChannel | [NR\_MAC\_LogicalChannelConfig\_Type](#NR_MAC_LogicalChannelConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| TestMode | [NR\_MAC\_TestModeConfig\_Type](#NR_MAC_TestModeConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is";  for none MAC tests "TestMode.None:=true" |

## D.1.6 AS\_Security

Primitive for control of AS security

NR\_PdcpSQN\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PdcpSQN\_Type** | | |
| **Comment** |  | | |
| Format | [NR\_PdcpCountFormat\_Type](#NR_PdcpCountFormat_Type) |  | 12 bit or 18 bit SQN |
| Value | integer |  | SQN value (12 bit or 18 bit SQN)  NOTE:  in TTCN the test case writer is responsible to deal with potential overflows  (e.g. there shall be a "mod 32", "mod 128" or "mod 4096" according to the format) |

NR\_PDCP\_ActTime\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_ActTime\_Type** | |
| **Comment** | The sequence number in UL and DL for SRB1 should be one more than the present SQN, as Ciphering starts in UL and DL soon after SMC and SMComp;  For other SRB/DRB it should be the present SQN. | |
| None | [Null\_Type](#Null_Type) | No Activation time; to be used if Ciphering is not applied |
| SQN | [NR\_PdcpSQN\_Type](#NR_PdcpSQN_Type) | PDCP sequence number |

NR\_SecurityActTime\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SecurityActTime\_Type** | | |
| **Comment** |  | | |
| RadioBearerId | [NR\_RadioBearerId\_Type](#NR_RadioBearerId_Type) |  |  |
| UL | [NR\_PDCP\_ActTime\_Type](#NR_PDCP_ActTime_Type) |  |  |
| DL | [NR\_PDCP\_ActTime\_Type](#NR_PDCP_ActTime_Type) |  |  |

NR\_SecurityActTimeList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SecurityActTimeList\_Type** |
| **Comment** |  |
| record of [NR\_SecurityActTime\_Type](#NR_SecurityActTime_Type) | |

NR\_AS\_IntegrityInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_AS\_IntegrityInfo\_Type** | | |
| **Comment** | for initial configuration activation time is not needed for integrity protection as all messages in DL after security activation are integrity protected;  this means this ASP is invoked before transmission of Security mode command;  if there is a integrity violation in UL SS shall set the IndicationStatus in the common ASP part to flag the integrity error  (IndicationStatus.Error.Integrity.Pdcp := true);  integrity to be provided for each SRB as per core spec | | |
| Algorithm | IntegrityProtAlgorithm |  | IntegrityProtAlgorithm being defined in RRC ASN.1 |
| KRRCint | [B128\_Key\_Type](#B128_Key_Type) |  |  |
| KUPint | [B128\_Key\_Type](#B128_Key_Type) | opt | Not used when UE connected to EPS (i.e. set to omit for EPS) |
| ActTimeList | [NR\_SecurityActTimeList\_Type](#NR_SecurityActTimeList_Type) | opt | omit for initial configuration (i.e. all SRBs to be integrity protected immediately);  in HO scenarios activation time may be needed e.g. for SRB1 |

NR\_AS\_CipheringInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_AS\_CipheringInfo\_Type** | | |
| **Comment** |  | | |
| Algorithm | CipheringAlgorithm |  | CipheringAlgorithm\_Type being defined in RRC ASN.1 |
| KRRCenc | [B128\_Key\_Type](#B128_Key_Type) |  |  |
| KUPenc | [B128\_Key\_Type](#B128_Key_Type) |  | KUPenc is mandatory; and SS uses it when DRB are configured |
| ActTimeList | [NR\_SecurityActTimeList\_Type](#NR_SecurityActTimeList_Type) |  |  |

NR\_AS\_SecStartRestart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_AS\_SecStartRestart\_Type** | | |
| **Comment** |  | | |
| Integrity | [NR\_AS\_IntegrityInfo\_Type](#NR_AS_IntegrityInfo_Type) | opt | optional to allow separated activation of integrity and ciphering; omit: keep as it is |
| Ciphering | [NR\_AS\_CipheringInfo\_Type](#NR_AS_CipheringInfo_Type) | opt | optional to allow separated activation of integrity and ciphering; omit: keep as it is |

NR\_AS\_Security\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_AS\_Security\_Type** | |
| **Comment** | Security mode command procedure (TS 38.331, clause 5.3.4) | |
| StartRestart | [NR\_AS\_SecStartRestart\_Type](#NR_AS_SecStartRestart_Type) | information to start/restart AS security protection in the PDCP  TimingInfo : 'Now' (in general)  NOTE: "activation time" may be specified in the primitive based on PDCP SQN |
| Release | [Null\_Type](#Null_Type) | to release AS security protection in the PDCP  (if any; if there is no AS security the SS does not need to do anything)  TimingInfo : 'Now' (in general)  NOTE: "activation time" may be specified in the primitive based on PDCP SQN |

## D.1.7 Paging\_Trigger

NR\_SlotOffsetList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SlotOffsetList\_Type** |
| **Comment** |  |
| record length (1..infinity) of integer | |

NR\_PagingTrigger\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PagingTrigger\_Type** | | |
| **Comment** | to trigger transmission of a paging message on the PCCH at a calculated paging occasion (TS 38.304, clause 7);  the paging occasion is calculated by TTCN and activation time is applied  TimingInfo : Calculated paging occasion | | |
| Paging | PCCH\_Message |  | paging to be send out at paging occasion and being announced on PDCCH using P-RNTI  SS shall add the necessary padding bits as specified in TS 38.331, clause 8.5 |
| SlotOffsetList | [NR\_SlotOffsetList\_Type](#NR_SlotOffsetList_Type) | opt | list of slot offsets relative to the absolute timing information given in the common part of the ASP;  if present, multiple pagings are sent out at all occasions given by the list;  if omitted only a single paging is sent at the occasion given by the timing information in the common part of the ASP |

## D.1.8 Delta\_Value\_Trigger

NR\_Band\_SsbForDelta\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_Band\_SsbForDelta\_Type** | | |
| **Comment** | Primary and secondary bands for requesting Delta values  CellId: nr\_Cell\_NonSpecific  TimingInfo : 'Now' | | |
| DeltaPrimary | [Band\_SsbInfo\_Type](#Band_SsbInfo_Type) |  |  |
| DeltaSecondary | [Band\_SsbInfo\_Type](#Band_SsbInfo_Type) |  |  |

Band\_SsbInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **Band\_SsbInfo\_Type** | | |
| **Comment** | Band and SSB Frequency value for which Delta values are requested | | |
| DeltaBand | FreqBandIndicatorNR |  |  |
| Ssb\_NRf1 | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |
| Ssb\_NRf2 | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |
| Ssb\_NRf3 | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |
| Ssb\_NRf4 | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |

## D.1.9 System\_Indication\_Control

Primitive for control of system indications for special purposes

NR\_System\_IndicationControl\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_System\_IndicationControl\_Type** | | |
| **Comment** | Initially all indications apart from "Error" are disabled in SS  (i.e. it shall not be necessary in 'normal' test cases to use this primitive but only if a specific indication is needed);  omit means indication mode is not changed.  TimingInfo : 'Now' (in general) | | |
| RLC\_Discard | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of discarded RLC PDUs |
| MAC\_BSR | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of short/long BSR |
| MAC\_PHR | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of short/long PHR |
| RachPreamble | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of PRACH preamble |
| SchedReq | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of Scheduling Request |
| UL\_HARQ | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of reception of HARQ ACK/NACK |
| HarqError | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of HARQ errors |
| RecommendedBitRate | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | opt | To enable/disable reporting of Recommended bit rate MAC CE received in UL MAC PDU |

## D.1.10 PDCP\_Count

Primitives to enquire PDCP COUNT

NR\_PdcpCountFormat\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_PdcpCountFormat\_Type** |
| **Comment** |  |
| PdcpCount\_Srb | 20 bit HFN; 12 bit SQN |
| PdcpCount\_DrbSQN12 | 20 bit HFN; 12 bit SQN |
| PdcpCount\_DrbSQN18 | 14 bit HFN; 18 bit SQN |

NR\_PdcpCount\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PdcpCount\_Type** | | |
| **Comment** |  | | |
| Format | [NR\_PdcpCountFormat\_Type](#NR_PdcpCountFormat_Type) |  |  |
| Value | [PdcpCountValue\_Type](#PdcpCountValue_Type) |  |  |

NR\_PdcpCountInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PdcpCountInfo\_Type** | | |
| **Comment** |  | | |
| RadioBearerId | [NR\_RadioBearerId\_Type](#NR_RadioBearerId_Type) |  |  |
| UL | [NR\_PdcpCount\_Type](#NR_PdcpCount_Type) | opt | omit: keep as it is |
| DL | [NR\_PdcpCount\_Type](#NR_PdcpCount_Type) | opt | omit: keep as it is |

NR\_PdcpCountInfoList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_PdcpCountInfoList\_Type** |
| **Comment** |  |
| record of [NR\_PdcpCountInfo\_Type](#NR_PdcpCountInfo_Type) | |

NR\_PdcpCountGetReq\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PdcpCountGetReq\_Type** | |
| **Comment** |  | |
| AllRBs | [Null\_Type](#Null_Type) | return COUNT values for all RBs being configured with Pdcp.RBTerminating in the NR Cell. |
| SingleRB | [NR\_RadioBearerId\_Type](#NR_RadioBearerId_Type) |  |

NR\_PDCP\_CountReq\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_CountReq\_Type** | |
| **Comment** |  | |
| Get | [NR\_PdcpCountGetReq\_Type](#NR_PdcpCountGetReq_Type) | Request PDCP count for one or all RBs being configured at the PDCP  TimingInfo: 'Now' |
| Set | [NR\_PdcpCountInfoList\_Type](#NR_PdcpCountInfoList_Type) | Set PDCP count for one or all RBs being configured at the PDCP;  list for RBs which's COUNT shall be manipulated  TimingInfo: 'Now' (in general)  activation time may be used in case of CA inter cell handover to set the PdcpCount |

NR\_PDCP\_CountCnf\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_CountCnf\_Type** | |
| **Comment** |  | |
| Get | [NR\_PdcpCountInfoList\_Type](#NR_PdcpCountInfoList_Type) | RBs in ascending order; SRBs first |
| Set | [Null\_Type](#Null_Type) |  |

## D.1.11 PDCP\_Handover

Primitives to control PDCP regarding handover

NR\_PDCP\_HandoverInit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_HandoverInit\_Type** | | |
| **Comment** |  | | |
| SourceCellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |

NR\_PDCP\_HandoverControlReq\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_HandoverControlReq\_Type** | |
| **Comment** |  | |
| HandoverInit | [NR\_PDCP\_HandoverInit\_Type](#NR_PDCP_HandoverInit_Type) | to inform SS that a handover (or PSCell change) will follow, for SS handling of PDCP context from the source cell to the target cell.  CellId : In the common ASP part the CellId shall be set to the id of the target cell  TimingInfo : 'Now' |
| HandoverComplete | [Null\_Type](#Null_Type) | to inform SS that the handover (or PSCell change) has successfully been performed by the UE;  this shall trigger the SS to send a PDCP Status Report on AM DRB(s) to the UE;  CellId : the CellId shall be set to the id of the target cell  TimingInfo : 'Now' |

## D.1.12 L1\_Test\_Mode

Primitive for control of L1 Test Modes

NR\_L1\_TestMode\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_L1\_TestMode\_Type** | | |
| **Comment** | TimingInfo : depends on the test mode; activation time is used e.g. for manipulation of the CRC | | |
| DL\_SCH\_CRC | [NR\_DL\_SCH\_CRC\_Type](#NR_DL_SCH_CRC_Type) |  | Manipulation of CRC bit generation for DL-SCH |

NR\_MAC\_Test\_DL\_SCH\_CRC\_Mode\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_MAC\_Test\_DL\_SCH\_CRC\_Mode\_Type** |
| **Comment** |  |
| Normal | default mode, the CRC generation is correct |
| Erroneous | SS shall generate CRC error by toggling CRC bits;  the CRC error shall be applied for all PDUs of the given RNTI and their retransmission until SS is configured back to 'normal' operation |
| Error1AndNormal | the SS generates wrong CRC for first transmission and correct CRC on first retransmission.  Later SS operates in normal mode. The retransmission is automatically triggered by reception of HARQ NACK |

NR\_DL\_SCH\_CRC\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DL\_SCH\_CRC\_Type** | |
| **Comment** | NOTE:  CRC error mode for RA\_RNTI is not addressed as it will be configured in RACHProcedureConfig | |
| C\_RNTI | [NR\_MAC\_Test\_DL\_SCH\_CRC\_Mode\_Type](#NR_MAC_Test_DL_SCH_CRC_Mode_Type) | to configure mode for CRC bit for all MAC PDUs for which C-RNTI is used in PDCCH transmission |
| SI\_RNTI | [NR\_MAC\_Test\_DL\_SCH\_CRC\_Mode\_Type](#NR_MAC_Test_DL_SCH_CRC_Mode_Type) | to configure mode for CRC bit for all MAC PDUs for which SI-RNTI is used in PDCCH transmission |
| CS\_RNTI | [NR\_MAC\_Test\_DL\_SCH\_CRC\_Mode\_Type](#NR_MAC_Test_DL_SCH_CRC_Mode_Type) | to configure mode for CRC bit for all MAC PDUs for which CS-RNTI is used in PDCCH transmission |

## D.1.13 DCI\_Trigger

Primitive to trigger SS to send specific DCI (e.g. PDCCH order) which is not associated with any PDSCH or PUSCH transmission

NR\_DCI\_Trigger\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DCI\_Trigger\_Type** | | |
| **Comment** | TimingInfo : 'Now' or specific activation time | | |
| AssignedBWPs | [NR\_AssignedBWPs\_Type](#NR_AssignedBWPs_Type) |  | BWP which shall be used to schedule the DCI |
| SearchSpaceType | [NR\_SearchSpaceType\_Type](#NR_SearchSpaceType_Type) |  | search space to be used for sending of given DCI;  the SS may raise an error when there is no such search space at the scheduled point in time |
| DciFormat | [NR\_DCI\_TriggerFormat\_Type](#NR_DCI_TriggerFormat_Type) |  |  |

NR\_DCI\_TriggerFormat\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DCI\_TriggerFormat\_Type** | |
| **Comment** |  | |
| PdcchOrder | [NR\_PDCCH\_Order\_Type](#NR_PDCCH_Order_Type) |  |
| ShortMessage | [NR\_DciWithShortMessageOnly\_Type](#NR_DciWithShortMessageOnly_Type) |  |
| DciFormat\_2\_0 | [NR\_DciFormat\_2\_0\_Type](#NR_DciFormat_2_0_Type) |  |
| DciFormat\_2\_1 | [NR\_DciFormat\_2\_1\_Type](#NR_DciFormat_2_1_Type) |  |
| DciFormat\_2\_2 | [NR\_DciFormat\_2\_2\_Type](#NR_DciFormat_2_2_Type) |  |
| DciFormat\_2\_3 | [NR\_DciFormat\_2\_3\_Type](#NR_DciFormat_2_3_Type) |  |
| DciFormat\_2\_6 | [NR\_DciFormat\_2\_6\_Type](#NR_DciFormat_2_6_Type) |  |

NR\_DciWithShortMessageOnly\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciWithShortMessageOnly\_Type** | | |
| **Comment** | "stand-alone" DCI with CRC scrambled by P-RNTI with no PCCH-Message being associated;  => all fields apart from the ones listed in this record are reserved  (see TS 38.212 clause 7.3.1.2.1) | | |
| ShortMessageIndicator | [B2\_Type](#B2_Type) |  | Short Message Indicator according to TS 38.212 Table 7.3.1.2.1-1;  to be set to '10'B indicating that only short message is present in the DCI |
| ShortMessages | [B8\_Type](#B8_Type) |  | Short Messages according to TS 38.331 Table 6.5-1 |
| SlotOffsetList | [NR\_SlotOffsetList\_Type](#NR_SlotOffsetList_Type) | opt | list of slot offsets relative to the absolute timing information given in the common part of the ASP;  if present, multiple short messages are sent out at all occasions given by the list;  if omitted only a single short message is sent at the occasion given by the timing information in the common part of the ASP |

NR\_PDCCH\_Order\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCCH\_Order\_Type** | | |
| **Comment** | PDCCH order accordingt to TS 38.212 clause 7.3.1.2.1 to initiate RA procedure (TS 38.321, clause 5.1.1):  DCI format 1\_0 with CRC scrambled by C-RNTI and the "Frequency domain resource assignment" field are of all ones | | |
| RA\_PreambleIndex | [B6\_Type](#B6_Type) |  | ra-PreambleIndex according to TS 38.321 clause 5.1.2 |
| UL\_SUL\_Indicator | [NR\_DciCommon\_UL\_SUL\_Indicator\_Type](#NR_DciCommon_UL_SUL_Indicator_Type) |  | indicates which UL carrier in the cell to transmit the PRACH if the UE is configured with SUL in the cell and RA\_PreambleIndex != '000000'B;  "None" otherwise |
| SSB\_Index | [B6\_Type](#B6_Type) |  | indicates the SS/PBCH that shall be used to determine the RACH occasion for the PRACH transmission if RA\_PreambleIndex != '000000'B;  '000000'B (reserved) otherwise |
| PrachMaskIndex | [B4\_Type](#B4_Type) |  | indicates the RACH occasion associated with the SS/PBCH indicated by "SS/PBCH index" for the PRACH transmission, according to TS 38.321 clause 5.1.1;  '0000'B (reserved) otherwise |

NR\_DciFormat\_2\_0\_SfiList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciFormat\_2\_0\_SfiList\_Type** |
| **Comment** | list of SFI-indexes as used as slotFormatCombinationId in SlotFormatCombination (see TS 38.331):  Each index addresses the SlotFormatCombination for a serving cell in SlotFormatCombinationsPerCell (the position is given by 'positionInDCI');  the size of each SFI-index depends on the maximum value of slotFormatCombinationIds (maxSFIindex) in the sequence of SlotFormatCombinations:  SFI-index-length = MAX(CEIL(log2(maxSFIindex+1)), 1); see TS 38.213 clause 11.1.1;  !!!! NR OPEN ISSUE: it is not fully clear whether the maximum slotFormatCombinationId is determined per Cell or over all cells !!!!  !!!! ASSUMPTION: it is per cell and therefore different SFI-indexes may use bitstrings of different length !!!! |
| record of bitstring | |

NR\_DciFormat\_2\_0\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_0\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.1: for notifying the slot format;  default parameters according to TS 38.508-1 clause 4.3.6.1.3.1 | | |
| SfiList | [NR\_DciFormat\_2\_0\_SfiList\_Type](#NR_DciFormat_2_0_SfiList_Type) |  |  |

NR\_DciFormat\_2\_1\_IntValueList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciFormat\_2\_1\_IntValueList\_Type** |
| **Comment** | list of 14 bit INT values per serving cell (see DownlinkPreemption, INT-ConfigurationPerServingCell in TS 38.331 and TS 38.213 clause 11.2) |
| record length (1..9) of [B14\_Type](#B14_Type) | |

NR\_DciFormat\_2\_1\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_1\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.2: notifying the PRB(s) and OFDM symbol(s) where UE may assume no transmission is intended for the UE;  default parameters according to TS 38.508-1 clause 4.3.6.1.3.2 | | |
| IntValueList | [NR\_DciFormat\_2\_1\_IntValueList\_Type](#NR_DciFormat_2_1_IntValueList_Type) |  |  |

NR\_DciFormat\_2\_2\_ClosedLoopIndicator\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_2\_ClosedLoopIndicator\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.3: Closed loop indicator | | |
| None | [Null\_Type](#Null_Type) |  | 0 bit if the UE is not configured with higher layer parameter twoPUSCH-PC-AdjustmentStates |
| Index | [B1\_Type](#B1_Type) |  | 1 bit otherwise |

NR\_DciFormat\_2\_2\_TpcBlock\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_2\_2\_TpcBlock\_Type** | |
| **Comment** | TS 38.212 clause 7.3.1.3.3: single TPC block | |
| ClosedLoopIndicator | [NR\_DciFormat\_2\_2\_ClosedLoopIndicator\_Type](#NR_DciFormat_2_2_ClosedLoopIndicator_Typ) |  |
| TpcCommand | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) |  |

NR\_DciFormat\_2\_2\_TpcBlockList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciFormat\_2\_2\_TpcBlockList\_Type** |
| **Comment** | list of TPC blocks according to TS 38.212 clause 7.3.1.3.3;  beginning of each block is configured at the UE by tpc-IndexPCell or tpc-IndexPUCCH-SCell for PUCCH and by tpc-Index or tpc-IndexSUL for PUCCH  (see PUCCH-TPC-CommandConfig and PUSCH-TPC-CommandConfig in TS 38.331 and TS 38.213 clause 11.3) |
| record of [NR\_DciFormat\_2\_2\_TpcBlock\_Type](#NR_DciFormat_2_2_TpcBlock_Type) | |

NR\_DciFormat\_2\_2\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_2\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.3: for the transmission of TPC commands for PUCCH and PUSCH;  default parameters according to TS 38.508-1 clause 4.3.6.1.3.3 | | |
| TpcBlockList | [NR\_DciFormat\_2\_2\_TpcBlockList\_Type](#NR_DciFormat_2_2_TpcBlockList_Type) |  |  |

NR\_DciFormat\_2\_3\_SrsRequest\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_3\_SrsRequest\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.4: according to TS 38.213 clause 11.4 the presence of SRS request(s) depends on fieldTypeFormat2-3 (see SRS-TPC-CommandConfig in TS 38.331) | | |
| None | [Null\_Type](#Null_Type) |  | 0 bit: no SRS request |
| SrsRequestValue | [B2\_Type](#B2_Type) |  | 2 bits: Index of the SRS resource set to be used according to TS 38.212 Table 7.3.1.1.2-24 |

NR\_DciCommon\_TpcCommandList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciCommon\_TpcCommandList\_Type** |
| **Comment** |  |
| record of [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) | |

NR\_DciFormat\_2\_3\_TypeA\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_3\_TypeA\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.4: srs-TPC-PDCCH-Group = typeA (see SRS-CarrierSwitching in TS 38.331) | | |
| SrsRequest | [NR\_DciFormat\_2\_3\_SrsRequest\_Type](#NR_DciFormat_2_3_SrsRequest_Type) |  |  |
| TpcCommandList | [NR\_DciCommon\_TpcCommandList\_Type](#NR_DciCommon_TpcCommandList_Type) |  |  |

NR\_DciFormat\_2\_3\_SingleBlockTypeB\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_3\_SingleBlockTypeB\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.4: srs-TPC-PDCCH-Group = typeB (see SRS-CarrierSwitching in TS 38.331) | | |
| SrsRequest | [NR\_DciFormat\_2\_3\_SrsRequest\_Type](#NR_DciFormat_2_3_SrsRequest_Type) |  |  |
| TpcCommand | [NR\_DciCommon\_TpcCommand\_Type](#NR_DciCommon_TpcCommand_Type) |  |  |

NR\_DciFormat\_2\_3\_TypeB\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciFormat\_2\_3\_TypeB\_Type** |
| **Comment** |  |
| record of [NR\_DciFormat\_2\_3\_SingleBlockTypeB\_Type](#NR_DciFormat_2_3_SingleBlockTypeB_Type) | |

NR\_DciFormat\_2\_3\_TypeA\_B\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_DciFormat\_2\_3\_TypeA\_B\_Type** | |
| **Comment** |  | |
| TypeA | [NR\_DciFormat\_2\_3\_TypeA\_Type](#NR_DciFormat_2_3_TypeA_Type) | Type-A as indicated in srs-TPC-PDCCH-Group (see SRS-CarrierSwitching in TS 38.331) |
| TypeB | [NR\_DciFormat\_2\_3\_TypeB\_Type](#NR_DciFormat_2_3_TypeB_Type) | Type-B as indicated in srs-TPC-PDCCH-Group (see SRS-CarrierSwitching in TS 38.331) |

NR\_DciFormat\_2\_3\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_3\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.4: for the transmission of a group of TPC commands for SRS transmissions by one or more UEs;  default parameters according to TS 38.508-1 clause 4.3.6.1.3.4 | | |
| TypeA\_B | [NR\_DciFormat\_2\_3\_TypeA\_B\_Type](#NR_DciFormat_2_3_TypeA_B_Type) |  |  |

NR\_DciFormat\_2\_6\_Block\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_6\_Block\_Type** | | |
| **Comment** |  | | |
| WakeupIndication | [B1\_Type](#B1_Type) |  |  |
| SCellDormacyIndication | [NR\_DciFormat\_X\_1\_SCellDormancyIndication\_Type](#NR_DciFormat_X_1_SCellDormancyIndication) |  |  |

NR\_DciFormat\_2\_6\_Block\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DciFormat\_2\_6\_Block\_List\_Type** |
| **Comment** |  |
| record of [NR\_DciFormat\_2\_6\_Block\_Type](#NR_DciFormat_2_6_Block_Type) | |

NR\_DciFormat\_2\_6\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DciFormat\_2\_6\_Type** | | |
| **Comment** | TS 38.212 clause 7.3.1.3.7: DCI format 2\_6 is used for notifying  the power saving information outside DRX Active Time for one or more UEs | | |
| BlockList | [NR\_DciFormat\_2\_6\_Block\_List\_Type](#NR_DciFormat_2_6_Block_List_Type) |  |  |

## D.1.14 Configured\_Scheduling

Primitive for control of DL SPS assignment and UL Configured Grant Type 2 configuration

NR\_SPS\_CG\_ActDeact\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SPS\_CG\_ActDeact\_Type** | |
| **Comment** |  | |
| Activate | [NR\_SpsCgActivateInfo\_Type](#NR_SpsCgActivateInfo_Type) | CellId : identifier of the cell where the UE is active  RoutingInfo : None  RlcBearerRouting : 'None'  TimingInfo : activation time for DL SPS assignment or UL configured grant type 2 transmission;  ControlInfo : CnfFlag:=false; FollowOnFlag:=false |
| Deactivate | [NR\_SpsCgDeactivateInfo\_Type](#NR_SpsCgDeactivateInfo_Type) | CellId : identifier of the cell where the UE is active  RoutingInfo : None  RlcBearerRouting : 'None'  TimingInfo : activation time for DL SPS assignment or UL configured grant type 2 release indicated by PDCCH transmission or SS local deactivation  ControlInfo : CnfFlag:=false; FollowOnFlag:=false |

NR\_SpsCgActivateInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SpsCgActivateInfo\_Type** | | |
| **Comment** | Even though DL SPS assignment or UL configured grant type 2 is pre-configured at the UE, it needs to be activated by L1 signalling  => SS shall 'activate' DL SPS assignment or UL configured grant type 2 by sending appropriate assignments/grants to the UE; this shall be done with an activation time.  If DL SPS assignment or UL configured grant type 2 is already configured and new Activate command is received, with ConfigIndex not included (i.e. Rel-15 operation),  at the activation time SS locally deactivates old configuration, sends UE a PDCCH assignment for new DL SPS assignment or UL configured grant type 2 and locally activates new SPS configuration.  In DL, in addition to SS SPS assignment configuration with activation time 'T', TTCN writer shall also schedule a DL MAC PDU with same activation time 'T' and at every DL assignment periodicity  (NOTE: in general it is an error when TTCN does not provide data for a periodicity; SS shall send no data in this case). The SS sends the MAC PDU in 'T+ PDSCH slot offset (K0)' | | |
| UplinkConfiguredGrant | [NR\_UL\_ConfiguredGrant\_Type](#NR_UL_ConfiguredGrant_Type) | opt |  |
| DownlinkSpsAssignment | [NR\_DL\_SpsAssignment\_Type](#NR_DL_SpsAssignment_Type) | opt |  |

NR\_UL\_ConfiguredGrant\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UL\_ConfiguredGrant\_Type** | | |
| **Comment** | information to assign UL configured grant type schedules in UL | | |
| DciInfo | [NR\_DciUlInfo\_Type](#NR_DciUlInfo_Type) | opt | to apply an UL grant |
| SetNDI\_1 | [Null\_Type](#Null_Type) | opt | if present then NDI is set as 1 indicating a retransmission; If absent then NDI is set as 0 indicating a new transmission |
| ConfiguredGrantConfigIndex | ConfiguredGrantConfigIndex\_r16 | opt | if not present SS shall follow Rel-15 operation. If present indicates Rel-16 or later operation and as per TS 38.213 clause 10.2 SS shall use this value in HARQ process ID field in DCI |

NR\_DL\_SpsAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DL\_SpsAssignment\_Type** | | |
| **Comment** | information to assign semi-persistent scheduling in DL | | |
| DciInfo | [NR\_DciDlInfo\_Type](#NR_DciDlInfo_Type) | opt | to apply a DL assignment |
| SetNDI\_1 | [Null\_Type](#Null_Type) | opt | if present then NDI is set as 1 indicating a retransmission; If absent then NDI is set as 0 indicating a new transmission |
| SPS\_ConfigIndex | SPS\_ConfigIndex\_r16 |  | if not present SS shall follow Rel-15 operation. If present indicates Rel-16 or later operation and as per TS 38.213 clause 10.2 SS shall use this value in HARQ process ID field in DCI |

NR\_SPS\_CG\_ReleasePdcchDciFormat\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_SPS\_CG\_ReleasePdcchDciFormat\_Type** |
| **Comment** | DCI format to be used for DL SPS assignment and UL configured grant type 2 acc. to TS 38.213, Table 10.2-X |
| dci\_0\_0 |  |
| dci\_0\_1 |  |
| dci\_0\_2 |  |
| dci\_1\_0 |  |
| dci\_1\_1 |  |
| dci\_1\_2 |  |

NR\_SpsCgDeactivateInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SpsCgDeactivateInfo\_Type** | |
| **Comment** |  | |
| LocalRelease | [Null\_Type](#Null_Type) | DL SPS assignment and UL configured grant type 2 configuration shall be released at the SS, that means as well that the SS shall not address CS-RNTI anymore from the given TimingInfo onward;  NOTE: there is no DL SPS or UL configured grant type 2 release to be signalled on PDCCH (this is done with PdcchExplicitRelease - see below) |
| PdcchExplicitRelease | [NR\_SPS\_CG\_ReleasePdcchDciFormat\_Type](#NR_SPS_CG_ReleasePdcchDciFormat_Type) | SS transmits PDCCH content indicating DL SPS assignment or UL configured grant type 2 release but holds the local configuration until it is locally released |
| PdcchExplicitRelease\_Extn | [NR\_PdcchExplicitRelease\_Extn\_Type](#NR_PdcchExplicitRelease_Extn_Type) | Indicates Rel-16 or later operation. SS transmits PDCCH content indicating DL SPS assignment or UL configured grant type 2 release but holds the local configuration until it is locally released |

NR\_PdcchExplicitRelease\_Extn\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PdcchExplicitRelease\_Extn\_Type** | | |
| **Comment** |  | | |
| DciFormat | [NR\_SPS\_CG\_ReleasePdcchDciFormat\_Type](#NR_SPS_CG_ReleasePdcchDciFormat_Type) |  |  |
| SPS\_ConfigIndex | SPS\_ConfigIndex\_r16 | opt | Explicit release of DL SPS grant with config index; SS shall use this config index as HARQ process ID in DCI, ref TS 38.213 clause 10.2 |
| ConfiguredGrantConfigIndex | ConfiguredGrantConfigIndex\_r16 | opt | Explicit release of UL configured grant type 2 with config index; SS shall use this config index as HARQ process ID in DCI, ref TS 38.213 clause 10.2 |

## D.1.15 System\_Indications

Primitives for System indications

NR\_HarqProcessInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_HarqProcessInfo\_Type** | | |
| **Comment** |  | | |
| Id | [NR\_HarqProcessId\_Type](#NR_HarqProcessId_Type) |  |  |

NR\_HarqError\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_HarqError\_Type** | |
| **Comment** |  | |
| UL | [NR\_HarqProcessInfo\_Type](#NR_HarqProcessInfo_Type) | indicates HARQ error detected at the SS side (error at UL transmission) |
| DL | [NR\_HarqProcessInfo\_Type](#NR_HarqProcessInfo_Type) | indicates HARQ NACK sent by the UE (error at DL transmission) |

NR\_RachPreamble\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RachPreamble\_Type** | | |
| **Comment** |  | | |
| RAPID | integer |  | indicates the RAPID of the preamble (integer (0..63)) |

NR\_RlcDiscardInd\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RlcDiscardInd\_Type** | | |
| **Comment** | SS shall send this indication if it discards a received RLC AMD PDU as specified in TS 38.322 cl. 5.2.3.2.2 | | |
| SequenceNumber | integer |  | sequence number of the PDU being discarded |

## D.1.16 System\_Interface

NR\_SYSTEM\_CTRL\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SYSTEM\_CTRL\_REQ** | | |
| **Comment** |  | | |
| Common | [NR\_ReqAspCommonPart\_Type](#NR_ReqAspCommonPart_Type) |  | Unless specified otherwise for a particular primitive, the following applies:  CellId: identifier of the cell  RoutingInfo : 'None'  RlcBearerRouting : 'None'  MacBearerRouting : 'omit'  TimingInfo : 'Now' or specific activation time, depends on respective primitive  ControlInfo :  CnfFlag: depends on TimingInfo; in general 'false' when specific activation time is used, 'true' for 'Now'  FollowOnFlag 'false' |
| Request | [NR\_SystemRequest\_Type](#NR_SystemRequest_Type) |  |  |

NR\_SYSTEM\_CTRL\_CNF

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SYSTEM\_CTRL\_CNF** | | |
| **Comment** |  | | |
| Common | [NR\_CnfAspCommonPart\_Type](#NR_CnfAspCommonPart_Type) |  | TimingInfo is ignored by TTCN (apart from EnquireTiming)  => SS may set TimingInfo to "None" |
| Confirm | [NR\_SystemConfirm\_Type](#NR_SystemConfirm_Type) |  |  |

NR\_SYSTEM\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SYSTEM\_IND** | | |
| **Comment** |  | | |
| Common | [NR\_IndAspCommonPart\_Type](#NR_IndAspCommonPart_Type) |  | CellId : identifier of the cell  RoutingInfo : 'none'  RoutingInfoSUL: 'omit'  RlcBearerRouting : 'none'  MacBearerRouting : 'omit'  TimingInfo : The SS shall provide TimingInfo depending on the respective indication (see below) |
| Indication | [NR\_SystemIndication\_Type](#NR_SystemIndication_Type) |  | - Error  TimingInfo: related to the error (if available)  - RlcDiscardInd  TimingInfo: slot in which the RLC PDU has been received  - MAC  TimingInfo: slot in which the MAC PDU has been received containing the MAC CE being indicated  - RachPreamble  TimingInfo: start of the RACH preamble  - SchedReq  TimingInfo: slot containing the SR  - UL\_HARQ  TimingInfo: slot containing the UL HARQ  - HarqError  TimingInfo: slot containing the UL HARQ |

NR\_SYSTEM\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SYSTEM\_PORT** | |
| **Comment** | NR PTC: Port for system configuration | |
| out | [NR\_SYSTEM\_CTRL\_REQ](#NR_SYSTEM_CTRL_REQ) |  |
| in | [NR\_SYSTEM\_CTRL\_CNF](#NR_SYSTEM_CTRL_CNF) |  |

NR\_SYSIND\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SYSIND\_PORT** | |
| **Comment** | NR PTC: Port for system indications | |
| in | [NR\_SYSTEM\_IND](#NR_SYSTEM_IND) |  |

# D.2 NR\_ASP\_DrbDefs

ASP interface for DRBs

## D.2.1 PDU\_TypeDefs

### D.2.1.1 MAC\_PDU

NR\_MAC\_PDU\_DL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_PDU\_DL\_Type** | | |
| **Comment** |  | | |
| CE\_SubPDUList | [NR\_MAC\_CE\_SubPDU\_DL\_List\_Type](#NR_MAC_CE_SubPDU_DL_List_Type) | opt | list of subPDUs with MAC CE |
| SDU\_SubPDUList | [NR\_MAC\_SDU\_SubPDU\_List\_Type](#NR_MAC_SDU_SubPDU_List_Type) | opt | list of subPDUs with MAC SDU |
| Padding\_SubPDU | [NR\_MAC\_Padding\_SubPDU\_Type](#NR_MAC_Padding_SubPDU_Type) | opt | subPDU with padding |

NR\_MAC\_PDU\_UL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_PDU\_UL\_Type** | | |
| **Comment** |  | | |
| SDU\_SubPDUList | [NR\_MAC\_SDU\_SubPDU\_List\_Type](#NR_MAC_SDU_SubPDU_List_Type) | opt | list of subPDUs with MAC SDU |
| CE\_SubPDUList | [NR\_MAC\_CE\_SubPDU\_UL\_List\_Type](#NR_MAC_CE_SubPDU_UL_List_Type) | opt | list of subPDUs with MAC CE |
| Padding\_SubPDU | [NR\_MAC\_Padding\_SubPDU\_Type](#NR_MAC_Padding_SubPDU_Type) | opt | subPDU with padding |

NR\_MAC\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MAC\_PDU\_Type** | |
| **Comment** |  | |
| DL | [NR\_MAC\_PDU\_DL\_Type](#NR_MAC_PDU_DL_Type) |  |
| UL | [NR\_MAC\_PDU\_UL\_Type](#NR_MAC_PDU_UL_Type) |  |

NR\_MAC\_PDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_MAC\_PDUList\_Type** |
| **Comment** |  |
| record of [NR\_MAC\_PDU\_Type](#NR_MAC_PDU_Type) | |

#### D.2.1.1.1 MAC\_PDU\_SubPDU

MAC subPDU (TS 38.321 clause 6.1.2)

MAC\_PDU\_SubPDU: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **B8\_16\_Type** | bitstring length(8..16) | NOTE: length restriction can only be a range but not two distinct lengths |
| **NR\_MAC\_SDU\_Type** | octetstring |  |

NR\_MAC\_PDU\_SubHeader\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_PDU\_SubHeader\_Type** | | |
| **Comment** | MAC PDU SubHeader (TS 38.321 clause 6.1.2) | | |
| Reserved | [B1\_Type](#B1_Type) |  | Reserved bit |
| Format | [B1\_Type](#B1_Type) |  | F:  The Format field indicates the size of the Length field according to TS 38.321 clause 6.2.1: value 0 => 8 bits, value 1 => 16 bits.  In case of MAC subheader for fixed sized MAC CE or padding (R/LCID MAC subheader) this field is reserved (i.e. treated as another R field) |
| LCID | [B6\_Type](#B6_Type) |  | LCID:  Logical Channel ID field according to TS 38.321 Tables 6.2.1-1 and 6.2.1-2 |
| ELCID | [B8\_16\_Type](#B8_16_Type) | opt | eLCID:  The extended Logical Channel ID field according to TS 38.321 Tables 6.2.1-1a, 6.2.1-1b, 6.2.1-2a and 6.2.1-2b for the DL-SCH and UL-SCH respectively.  The size of the eLCID field is either 8 bits or 16 bits. |
| Length | [B8\_16\_Type](#B8_16_Type) | opt | Either omit (fixed-sized MAC CE) or 8 bits (F=0) or 16 bits (F=1) |

NR\_MAC\_CE\_SubPDU\_DL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SubPDU\_DL\_Type** | | |
| **Comment** | MAC DL subPPU with MAC subheader only (in case of MAC CE with fixed size of zero bits) or MAC subheader + MAC CE | | |
| SubHeader | [NR\_MAC\_PDU\_SubHeader\_Type](#NR_MAC_PDU_SubHeader_Type) |  |  |
| ControlElement | [NR\_MAC\_ControlElementDL\_Type](#NR_MAC_ControlElementDL_Type) | opt | omit if MAC CE has fixed size of zero bits |

NR\_MAC\_CE\_SubPDU\_DL\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Set of Type** | |
| **Name** | **NR\_MAC\_CE\_SubPDU\_DL\_List\_Type** |
| **Comment** |  |
| set of [NR\_MAC\_CE\_SubPDU\_DL\_Type](#NR_MAC_CE_SubPDU_DL_Type) | |

NR\_MAC\_CE\_SubPDU\_UL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SubPDU\_UL\_Type** | | |
| **Comment** | MAC UL subPPU with MAC subheader only (in case of MAC CE with fixed size of zero bits) or MAC subheader + MAC CE | | |
| SubHeader | [NR\_MAC\_PDU\_SubHeader\_Type](#NR_MAC_PDU_SubHeader_Type) |  |  |
| ControlElement | [NR\_MAC\_ControlElementUL\_Type](#NR_MAC_ControlElementUL_Type) | opt | omit if MAC CE has fixed size of zero bits |

NR\_MAC\_CE\_SubPDU\_UL\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Set of Type** | |
| **Name** | **NR\_MAC\_CE\_SubPDU\_UL\_List\_Type** |
| **Comment** |  |
| set of [NR\_MAC\_CE\_SubPDU\_UL\_Type](#NR_MAC_CE_SubPDU_UL_Type) | |

NR\_MAC\_SDU\_SubPDU\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_SDU\_SubPDU\_Type** | | |
| **Comment** | MAC subPPU with MAC subheader + MAC SDU | | |
| SubHeader | [NR\_MAC\_PDU\_SubHeader\_Type](#NR_MAC_PDU_SubHeader_Type) |  |  |
| SDU | [NR\_MAC\_SDU\_Type](#NR_MAC_SDU_Type) |  |  |

NR\_MAC\_SDU\_SubPDU\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Set of Type** | |
| **Name** | **NR\_MAC\_SDU\_SubPDU\_List\_Type** |
| **Comment** |  |
| set of [NR\_MAC\_SDU\_SubPDU\_Type](#NR_MAC_SDU_SubPDU_Type) | |

NR\_MAC\_Padding\_SubPDU\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_Padding\_SubPDU\_Type** | | |
| **Comment** | MAC subPPU with MAC subheader + Padding | | |
| SubHeader | [NR\_MAC\_PDU\_SubHeader\_Type](#NR_MAC_PDU_SubHeader_Type) |  |  |
| Padding | octetstring |  | 0 or more octets padding |

#### D.2.1.1.2 MAC\_ControlElements

MAC Control Elements (CEs) (TS 38.321 clause 6.1.3)

NR\_MAC\_ControlElementDL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MAC\_ControlElementDL\_Type** | |
| **Comment** | TimingInfo : 'Now' or specific activation time | |
| ContentionResolutionID | [NR\_MAC\_CE\_ContentionResolutionId\_Type](#NR_MAC_CE_ContentionResolutionId_Type) | TS 38.321 clause 6.1.3.3 |
| TimingAdvance | [NR\_MAC\_CE\_TimingAdvance\_Type](#NR_MAC_CE_TimingAdvance_Type) | TS 38.321 clause 6.1.3.4 |
| SCellActDeact | [NR\_MAC\_CE\_SCellActDeact\_Type](#NR_MAC_CE_SCellActDeact_Type) | TS 38.321 clause 6.1.3.10 |
| DuplicationActDeact | [NR\_MAC\_CE\_DuplicationActDeact\_Type](#NR_MAC_CE_DuplicationActDeact_Type) | TS 38.321 clause 6.1.3.11 |
| SP\_ResourceSetActDeact | [NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Type](#NR_MAC_CE_SP_ResourceSetActDeact_Type) | TS 38.321 clause 6.1.3.12 |
| CSI\_TriggerStateSubselection | [NR\_MAC\_CE\_CSI\_TriggerStateSubselection\_Type](#NR_MAC_CE_CSI_TriggerStateSubselection_T) | TS 38.321 clause 6.1.3.13 |
| TCI\_StatesActDeact | [NR\_MAC\_CE\_TCI\_StatesActDeact\_Type](#NR_MAC_CE_TCI_StatesActDeact_Type) | TS 38.321 clause 6.1.3.14 |
| TCI\_StateIndication | [NR\_MAC\_CE\_TCI\_StateIndication\_Type](#NR_MAC_CE_TCI_StateIndication_Type) | TS 38.321 clause 6.1.3.15 |
| SP\_CSI\_ReportingActDeact | [NR\_MAC\_CE\_SP\_CSI\_ReportingActDeact\_Type](#NR_MAC_CE_SP_CSI_ReportingActDeact_Type) | TS 38.321 clause 6.1.3.16 |
| SP\_SRS\_ActDeact | [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Type](#NR_MAC_CE_SP_SRS_ActDeact_Type) | TS 38.321 clause 6.1.3.17 |
| PUCCH\_SpatialRelationActDeact | [NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Type](#NR_MAC_CE_PUCCH_SpatialRelationActDeact_) | TS 38.321 clause 6.1.3.18 |
| SP\_ZP\_ResourceSetActDeact | [NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Type](#NR_MAC_CE_SP_ZP_ResourceSetActDeact_Type) | TS 38.321 clause 6.1.3.19 |
| RecommendatdBitrate | [NR\_MAC\_CE\_RecommendedBitrate\_Type](#NR_MAC_CE_RecommendedBitrate_Type) | TS 38.321 clause 6.1.3.20 |
| RlcDuplicationActDeact | [NR\_MAC\_CE\_RLC\_DuplicationActDeact\_Type](#NR_MAC_CE_RLC_DuplicationActDeact_Type) | TS 38.321 clause 6.1.3.32 |

NR\_MAC\_ControlElementUL\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_MAC\_ControlElementUL\_Type** | |
| **Comment** |  | |
| ShortBSR | [NR\_MAC\_CE\_ShortBSR\_Type](#NR_MAC_CE_ShortBSR_Type) | TS 38.321 clause 6.1.3.1 |
| LongBSR | [NR\_MAC\_CE\_LongBSR\_Type](#NR_MAC_CE_LongBSR_Type) | TS 38.321 clause 6.1.3.1 |
| C\_RNTI | [RNTI\_B16\_Type](#RNTI_B16_Type) | TS 38.321 clause 6.1.3.2 |
| SingleEntryPHR | [NR\_MAC\_CE\_SingleEntryPHR\_Type](#NR_MAC_CE_SingleEntryPHR_Type) | TS 38.321 clause 6.1.3.8 |
| MultiEntryPHR | [NR\_MAC\_CE\_MultiEntryPHR\_Type](#NR_MAC_CE_MultiEntryPHR_Type) | TS 38.321 clause 6.1.3.9 |
| RecommendedBitrate | [NR\_MAC\_CE\_RecommendedBitrate\_Type](#NR_MAC_CE_RecommendedBitrate_Type) | TS 38.321 clause 6.1.3.20 |

##### D.2.1.1.2.1 MAC\_ControlElement\_Common

NR\_MAC\_CE\_SCellFlags\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SCellFlags\_Type** | | |
| **Comment** | bitmap to indicate presence of SCell with SCellIndex according to TS 38.331  either SCellIndex7\_1 is present only or all octets are present | | |
| SCellIndex7\_1 | [B8\_Type](#B8_Type) |  | leftmost bit corresponds to SCellIndex7, 2nd bit from the right corresponds to SCellIndex1, rightmost bit is reserved |
| SCellIndex15\_8 | [B8\_Type](#B8_Type) | opt | leftmost bit corresponds to SCellIndex15, rightmost bit corresponds to SCellIndex8 |
| SCellIndex23\_16 | [B8\_Type](#B8_Type) | opt | leftmost bit corresponds to SCellIndex23, rightmost bit corresponds to SCellIndex16 |
| SCellIndex31\_24 | [B8\_Type](#B8_Type) | opt | leftmost bit corresponds to SCellIndex31, rightmost bit corresponds to SCellIndex24 |

NR\_MAC\_CE\_ServCellId\_BwpId\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_ServCellId\_BwpId\_Type** | | |
| **Comment** | Common definition for first octet of CEs defined in TS 38.321 clause 6.1.3.12 .. TS 38.321 clause 6.1.3.19 | | |
| Field1 | [B1\_Type](#B1_Type) |  | A/D field for NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Type and NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Type  or  CORESET Pool ID for NR\_MAC\_CE\_TCI\_StatesActDeact\_Type  reserved (set to 0) otherwise |
| ServCellId | [B5\_Type](#B5_Type) |  | identity of the Serving Cell for which the MAC CE applies |
| BwpId | [B2\_Type](#B2_Type) |  | BWP-Id (as specified in TS 38.331) of the uplink/downlink bandwidth part for which the MAC CE applies |

##### D.2.1.1.2.2 MAC\_ControlElement\_BSR

TS 38.321 clause 6.1.3.1 (Buffer Status Report MAC CEs)

MAC\_ControlElement\_BSR: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_MAC\_LongBSR\_BufferSize\_Type** | [O1\_Type](#O1_Type) |  |

NR\_MAC\_CE\_ShortBSR\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_ShortBSR\_Type** | | |
| **Comment** | Short BSR and Short Truncated BSR MAC CE according to TS 38.321 Figure 6.1.3.1-1 | | |
| LCG | [B3\_Type](#B3_Type) |  |  |
| BufferSize | [B5\_Type](#B5_Type) |  |  |

NR\_MAC\_LongBSR\_BufferSizeList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_MAC\_LongBSR\_BufferSizeList\_Type** |
| **Comment** |  |
| record length (0..8) of [NR\_MAC\_LongBSR\_BufferSize\_Type](#NR_MAC_LongBSR_BufferSize_Type) | |

NR\_MAC\_CE\_LongBSR\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_LongBSR\_Type** | | |
| **Comment** | Long BSR, Long Truncated BSR and Pre-emptive BSR MAC CE according to TS 38.321 Figure 6.1.3.1-2 | | |
| LCG\_Presence | [B8\_Type](#B8_Type) |  | '1' indicates that the Buffer Size field for a logical channel group i is reported,  with i = 7 for the leftmost bit and i = 0 for the rightmost |
| BufferSizeList | [NR\_MAC\_LongBSR\_BufferSizeList\_Type](#NR_MAC_LongBSR_BufferSizeList_Type) |  | According to TS 38.321 clause 6.1.3.1 the Buffer Size fields are included in ascending order based on the LCGi |

##### D.2.1.1.2.3 MAC\_ControlElement\_ContentionResolutionId

TS 38.321 clause 6.1.3.3 (UE Contention Resolution Identity MAC CE)

MAC\_ControlElement\_ContentionResolutionId: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_MAC\_CE\_ContentionResolutionId\_Type** | [B48\_Type](#B48_Type) | TS 38.321 Figure 6.1.3.3-1; fix size of 48 bits |

##### D.2.1.1.2.4 MAC\_ControlElement\_TimingAdvance

TS 38.321 clause 6.1.3.4 (Timing Advance Command MAC CE)

NR\_MAC\_CE\_TimingAdvance\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_TimingAdvance\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.4-1 | | |
| TAG\_ID | [B2\_Type](#B2_Type) |  | TAG Identity of the addressed TAG |
| TimingAdvanceCommand | [B6\_Type](#B6_Type) |  | index value TA (0..63) used to control the amount of timing adjustment that MAC entity has to apply (as specified in TS 38.213) |

##### D.2.1.1.2.5 MAC\_ControlElement\_PHR

TS 38.321 clause 6.1.3.8 (Single Entry PHR) and 6.1.3.9 (Multiple Entry PHR)

MAC\_ControlElement\_PHR: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_MAC\_CE\_SingleEntryPHR\_Type** | [NR\_MAC\_CE\_PH\_Record\_Type](#NR_MAC_CE_PH_Record_Type) | TS 38.321 Figure 6.1.3.8-1 |

NR\_MAC\_CE\_PH\_Record\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_PH\_Record\_Type** | | |
| **Comment** |  | | |
| P\_Bit | [B1\_Type](#B1_Type) |  | P bit: 1 indicates the UE applies power backoff due to power management;  For Single Entry PHR MAC CE: If mpe-Reporting is configured indicates the applied power backoff to meet MPE requirements. |
| V\_Bit | [B1\_Type](#B1_Type) |  | V bit: Indicates when the PH value is based on a real transmission or a reference format;  reserved (R = '0'B) for Single Entry PHR MAC CE |
| Value | [B6\_Type](#B6_Type) |  | The power headroom level. Ph Type 2 (if configured) for PCell and Type 1 for PCell and SCell |
| MPE\_or\_R | [B2\_Type](#B2_Type) | opt | 2 reserved bits or MPE (Maximum Permissible Exposure);  present if V=0 |
| PCMaxc | [B6\_Type](#B6_Type) | opt | present if V=0 |

NR\_MAC\_CE\_MultiEntryPHR\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_MultiEntryPHR\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.9-1 and Figure 6.1.3.9-2 | | |
| PHFieldPresentForSCell | [NR\_MAC\_CE\_SCellFlags\_Type](#NR_MAC_CE_SCellFlags_Type) |  | to indicate presence of PH field for particular SCell |
| PH\_Record | record of [NR\_MAC\_CE\_PH\_Record\_Type](#NR_MAC_CE_PH_Record_Type) |  | list of PH\_Records for PCell and SCells as described in TS 38.321 clause 6.1.3.9 |

##### D.2.1.1.2.6 MAC\_ControlElement\_SCellActivationDeactivation

TS 38.321 clause 6.1.3.10 (SCell Activation/Deactivation MAC CEs)

MAC\_ControlElement\_SCellActivationDeactivation: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_MAC\_CE\_SCellActDeact\_Type** | [NR\_MAC\_CE\_SCellFlags\_Type](#NR_MAC_CE_SCellFlags_Type) | TS 38.321 Figure 6.1.3.10-1 and Figure 6.1.3.10-2 |

##### D.2.1.1.2.7 MAC\_ControlElement\_DuplicationActivationDeactivation

TS 38.321 clause 6.1.3.11 (Duplication Activation/Deactivation MAC CE)

MAC\_ControlElement\_DuplicationActivationDeactivation: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_MAC\_CE\_DuplicationActDeact\_Type** | [B8\_Type](#B8_Type) | TS 38.321 Figure 6.1.3.11-1 |

##### D.2.1.1.2.8 MAC\_ControlElement\_SP\_ResourceSetActivationDeactivation

TS 38.321 clause 6.1.3.12 (SP CSI-RS / CSI-IM Resource Set Activation/Deactivation MAC CE)

NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet2\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet2\_Type** | | |
| **Comment** |  | | |
| Reserved | [B1\_Type](#B1_Type) |  |  |
| IM | [B1\_Type](#B1_Type) |  | indicates whether or not octet 3 is present |
| CSI\_RS\_ResourcesetId | [B6\_Type](#B6_Type) |  |  |

NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet3\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet3\_Type** | | |
| **Comment** |  | | |
| Reserved | [B2\_Type](#B2_Type) |  |  |
| CSI\_IM\_ResourcesetId | [B6\_Type](#B6_Type) |  |  |

NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateId\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateId\_Type** | | |
| **Comment** |  | | |
| Reserved | [B1\_Type](#B1_Type) |  |  |
| Id | [B7\_Type](#B7_Type) |  |  |

NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateIdList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateIdList\_Type** |
| **Comment** |  |
| record of [NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateId\_Type](#NR_MAC_CE___sourceSetActDeact_TciStateId)eId\_Type | |

NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.12-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: A/D field |
| Octet2 | [NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet2\_Type](#NR_MAC_CE_SP_ResourceSetActDeact_Octet2_) |  |  |
| Octet3 | [NR\_MAC\_CE\_SP\_ResourceSetActDeact\_Octet3\_Type](#NR_MAC_CE_SP_ResourceSetActDeact_Octet3_) | opt | present if IM=1 in octet 2 |
| IdList | [NR\_MAC\_CE\_SP\_ResourceSetActDeact\_TciStateIdList\_Type](#NR_MAC_CE___ceSetActDeact_TciStateIdList) |  |  |

##### D.2.1.1.2.9 MAC\_ControlElement\_CSI\_TriggerStateSubselection

TS 38.321 clause 6.1.3.13 (Aperiodic CSI Trigger State Subselection MAC CE)

NR\_MAC\_CE\_CSI\_TriggerStateSubselection\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_CSI\_TriggerStateSubselection\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.13-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: reserved |
| Selection | [B8\_List\_Type](#B8_List_Type) |  |  |

##### D.2.1.1.2.10 MAC\_ControlElement\_TCI\_StatesActivationDeactivation

TS 38.321 clause 6.1.3.14 (TCI States Activation/Deactivation for UE-specific PDSCH MAC CE)

NR\_MAC\_CE\_TCI\_StatesActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_TCI\_StatesActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.14-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: CORESET Pool ID field |
| Status | [B8\_List\_Type](#B8_List_Type) |  |  |

##### D.2.1.1.2.11 MAC\_ControlElement\_TCI\_StateIndication

TS 38.321 clause 6.1.3.15 (TCI State Indication for UE-specific PDCCH MAC CE)

NR\_MAC\_CE\_TCI\_StateIndication\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_TCI\_StateIndication\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.15-1 | | |
| ServCellId | [B5\_Type](#B5_Type) |  | identity of the Serving Cell for which the MAC CE applies |
| CoresetId | [B4\_Type](#B4_Type) |  | ControlResourceSetId for which the TCI State is being indicated |
| TciStateId | [B7\_Type](#B7_Type) |  | TCI-StateId applicable to the Control Resource Set identified by CORESET ID field |

##### D.2.1.1.2.12 MAC\_ControlElement\_SP\_CSI\_ReportingActivationDeactivation

TS 38.321 clause 6.1.3.16 (SP CSI reporting on PUCCH Activation/Deactivation MAC CE)

NR\_MAC\_CE\_SP\_CSI\_ReportingActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_CSI\_ReportingActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.16-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: reserved |
| Reserved | [B4\_Type](#B4_Type) |  |  |
| ConfigState | [B4\_Type](#B4_Type) |  |  |

##### D.2.1.1.2.13 MAC\_ControlElement\_SP\_SRS\_ActivationDeactivation

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Octet2\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Octet2\_Type** | | |
| **Comment** | TS 38.321 clause 6.1.3.17 (SP SRS Activation/Deactivation MAC CE) | | |
| Reserved | [B2\_Type](#B2_Type) |  |  |
| C | [B1\_Type](#B1_Type) |  |  |
| SUL | [B1\_Type](#B1_Type) |  |  |
| SRS\_ResourcesetId | [B4\_Type](#B4_Type) |  |  |

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceId\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceId\_Type** | | |
| **Comment** |  | | |
| F | [B1\_Type](#B1_Type) |  |  |
| Id | [B7\_Type](#B7_Type) |  |  |

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceIdList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceIdList\_Type** |
| **Comment** |  |
| record of [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceId\_Type](#NR_MAC_CE_SP_SRS_ActDeact_ResourceId_Typ)e | |

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfo\_Type** | | |
| **Comment** |  | | |
| Reserved | [B1\_Type](#B1_Type) |  |  |
| ServingCellId | [B5\_Type](#B5_Type) |  |  |
| BwpId | [B2\_Type](#B2_Type) |  |  |

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfoList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfoList\_Type** |
| **Comment** |  |
| record of [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfo\_Type](#NR_MAC_CE_SP_SRS_ActDeact_ResourceInfo_T)ype | |

NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.17-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: A/D field |
| Octet2 | [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_Octet2\_Type](#NR_MAC_CE_SP_SRS_ActDeact_Octet2_Type) |  |  |
| ResourceIdList | [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceIdList\_Type](#NR_MAC_CE_SP_SRS_ActDeact_ResourceIdList) |  |  |
| ResourceInfoList | [NR\_MAC\_CE\_SP\_SRS\_ActDeact\_ResourceInfoList\_Type](#NR_MAC_CE___RS_ActDeact_ResourceInfoList) |  | empty list when C=0 |

##### D.2.1.1.2.14 MAC\_ControlElement\_PUCCH\_SpatialRelationActivationDeactivation

TS 38.321 clause 6.1.3.18 (PUCCH spatial relation Activation/Deactivation MAC CE)

NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Octet2\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Octet2\_Type** | | |
| **Comment** |  | | |
| Reserved | [B1\_Type](#B1_Type) |  |  |
| ResourceId | [B7\_Type](#B7_Type) |  |  |

NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.18-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: reserved |
| Octet2 | [NR\_MAC\_CE\_PUCCH\_SpatialRelationActDeact\_Octet2\_Type](#NR_MAC_CE___atialRelationActDeact_Octet2) |  |  |
| ActivationStatus | [B8\_Type](#B8_Type) |  |  |

##### D.2.1.1.2.15 MAC\_ControlElement\_ZP\_ResourceSetActivationDeactivation

TS 38.321 clause 6.1.3.19 (SP ZP CSI-RS Resource Set Activation/Deactivation MAC CE)

NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Octet2\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Octet2\_Type** | | |
| **Comment** |  | | |
| Reserved | [B4\_Type](#B4_Type) |  |  |
| Id | [B4\_Type](#B4_Type) |  |  |

NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.19-1 | | |
| Octet1 | [NR\_MAC\_CE\_ServCellId\_BwpId\_Type](#NR_MAC_CE_ServCellId_BwpId_Type) |  | Field1: A/D field |
| Octet2 | [NR\_MAC\_CE\_SP\_ZP\_ResourceSetActDeact\_Octet2\_Type](#NR_MAC_CE___P_ResourceSetActDeact_Octet2) |  |  |

##### D.2.1.1.2.16 MAC\_ControlElement\_RecommendedBitrate

TS 38.321 clause 6.1.3.20 (Recommended bit rate MAC CE)

NR\_MAC\_CE\_RecommendedBitrate\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_RecommendedBitrate\_Type** | | |
| **Comment** | TS 38.321 Figure 6.1.3.20-1 | | |
| LCID | [B6\_Type](#B6_Type) |  |  |
| UL\_DL | [B1\_Type](#B1_Type) |  |  |
| Bitrate | [B6\_Type](#B6_Type) |  |  |
| X | [B1\_Type](#B1_Type) |  | Bit rate multiplier |
| Reserved | [B2\_Type](#B2_Type) |  |  |

##### D.2.1.1.2.17 MAC\_ControlElement\_CE\_RLC\_DuplicationActDeact

NR\_MAC\_CE\_RLC\_DuplicationActDeact\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_MAC\_CE\_RLC\_DuplicationActDeact\_Type** | | |
| **Comment** |  | | |
| DrbId | [B5\_Type](#B5_Type) |  |  |
| Rlc2 | [B1\_Type](#B1_Type) |  |  |
| Rlc1 | [B1\_Type](#B1_Type) |  |  |
| Rlc0 | [B1\_Type](#B1_Type) |  |  |

### D.2.1.2 RLC\_PDU

RLC\_PDU: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_SDU\_Type** | octetstring |  |

NR\_RLC\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_PDU\_Type** | |
| **Comment** |  | |
| TMD | [NR\_RLC\_TMD\_PDU\_Type](#NR_RLC_TMD_PDU_Type) |  |
| UMD | [NR\_RLC\_UMD\_PDU\_Type](#NR_RLC_UMD_PDU_Type) |  |
| AMD | [NR\_RLC\_AMD\_PDU\_Type](#NR_RLC_AMD_PDU_Type) |  |
| Status | [NR\_RLC\_AM\_StatusPDU\_Type](#NR_RLC_AM_StatusPDU_Type) |  |

NR\_RLC\_PDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RLC\_PDUList\_Type** |
| **Comment** |  |
| record of [NR\_RLC\_PDU\_Type](#NR_RLC_PDU_Type) | |

NR\_RLC\_SDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RLC\_SDUList\_Type** |
| **Comment** |  |
| record of [NR\_RLC\_SDU\_Type](#NR_RLC_SDU_Type) | |

#### D.2.1.2.1 Common

RLC PDU definition: common AM/UM field definitions

Common: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_SegmentationInfo\_Type** | [B2\_Type](#B2_Type) | Segmentation Info (SI) field (TS 38.322, clause 6.2.3.4)  00 - Data field contains all bytes of an RLC SDU  01 - Data field contains the first segment of an RLC SDU  10 - Data field contains the last segment of an RLC SDU  11 - Data field contains neither the first nor last segment of an RLC SDU |
| **NR\_RLC\_SegmentOffset\_Type** | [B16\_Type](#B16_Type) | Segment Offset (SO) field (TS 38.322, 6.2.3.5) |

#### D.2.1.2.2 TM\_Data

RLC PDU definition: UM (TS 38.322, clause 6.2.2.2)

TM\_Data: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_TMD\_PDU\_Type** | octetstring | TS 38.322, clause 6.2.2.2 |

#### D.2.1.2.3 UM\_Data

RLC PDU definition: UM (TS 38.322, clause 6.2.2.3)

UM\_Data: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_UMD\_Data\_Type** | octetstring | TS 38.322, clause 6.2.2.3 |

NR\_RLC\_UMD\_HeaderNoSN\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_HeaderNoSN\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (Figure 6.2.2.3-1; one octet | | |
| SegmentationInfo | [NR\_RLC\_SegmentationInfo\_Type](#NR_RLC_SegmentationInfo_Type) |  |  |
| Reserved | [B6\_Type](#B6_Type) |  |  |

NR\_RLC\_UMD\_PduNoSN\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_PduNoSN\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (Figure 6.2.2.3-1); one octet | | |
| Header | [NR\_RLC\_UMD\_HeaderNoSN\_Type](#NR_RLC_UMD_HeaderNoSN_Type) |  |  |
| Data | [NR\_RLC\_UMD\_Data\_Type](#NR_RLC_UMD_Data_Type) |  |  |

NR\_RLC\_UMD\_HeaderSN6Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_HeaderSN6Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (6.2.2.3-2, 6.2.2.3-4); one octet | | |
| SegmentationInfo | [NR\_RLC\_SegmentationInfo\_Type](#NR_RLC_SegmentationInfo_Type) |  | 2 bits SI |
| SequenceNumber | [B6\_Type](#B6_Type) |  | 6 bits SN |
| SegmentOffset | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | 16 bits SO; included in case of segmentation but not for the first segment (TS 38.322 clause 6.2.2.3) |

NR\_RLC\_UMD\_PduSN6Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_PduSN6Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (6.2.2.3-2, 6.2.2.3-4); one octet | | |
| Header | [NR\_RLC\_UMD\_HeaderSN6Bit\_Type](#NR_RLC_UMD_HeaderSN6Bit_Type) |  |  |
| Data | [NR\_RLC\_UMD\_Data\_Type](#NR_RLC_UMD_Data_Type) |  |  |

NR\_RLC\_UMD\_HeaderSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_HeaderSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (Figure 6.2.2.3-3, 6.2.2.3-5); two octets | | |
| SegmentationInfo | [NR\_RLC\_SegmentationInfo\_Type](#NR_RLC_SegmentationInfo_Type) |  | 2 bits SI |
| Reserved | [B2\_Type](#B2_Type) |  | 2 bits reserved |
| SequenceNumber | [B12\_Type](#B12_Type) |  | 12 bits SN |
| SegmentOffset | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | 16 bits SO; included in case of segmentation but not for the first segment (TS 38.322 clause 6.2.2.3) |

NR\_RLC\_UMD\_PduSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_UMD\_PduSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.3 (Figure 6.2.2.3-3, 6.2.2.3-5); two octets | | |
| Header | [NR\_RLC\_UMD\_HeaderSN12Bit\_Type](#NR_RLC_UMD_HeaderSN12Bit_Type) |  |  |
| Data | [NR\_RLC\_UMD\_Data\_Type](#NR_RLC_UMD_Data_Type) |  |  |

NR\_RLC\_UMD\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_UMD\_PDU\_Type** | |
| **Comment** |  | |
| NoSN | [NR\_RLC\_UMD\_PduNoSN\_Type](#NR_RLC_UMD_PduNoSN_Type) |  |
| SN6Bit | [NR\_RLC\_UMD\_PduSN6Bit\_Type](#NR_RLC_UMD_PduSN6Bit_Type) |  |
| SN12Bit | [NR\_RLC\_UMD\_PduSN12Bit\_Type](#NR_RLC_UMD_PduSN12Bit_Type) |  |

#### D.2.1.2.4 AM\_Data

RLC PDU definition: AM (TS 38.322, clause 6.2.2.4)

AM\_Data: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_AMD\_Data\_Type** | octetstring | TS 38.322, clause 6.2.2.4 |

NR\_RLC\_AMD\_HeaderSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_AMD\_HeaderSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.4 (Figure 6.2.2.4-1, 6.2.2.4-3) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '1'B for Data PDU |
| Poll | [B1\_Type](#B1_Type) |  | 1 bit, '0'B - Status report not requested  '1'B - Status report is requested |
| SegmentationInfo | [NR\_RLC\_SegmentationInfo\_Type](#NR_RLC_SegmentationInfo_Type) |  | 2 bits SI |
| SequenceNumber | [B12\_Type](#B12_Type) |  | 12 bits SN |
| SegmentOffset | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | 16 bits SO; included in case of segmentation but not for the first segment (TS 38.322 clause 6.2.2.4) |

NR\_RLC\_AMD\_PduSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_AMD\_PduSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.4 (Figure 6.2.2.4-1, 6.2.2.4-3) | | |
| Header | [NR\_RLC\_AMD\_HeaderSN12Bit\_Type](#NR_RLC_AMD_HeaderSN12Bit_Type) |  |  |
| Data | [NR\_RLC\_AMD\_Data\_Type](#NR_RLC_AMD_Data_Type) |  |  |

NR\_RLC\_AMD\_HeaderSN18Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_AMD\_HeaderSN18Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.4 (Figure 6.2.2.4-2, 6.2.2.4-4) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '1'B for Data PDU |
| Poll | [B1\_Type](#B1_Type) |  | 1 bit, 0 - Status report not requested  1 - Status report is requested |
| SegmentationInfo | [NR\_RLC\_SegmentationInfo\_Type](#NR_RLC_SegmentationInfo_Type) |  | 2 bits SI |
| Reserved | [B2\_Type](#B2_Type) |  | 2 bits reserved |
| SequenceNumber | [B18\_Type](#B18_Type) |  | 18 bits SN |
| SegmentOffset | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | 16 bits SO; included in case of segmentation but not for the first segment (TS 38.322 clause 6.2.2.4) |

NR\_RLC\_AMD\_PduSN18Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_AMD\_PduSN18Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.4 Figure 6.2.2.4-2, 6.2.2.4-4) | | |
| Header | [NR\_RLC\_AMD\_HeaderSN18Bit\_Type](#NR_RLC_AMD_HeaderSN18Bit_Type) |  |  |
| Data | [NR\_RLC\_AMD\_Data\_Type](#NR_RLC_AMD_Data_Type) |  |  |

NR\_RLC\_AMD\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_AMD\_PDU\_Type** | |
| **Comment** | TS 38.322, clause 6.2.2.4 | |
| SN12Bit | [NR\_RLC\_AMD\_PduSN12Bit\_Type](#NR_RLC_AMD_PduSN12Bit_Type) |  |
| SN18Bit | [NR\_RLC\_AMD\_PduSN18Bit\_Type](#NR_RLC_AMD_PduSN18Bit_Type) |  |

#### D.2.1.2.5 AM\_Status

AM Status PDU (TS 36.322, clause 6.2.1.6)

AM\_Status: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RLC\_Status\_ExtensionBit1\_Type** | [B1\_Type](#B1_Type) | TS 38.322, clause 6.2.3.11 Extension bit 1 (E1) field:  '0'B A set of NACK\_SN, E1, E2 and E3 does not follow.  '1'B A set of NACK\_SN, E1, E2 and E3 follows. |
| **NR\_RLC\_Status\_ExtensionBit2\_Type** | [B1\_Type](#B1_Type) | TS 38.322, clause 6.2.3.13 Extension bit 2 (E2) field:  '0'B A set of SOstart and SOend does not follow for this NACK\_SN.  '1'B A set of SOstart and SOend follows for this NACK\_SN. |
| **NR\_RLC\_Status\_ExtensionBit3\_Type** | [B1\_Type](#B1_Type) | TS 38.322, clause 6.2.3.16 Extension bit 3 (E3) field:  '0'B A set of NACK\_SN, E1, E2 and E3 follows.  '1'B NACK range field follows for this NACK\_SN. |

NR\_RLC\_Status\_NackSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_Status\_NackSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.5 (Figure 6.2.2.5-1) | | |
| SequenceNumberNACK | [B12\_Type](#B12_Type) |  | 12 bits SN |
| E1 | [NR\_RLC\_Status\_ExtensionBit1\_Type](#NR_RLC_Status_ExtensionBit1_Type) |  | 1 bit E1 field; set if further NACK set follows |
| E2 | [NR\_RLC\_Status\_ExtensionBit2\_Type](#NR_RLC_Status_ExtensionBit2_Type) |  | 1 bit E2 field |
| E3 | [NR\_RLC\_Status\_ExtensionBit3\_Type](#NR_RLC_Status_ExtensionBit3_Type) |  | 1 bit E3 field |
| Reserved | [B1\_Type](#B1_Type) |  | 1 bit reserved |
| SOstart | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | segment offset (start), present only if E2 is set to '1'B |
| SOstop | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | segment offset (stop), present only if E2 is set to '1'B |
| NACKrange | [B8\_Type](#B8_Type) | opt | NACK range, present only if E3 is set to '1'B |

NR\_RLC\_Status\_NackListSN12Bit\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RLC\_Status\_NackListSN12Bit\_Type** |
| **Comment** |  |
| record of [NR\_RLC\_Status\_NackSN12Bit\_Type](#NR_RLC_Status_NackSN12Bit_Type) | |

NR\_RLC\_StatusPduSN12Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_StatusPduSN12Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.5 (Figure 6.2.2.5-1) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Control PDU |
| CPT | [B3\_Type](#B3_Type) |  | 3 bits, TS 38.322, clause 6.2.3.9 Control PDU Type (CPT) field:  '000'B STATUS PDU  ELSE reserved |
| SequenceNumberACK | [B12\_Type](#B12_Type) |  | 12 bits SN |
| E1 | [NR\_RLC\_Status\_ExtensionBit1\_Type](#NR_RLC_Status_ExtensionBit1_Type) |  | 1 bit E1 field |
| Reserved | [B7\_Type](#B7_Type) |  | 7 bits reserved |
| NackList | [NR\_RLC\_Status\_NackListSN12Bit\_Type](#NR_RLC_Status_NackListSN12Bit_Type) | opt | zero or more sets of a NACK\_SN, E1, E2 and E3 and possibly a pair of SOstart/SOend or NACK range field for each NACK\_SN |

NR\_RLC\_Status\_NackSN18Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_Status\_NackSN18Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.5 (Figure 6.2.2.5-1) | | |
| SequenceNumberNACK | [B18\_Type](#B18_Type) |  | 18 bits SN |
| E1 | [NR\_RLC\_Status\_ExtensionBit1\_Type](#NR_RLC_Status_ExtensionBit1_Type) |  | 1 bit E1 field; set if further NACK set follows |
| E2 | [NR\_RLC\_Status\_ExtensionBit2\_Type](#NR_RLC_Status_ExtensionBit2_Type) |  | 1 bit E2 field |
| E3 | [NR\_RLC\_Status\_ExtensionBit3\_Type](#NR_RLC_Status_ExtensionBit3_Type) |  | 1 bit E3 field |
| Reserved | [B3\_Type](#B3_Type) |  | 3 bits reserved |
| SOstart | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | segment offset (start), present only if E2 is set to '1'B |
| SOstop | [NR\_RLC\_SegmentOffset\_Type](#NR_RLC_SegmentOffset_Type) | opt | segment offset (stop), present only if E2 is set to '1'B |
| NACKrange | [B8\_Type](#B8_Type) | opt | NACK range, present only if E3 is set to '1'B |

NR\_RLC\_Status\_NackListSN18Bit\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_RLC\_Status\_NackListSN18Bit\_Type** |
| **Comment** |  |
| record of [NR\_RLC\_Status\_NackSN18Bit\_Type](#NR_RLC_Status_NackSN18Bit_Type) | |

NR\_RLC\_StatusPduSN18Bit\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_RLC\_StatusPduSN18Bit\_Type** | | |
| **Comment** | TS 38.322, clause 6.2.2.5 (Figure 6.2.2.5-1) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Control PDU |
| CPT | [B3\_Type](#B3_Type) |  | 3 bits, TS 38.322, clause 6.2.3.9 Control PDU Type (CPT) field:  '000'B STATUS PDU  ELSE reserved |
| SequenceNumberACK | [B18\_Type](#B18_Type) |  | 18 bits SN |
| E1 | [NR\_RLC\_Status\_ExtensionBit1\_Type](#NR_RLC_Status_ExtensionBit1_Type) |  | 1 bit E1 field |
| Reserved | [B1\_Type](#B1_Type) |  | 1 bit reserved |
| NackList | [NR\_RLC\_Status\_NackListSN18Bit\_Type](#NR_RLC_Status_NackListSN18Bit_Type) | opt | zero or more sets of a NACK\_SN, E1, E2 and E3 and possibly a pair of SOstart/SOend or NACK range field for each NACK\_SN |

NR\_RLC\_AM\_StatusPDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RLC\_AM\_StatusPDU\_Type** | |
| **Comment** | TS 38.322, clause 6.2.254 | |
| SN12Bit | [NR\_RLC\_StatusPduSN12Bit\_Type](#NR_RLC_StatusPduSN12Bit_Type) |  |
| SN18Bit | [NR\_RLC\_StatusPduSN18Bit\_Type](#NR_RLC_StatusPduSN18Bit_Type) |  |

## D.2.2 DRB\_Primitive\_Definitions

Primitive definitions to send/receive data PDUs over DRB's

### D.2.2.1 DRB\_Common

NR\_L2DataList\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_L2DataList\_Type** | |
| **Comment** | MAC:  acc. to rel-15 protocols there is exactly one MAC PDU per TB but in case of spatial multiplexing there can be one or more TB per HARQ process;  any MAC PDU is completely included in one slot (TTI)  RLC:  one or more RLC PDUs per slot (TTI)  (e.g. RLC Data + Status PDU on a logical channel;  more than one RLC Data PDU in one MAC PDU is valid too)  any RLC PDU is completely included in one slot (TTI)  PDCP:  one or more PDUs per slot (TTI); one PDCP PDU may be included in more than one slot (TTI) | |
| MacPdu | [NR\_MAC\_PDUList\_Type](#NR_MAC_PDUList_Type) | SS configuration: RLC TM mode, MAC no header removal (PDCP is not configured) |
| RlcPdu | [NR\_RLC\_PDUList\_Type](#NR_RLC_PDUList_Type) | SS configuration: RLC TM mode, MAC header removal (PDCP is not configured) |
| RlcSdu | [NR\_RLC\_SDUList\_Type](#NR_RLC_SDUList_Type) | SS configuration: RLC UM mode with no PDCP |
| PdcpPdu | [NR\_PDCP\_PDUList\_Type](#NR_PDCP_PDUList_Type) | SS configuration: RLC AM/UM mode, no handling of PDCP header |
| PdcpSdu | [NR\_PDCP\_SDUList\_Type](#NR_PDCP_SDUList_Type) | SS configuration: RLC AM/UM mode, PDCP normal mode (automatic handling of PDCP header) |
| SdapPdu | [SDAP\_PDUList\_Type](#SDAP_PDUList_Type) | SS configuration: RLC AM/UM mode, PDCP normal mode (automatic handling of PDCP header), no handling of SDAP header |
| SdapSdu | [SDAP\_SDUList\_Type](#SDAP_SDUList_Type) | SS configuration: RLC AM/UM mode, PDCP normal mode (automatic handling of PDCP header), automatic handling of SDAP header |

NR\_HarqProcessAssignment\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_HarqProcessAssignment\_Type** | |
| **Comment** | in DL the HARQ process id may be specified by the test case or automatically assigned by SS | |
| Id | [NR\_HarqProcessId\_Type](#NR_HarqProcessId_Type) | HARQ process as specified by the test case  NOTE1:  the scope of this type is only for data being sent in one slot (TTI);  if data needs more than one slot (TTI) the HarqProcessId is undefined for the 2nd TTI onward what shall be handled as an error at the SS; SS may send a SYSTEM\_IND indicating an error in this case;  NOTE2:  The initial value of the NDI shall be the same for all HARQ processes and cells |
| Automatic | [Null\_Type](#Null_Type) | HARQ process id automatically assigned by SS |

### D.2.2.2 Downlink

NR\_DRB\_DataPerSlot\_DL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DRB\_DataPerSlot\_DL\_Type** | | |
| **Comment** | common definition for one or several PDUs/SDUs;  in NR the DL data is sent in the slot given by the slot offset  NOTE 1:  For MAC and RLC PDUs a single PDU is always sent in one slot;  SS shall raise an error indication (using SYSTEM\_IND) when that is not possible  NOTE 2:  For PDCP the data may be spread over more than one slot (segmented by the RLC);  the TTCN implementation is responsible to calculate appropriate offsets accordingly;  the exact timing depends on (and is exactly specified by) configuration of the DL scheduling;  SS shall raise an error when there is any conflict | | |
| SlotOffset | integer |  | NR:  Slot offset relative to the absolute timing information given in the common part of the ASP;  NOTE:  if a PDCP PDU or SDU takes more than one slot, SlotOffset specifies the first slot (TTI) |
| HarqProcess | [NR\_HarqProcessAssignment\_Type](#NR_HarqProcessAssignment_Type) | opt | HARQ process to be used: specific value or automatically assigned by SS;  in automatic mode SS chooses HARQ process out of the set configured by DcchDtchConfig.DL.SearchSpaceAndDci.DciInfo.ResoureAssignment.HarqProcessConfig  NOTE:  for PDCP SDUs or PDUs automatic mode shall be used; otherwise SS shall raise an error |
| PduSduList | [NR\_L2DataList\_Type](#NR_L2DataList_Type) |  | list of PDUs/SDUs to be sent in one slot (TTI) |

NR\_DRB\_DataPerSlotList\_DL\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_DRB\_DataPerSlotList\_DL\_Type** |
| **Comment** | list of user plane data to be sent in slots given by the SlotOffset in the single elements of the list;  Timing:  the start time for the whole sequence is given by the timing info of the ASP (common information);  the timing for the respective data pdus is given by the SlotOffset relative to the common timing info;  design consideration:  repetitions of this sequence are not foreseen  (in which case the slot offset could not be related to the timing info of the ASP) |
| record of [NR\_DRB\_DataPerSlot\_DL\_Type](#NR_DRB_DataPerSlot_DL_Type) | |

NR\_L2Data\_Request\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_L2Data\_Request\_Type** | | |
| **Comment** | NOTE: formal type definition to allow later enhancements | | |
| SlotDataList | [NR\_DRB\_DataPerSlotList\_DL\_Type](#NR_DRB_DataPerSlotList_DL_Type) |  |  |

### D.2.2.3 Uplink

NR\_DRB\_DataPerSlot\_UL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DRB\_DataPerSlot\_UL\_Type** | | |
| **Comment** | common definition for one or several PDUs/SDUs being received in one slot  or to receive one PDCP PDU or SDU being spread over more than one slot (TTI);  NOTE:  There is a fix relation between HARQ process id and slot in UL  => it is not necessary to include HARQ process id for UL data | | |
| PduSduList | [NR\_L2DataList\_Type](#NR_L2DataList_Type) |  | list of PDUs/SDUs being received in one TTI;  elements of the list appear in the same order as the PDUs/SDUs in the MAC PDU;  for PDCP when a PDU or SDU takes more than one TTI the list only contains this PDU or SDU |
| NoOfTTIs | integer |  | in case of PDCP:  number of TTIs the SDU or PDU has taken  NOTE 1: for the time being the NoOfTTIs is not checked by TTCN-3 and may be set to 1 by SS;  NOTE 2: the timing info in common part of the ASP refers to the last TTI  NOTE 3: when NoOfTTIs > 1 => PduSduList shall only contain one PDCP PDU or SDU  in case of MAC or RLC PDUs:  NoOfTTIs shall always be 1 |

NR\_L2Data\_Indication\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_L2Data\_Indication\_Type** | | |
| **Comment** | NOTE: formal type definition to allow later enhancements;  L2Data\_Indication\_Type defines data being received in a single slot  i.e. PDUs of subsequent TTIs are indicated in separated ASPs | | |
| SlotData | [NR\_DRB\_DataPerSlot\_UL\_Type](#NR_DRB_DataPerSlot_UL_Type) |  |  |

## D.2.3 System\_Interface

NR\_DRB\_COMMON\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DRB\_COMMON\_REQ** | | |
| **Comment** | common ASP to send PDUs to DRBs | | |
| Common | [NR\_ReqAspCommonPart\_Type](#NR_ReqAspCommonPart_Type) |  | CellId : identifier of the cell  RoutingInfo : QosFlow when SDAP is configured in non-transparent mode at the SS, else DRB id  RlcBearerRouting : TTCN provides the id of the cell hosting the RLC bearer, which the SS shall use to send the data out to the UE (for non-split bearers in general same as CellId)  MacBearerRouting : If NR CA is configured, TTCN provides the id of the cell hosting the physical layer, which the SS shall use to send the data out to the UE. Else 'omit'  TimingInfo : starting point when to start sending sequence of data PDUs  e.g.  SFN = X, subframe number = x; slot number = slot\_i depending on numerology  U\_Plane.SubframeDataList[i].SlotOffset := offset\_i;  => U\_Plane.SubframeDataList[0].PduSduList shall be sent out at (X, x, i)  U\_Plane.SubframeDataList[i].PduSduList shall be sent out offset\_i slots after U\_Plane.SubframeDataList[0].PduSduList (depending on the numerology)  NOTE: In case of K0>0 (K0 according to 38.214 clause 5.1.2.1) the timing specifies the PDCCH assignment (rather than the PDSCH transmission)  ControlInfo : CnfFlag:=false; FollowOnFlag:=false |
| U\_Plane | [NR\_L2Data\_Request\_Type](#NR_L2Data_Request_Type) |  |  |
| SuppressPdcchForC\_RNTI | [Null\_Type](#Null_Type) | opt | By default all DRB\_COMMON\_REQ scheduled DL PDU's are associated with an appropriate explicit configured or SS selected DL assignment allocation on PDCCH.  For SuppressPdcch:=true in the sub frame in which DL PDU's are transmitted, there is no associated DL assignment allocation for configured C-RNTI. This will be used for SPS assignment based transmission or in any error scenarios;  NOTE: this flag has no impact on PDCCH messages required for SPS activation |

NR\_DRB\_COMMON\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_DRB\_COMMON\_IND** | | |
| **Comment** | common ASP to receive PDUs from DRBs | | |
| Common | [NR\_IndAspCommonPart\_Type](#NR_IndAspCommonPart_Type) |  | CellId : identifier of the cell  RoutingInfo : QosFlow when SDAP is configured in non-transparent mode at the SS, else DRB id  RoutingInfoSUL : The SS shall include this field when data is received from SUL carrier. Else 'omit'.  RlcBearerRouting : The SS shall provide the id of the cell hosting the RLC bearer in which the data has been received from the UE  MacBearerRouting : If NR CA is configured, the SS shall provide the id of the cell hosting the physical layer in which the data has been received from the UE. Else 'omit'  TimingInfo : time when message has been received  NOTE 1:  For MAC and RLC PDUs per definition L2Data\_Indication\_Type corresponds to exactly one slot  => TimingInfo refers to this slot  NOTE 2:  For PDCP a single PDU or SDU may take more than one TTI  => TimingInfo refers to the end of the PDU/SDU and the length is given by NoOfTTIs in L2Data\_Indication\_Type  (the end of the PDU/SDU is the last RLC PDU being received; in case of retransmissions this is not necessarily the RLC PDU with the last SN) |
| U\_Plane | [NR\_L2Data\_Indication\_Type](#NR_L2Data_Indication_Type) |  |  |

NR\_DRB\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_DRB\_PORT** | |
| **Comment** |  | |
| out | [NR\_DRB\_COMMON\_REQ](#NR_DRB_COMMON_REQ) |  |
| in | [NR\_DRB\_COMMON\_IND](#NR_DRB_COMMON_IND) |  |

# D.3 NR\_ASP\_SrbDefs

## D.3.1 SRB\_DATA\_ASPs

ASP Definitions to send/receive peer-to-peer messages on SRBs

NR\_C\_Plane\_Request\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_C\_Plane\_Request\_Type** | | |
| **Comment** | RRC and/or NAS PDU to be send to the UE;  Note: it may be necessary to allow more than one NAS PDU (-> "record of") | | |
| Rrc | [NR\_RRC\_MSG\_Request\_Type](#NR_RRC_MSG_Request_Type) | opt | omit: NAS message shall be present; NAS message shall be sent in DLInformationTransfer  present: if NAS message is present also, (piggybacked) NAS PDU shall be security protected  (if necessary) and inserted in RRC PDU's DedicatedInfoNAS |
| Nas | NG\_NAS\_MSG\_RequestList\_Type | opt | omit: RRC message shall be present; RRC message does not contain (piggybacked) NAS PDU  present: if RRC message is omitted => NAS message shall be sent embedded in DLInformationTransfer  if RRC message is present => NAS message is piggybacked in RRC message  in case of RRC message is sent on CCCH, NAS message shall be omitted |

NR\_C\_Plane\_Indication\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_C\_Plane\_Indication\_Type** | | |
| **Comment** | RRC and/or NAS PDU to be received from the UE;  Note: it may be necessary to allow more than one NAS PDU (-> "record of") | | |
| Rrc | [NR\_RRC\_MSG\_Indication\_Type](#NR_RRC_MSG_Indication_Type) | opt | omit: NAS message shall be present; NAS message is received in ULInformationTransfer  present: if NAS message is present also, DedicatedInfoNAS contains unstructured and  ciphered NAS message and the NAS message is the deciphered message in structured format |
| Nas | NG\_NAS\_MSG\_IndicationList\_Type | opt | omit: RRC message shall be present; RRC message does not contain (piggybacked) NAS PDU  present: if RRC message is omitted => NAS message has been received in ULInformationTransfer  if RRC message is present => NAS message has been piggybacked in RRC message  NOTE:  even though currently (DEC 08 ASN.1) there is no RRC PDU in UL containing more than one  DedicatedInfoNAS we provide a list to allow extendability |

NR\_SRB\_COMMON\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SRB\_COMMON\_REQ** | | |
| **Comment** | common ASP to send PDUs to SRB0, SRB1 or SRB2 | | |
| Common | [NR\_ReqAspCommonPart\_Type](#NR_ReqAspCommonPart_Type) |  | CellId : identifier of the cell  RoutingInfo : SRB0, SRB1, SRB2, SRB3  RlcBearerRouting : TTCN provides the id of the cell hosting the RLC bearer which the SS shall use to send the data out to the UE (for non-split bearers in general same as CellId)  MacBearerRouting : If NR CA is configured, TTCN provides the id of the cell hosting the physical layer, which the SS shall use to send the data out to the UE. Else 'omit'  TimingInfo : Now in normal cases;  For latency tests TimingInfo can be set to the SFN/subframe  in which the RRC messages shall be sent out (in this case and  if the RRC PDU is too long to be sent in one TTI  the TimingInfo corresponds to the first TTI)  ControlInfo  CnfFlag:=false;  FollowOnFlag  true: Indicates that the message(s) to be sent on the same TTI will follow  NOTE 1: When FollowOnFlag is true, TimingInfo shall always be "Now". Otherwise SS shall produce an error  NOTE 2: the FollowOnFlag applies only for messages of the same SRB  false: Indicates that no more message(s) will follow |
| Signalling | [NR\_C\_Plane\_Request\_Type](#NR_C_Plane_Request_Type) |  |  |

NR\_SRB\_COMMON\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SRB\_COMMON\_IND** | | |
| **Comment** | common ASP to receive PDUs from SRB0, SRB1 or SRB2 | | |
| Common | [NR\_IndAspCommonPart\_Type](#NR_IndAspCommonPart_Type) |  | CellId : identifier of the cell  RoutingInfo : SRB0, SRB1, SRB2, SRB3  RoutingInfoSUL : The SS shall include this field when data is received from SUL carrier. Else 'omit'.  RlcBearerRouting : The SS shall provide the id of the cell hosting the RLC bearer in which the data has been received from the UE  MacBearerRouting : If NR CA is configured, the SS shall provide the id of the cell hosting the physical layer in which the data has been received from the UE. Else 'omit'  TimingInfo : time when message has been received  (as received from the SS by the NAS emulator) |
| Signalling | [NR\_C\_Plane\_Indication\_Type](#NR_C_Plane_Indication_Type) |  |  |

## D.3.2 Port\_Definitions

NR\_SRB\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SRB\_PORT** | |
| **Comment** | NR PTC: Port for Sending/Receiving data on SRBs | |
| out | [NR\_SRB\_COMMON\_REQ](#NR_SRB_COMMON_REQ) |  |
| in | [NR\_SRB\_COMMON\_IND](#NR_SRB_COMMON_IND) |  |

NASEMU\_NR\_SRB\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NASEMU\_NR\_SRB\_PORT** | |
| **Comment** | NASEMU PTC: Port for Sending/Receiving data on SRBs (interface to NR PTC) | |
| out | [NR\_SRB\_COMMON\_IND](#NR_SRB_COMMON_IND) |  |
| in | [NR\_SRB\_COMMON\_REQ](#NR_SRB_COMMON_REQ) |  |

# D.4 NR\_CommonDefs

## D.4.1 Common\_Types

Common\_Types: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_HarqProcessId\_Type** | integer | HARQ process id; NOTE: there seems to be no need for any value restriction |
| **NR\_AbsoluteCellPower\_Type** | integer (-150..0) | absolute cell power (dBm) |

NR\_RRC\_MSG\_Request\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RRC\_MSG\_Request\_Type** | |
| **Comment** | DL RRC PDU on CCCH or DCCH | |
| Ccch | DL\_CCCH\_Message |  |
| Dcch | DL\_DCCH\_Message |  |

NR\_RRC\_MSG\_Indication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RRC\_MSG\_Indication\_Type** | |
| **Comment** | UL RRC PDU on CCCH or DCCH | |
| Ccch | UL\_CCCH\_Message |  |
| Ccch1 | UL\_CCCH1\_Message |  |
| Dcch | UL\_DCCH\_Message |  |

NR\_HarqProcessList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_HarqProcessList\_Type** |
| **Comment** | list of HARQ processes: each element shall be unique; NOTE: there seems to be no need for any length restriction |
| record of [NR\_HarqProcessId\_Type](#NR_HarqProcessId_Type) | |

## D.4.2 RRC\_Nested\_Types

RRC\_Nested\_Types: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_PrioritizedBitRate\_Type** | LogicalChannelConfig.ul\_SpecificParameters.prioritisedBitRate |  |
| **NR\_SiPeriodicity\_Type** | SchedulingInfo.si\_Periodicity |  |
| **NR\_PosSI\_Periodicity\_Type** | PosSchedulingInfo\_r16.posSI\_Periodicity\_r16 |  |
| **NR\_SiWindowLength\_Type** | SI\_SchedulingInfo.si\_WindowLength |  |

## D.4.3 ASP\_CommonPart

Definition of ASP common parts for REQ-, CNF- and IND-ASPs

### D.4.3.1 ASP\_CommonPart\_Definitions

#### D.4.3.1.1 Routing\_Info

Routing\_Info: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_RoutingInfoSUL\_Type** | [Null\_Type](#Null_Type) |  |

NR\_RadioBearerId\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RadioBearerId\_Type** | |
| **Comment** |  | |
| Srb | [SRB\_Identity\_Type](#SRB_Identity_Type) |  |
| Drb | DRB\_Identity |  |

NR\_RoutingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_RoutingInfo\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| RadioBearerId | [NR\_RadioBearerId\_Type](#NR_RadioBearerId_Type) | routing of signalling and user plane data when SDAP is not configured at the SS for the DRB or it is configured in transparent mode |
| QosFlow | [QosFlow\_Identification\_Type](#QosFlow_Identification_Type) | routing of user plane data with SDAP being configured in non-transparent mode at the SS |

MacBearerRouting\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **MacBearerRouting\_Type** | | |
| **Comment** | Physical layer cell data routing.  Applicable for NR CA, multi-RAT Dual Connectivity (MR-DC) with NR CA as well as single-RAT Dual Connectivity with NR CA | | |
| NR | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |

### D.4.3.2 REQ\_ASP\_CommonPart

NR\_ReqAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_ReqAspCommonPart\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |
| RoutingInfo | [NR\_RoutingInfo\_Type](#NR_RoutingInfo_Type) |  |  |
| RlcBearerRouting | [RlcBearerRouting\_Type](#RlcBearerRouting_Type) |  |  |
| MacBearerRouting | [MacBearerRouting\_Type](#MacBearerRouting_Type) | opt |  |
| TimingInfo | [TimingInfo\_Type](#TimingInfo_Type) |  |  |
| ControlInfo | [ReqAspControlInfo\_Type](#ReqAspControlInfo_Type) |  |  |

### D.4.3.3 CNF\_ASP\_CommonPart

NR\_CnfAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_CnfAspCommonPart\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |
| RoutingInfo | [NR\_RoutingInfo\_Type](#NR_RoutingInfo_Type) |  |  |
| TimingInfo | [TimingInfo\_Type](#TimingInfo_Type) |  |  |
| Result | [ConfirmationResult\_Type](#ConfirmationResult_Type) |  |  |

### D.4.3.4 IND\_ASP\_CommonPart

NR\_IndAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_IndAspCommonPart\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |
| RoutingInfo | [NR\_RoutingInfo\_Type](#NR_RoutingInfo_Type) |  |  |
| RoutingInfoSUL | [NR\_RoutingInfoSUL\_Type](#NR_RoutingInfoSUL_Type) | opt |  |
| RlcBearerRouting | [RlcBearerRouting\_Type](#RlcBearerRouting_Type) |  |  |
| MacBearerRouting | [MacBearerRouting\_Type](#MacBearerRouting_Type) | opt |  |
| TimingInfo | [TimingInfo\_Type](#TimingInfo_Type) |  |  |
| Status | [IndicationStatus\_Type](#IndicationStatus_Type) |  |  |

# D.5 IP\_ASP\_TypeDefs

General Notes:  
NOTE 1:  
In general the handling of IP data shall be independent from the RAT being used on lower layers.  
NOTE 2:  
It shall be possible for SS implementation to reuse existing IP stack implementations in the system adaptor;  
therefore the well-known concept of socket programming shall be supported  
(regardless of whether those are used in the system adaptor implementation or not)  
NOTE 3:  
Since in general at the network side there are several different IP addresses the SS needs to simulate more than one IP address;  
that can be based on a concept of multiple virtual network adaptors  
NOTE 4:  
There is no easy way to control the routing of IP data for an IP connection from above the IP stack  
i.e. there are no parameters at the socket interface to determine e.g. cell id and DRB id  
=> another independent logical entity (DRB-MUX) is needed below the IP stack which is responsible to control the routing of IP packets from/to DRBs in different cells of different RATs  
  
Reference:  
An introduction to socket programming can be found in  
UNIX Network Programming Volume 1, Third Edition: The Sockets Networking API  
by W. Richard Stevens, Bill Fenner, Andrew M. Rudoff

## D.5.1 IP\_Common

IP\_Common: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **PortNumber\_Type** | [UInt16\_Type](#UInt16_Type) |  |

IPv4\_AddrInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPv4\_AddrInfo\_Type** | | |
| **Comment** | IPv4 specific info of the socket addr (AF\_INET) | | |
| Addr | charstring |  | IP Address as string (IP v4 dot notation) to be converted to 32-bit unsigned integer |

IPv6\_AddrInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPv6\_AddrInfo\_Type** | | |
| **Comment** | IPv6 specific info of the socket addr (AF\_INET6);  NOTE: sin6\_flowinfo can be ignored and set to 0 | | |
| Addr | charstring |  | to be converted to sin6\_addr |
| ScopeId | [UInt32\_Type](#UInt32_Type) | opt | sin6\_scope\_id  in general an IPv6 address is like "fe80::1%eth0" with eth0 being the network adaptor mapped to a scope id (Unix)  assumption:  for UE conformance testing it is not necessary to distinguish different scopes and the scope id in general can be determined by the system adaptor => omit |

IP\_AddrInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_AddrInfo\_Type** | |
| **Comment** |  | |
| V4 | [IPv4\_AddrInfo\_Type](#IPv4_AddrInfo_Type) |  |
| V6 | [IPv6\_AddrInfo\_Type](#IPv6_AddrInfo_Type) |  |

IP\_Socket\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_Socket\_Type** | | |
| **Comment** | Socket | | |
| IpAddr | [IP\_AddrInfo\_Type](#IP_AddrInfo_Type) | opt | IP address |
| Port | [PortNumber\_Type](#PortNumber_Type) | opt | port number |

InternetProtocol\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **InternetProtocol\_Type** |
| **Comment** |  |
| udp |  |
| tcp |  |
| icmp |  |
| icmpv6 |  |

IP\_Connection\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_Connection\_Type** | | |
| **Comment** | A connection between peer-to-peer entities is unambiguously defined by the protocol (udp/tcp/icmp/icmpv4), the local socket and the remote socket | | |
| Protocol | [InternetProtocol\_Type](#InternetProtocol_Type) |  |  |
| Local | [IP\_Socket\_Type](#IP_Socket_Type) | opt |  |
| Remote | [IP\_Socket\_Type](#IP_Socket_Type) | opt |  |

## D.5.2 IP\_Config

Configuration of the routing table managed be the system adaptor's DRB-MUX:  
foreach IP connection it is specified which  
- RAT  
- Cell  
- DRB  
to be used.  
The IP connection does not need to be fully specified depending on the role SS plays (e.g. in case of a server role the port number of the remote side is not known in advance).  
The configurations of DRBs within the same cell shall be mutual exclusive.  
  
With the configuration of the IP routing the DRB is configured either in IP or in raw mode:  
either there are entries for the DRB in the routing table (IP mode) or not (raw mode)  
=> It is not necessary to reconfigure this for the respective RAT.  
  
Behaviour of the DRB-MUX in UL:  
- SS gets data packet from the lower layers (e.g. PDCP SDU)  
- SS checks whether there is any IP connection configured for this DRB (identified by {RAT, CellId, DrbId})  
 if YES => packet is routed to the IP stack (IP mode)  
 if NO => packet is handed over to the DRB port (raw mode)  
NOTE 1:  
If there is any entry for a DRB in the routing table this DRB is considered as being in IP mode and all UL IP packets are sent to the IP stack regardless of whether their addresses match the DRB's routing entries or not (in general 'unknown' packets are discarded by the IP stack)  
=> a DRB can be either in IP or in raw mode  
NOTE 2:  
=> The SS does not need to evaluate any IP headers to decide whether data shall be routed to the DRB port or to the IP stack (i.e. there is no conflict with unstructured loopback data)  
  
Behaviour of the DRB-MUX in DL:  
- SS gets IP packets from the IP stack for an IP connection  
- SS compares the IP connection (protocol, local/remote IP Addr) against the IP routing table and  
 checks whether the corresponding protocol stack is configured at the lower layers =>  
 1. no match:  
 no entry in the routing table fits to the address in the IP packet  
 or the corresponding RB is not configured  
 => SS shall raise an error (DRBMUX\_COMMON\_IND\_CNF.Error)  
 2. one match:  
 There is exactly one possibility to route the IP packet  
 => SS shall send the packet to this RB  
 3. several matches:  
 There are more than one DRBs, cells or RATs to which the packet may be routed  
 => SS shall raise an error if there is more than one DRB in one cell matching;  
 if the DRBs belong to different cells or RATs SS shall send the data to all of them  
 (whether this may occur in test cases is FFS)  
  
General notes:  
NOTE 1:  
SS may use the information of the routing table to determine which network adaptors it needs to simulate (implementation dependent);  
in general there will be more than one IP address at the network side.  
NOTE 2:  
In general the routing table is a simplified DL TFT implementation  
NOTE 3:  
When the routing table is empty all DRBs are in raw mode; this shall be the initial condition at the DRB-MUX;  
=> for L2 testing in general (and apart from the preamble) there is no need to use/configure the IP\_PTC; the configuration of the RAT specific U-plane stacks is not affected

IP\_DataMode\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **IP\_DataMode\_Type** |
| **Comment** |  |
| discard |  |
| loopbackRTP |  |
| loopbackRTCP |  |
| IPsecTunnel |  |

IP\_RoutingInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_RoutingInfo\_Type** | | |
| **Comment** |  | | |
| IpInfo | [IP\_Connection\_Type](#IP_Connection_Type) |  | IP connection tuple: protocol, local socket, remote socket  depending on the role the SS plays the following information may be provided  (informative; even less information can be sufficient):  1. TCP/UDP server  - local IP addr -- provided  - local port -- provided  - remote IP addr -- omit  - remote port -- omit  2. TCP/UDP client  - local IP addr -- provided  (to inform SS about the local IP addr for this service)  - local port -- omit;  for UDP a well-defined port may be defined  (protocol dependent, e.g. DHCP)  - remote IP addr -- provided  - remote port -- provided  3. ICMP (in general ICMP may be mapped only to a single DRB)  - local IP addr -- provided  (to inform SS about the local IP addr for this service)  - local port -- n/a (shall be set to omit)  - remote IP addr -- omit  - remote port -- n/a (shall be set to omit)  NOTE:  In case of broadcasts in UL the broadcast address shall match any local IP address;  in DL for broadcast services typically no remote IP address is specified in the routing table |
| DRB | [IP\_DrbInfo\_Type](#IP_DrbInfo_Type) |  |  |
| DataMode | [IP\_DataMode\_Type](#IP_DataMode_Type) | opt | present when IP packets matching this entry shall be discarded or be looped back to the UE as defined for RTP or RTCP |

IP\_RoutingTable\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **IP\_RoutingTable\_Type** |
| **Comment** | NOTE: configurations of DRBs within the same cell shall be mutual exclusive |
| record of [IP\_RoutingInfo\_Type](#IP_RoutingInfo_Type) | |

## D.5.3 IPsec\_Config

IP\_ASP\_TypeDefs: Constant Definitions

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Basic Types** | | | |
| **tsc\_IPsec\_SPI\_Max** | integer | 4294967295 |  |

IPsec\_Config: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **IPsec\_SPI\_Type** | integer (0..[tsc\_IPsec\_SPI\_Max](#tsc_IPsec_SPI_Max)) | security parameter index for IPsec;  According to RFC 2406, SPI values from 0 to 255 are reserved |

IPsec\_IntegrityAlgorithm\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **IPsec\_IntegrityAlgorithm\_Type** |
| **Comment** |  |
| hmac\_md5\_96 |  |
| hmac\_sha\_1\_96 |  |

IPsec\_CipheringAlgorithm\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **IPsec\_CipheringAlgorithm\_Type** |
| **Comment** |  |
| des\_ede3\_cbc |  |
| aes\_cbc |  |
| nociph | no ciphering |

IPsec\_SecurityKeys\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPsec\_SecurityKeys\_Type** | | |
| **Comment** | to install the security keys | | |
| MD5\_96Key | bitstring length (128) |  |  |
| SHA\_1\_96Key | bitstring length (160) |  |  |
| DES\_EDE3\_CBCKey | bitstring length (192) |  |  |
| AES\_CBCKey | bitstring length (128) |  |  |

IPsec\_SecurityAssociation\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPsec\_SecurityAssociation\_Type** | | |
| **Comment** | single security association (SA);  for configuration of an SA at the SS all fields are mandatory;  to release an SA the optional information is omitted | | |
| SPI | [IPsec\_SPI\_Type](#IPsec_SPI_Type) |  |  |
| SrcAddress | charstring |  |  |
| DestAddress | charstring |  |  |
| SrcPort | [UInt16\_Type](#UInt16_Type) |  |  |
| DestPort | [UInt16\_Type](#UInt16_Type) |  |  |
| IntegrityAlgorithm | [IPsec\_IntegrityAlgorithm\_Type](#IPsec_IntegrityAlgorithm_Type) | opt | mandatory to set-up an SA |
| CipheringAlgorithm | [IPsec\_CipheringAlgorithm\_Type](#IPsec_CipheringAlgorithm_Type) | opt | mandatory to set-up an SA |

IPsec\_SecurityAssociationList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **IPsec\_SecurityAssociationList\_Type** |
| **Comment** |  |
| record of [IPsec\_SecurityAssociation\_Type](#IPsec_SecurityAssociation_Type) | |

IPsec\_Configure\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPsec\_Configure\_Type** | | |
| **Comment** | add new security associations; existing SAs are not affected | | |
| SA\_List | [IPsec\_SecurityAssociationList\_Type](#IPsec_SecurityAssociationList_Type) |  |  |
| SecurityKeys | [IPsec\_SecurityKeys\_Type](#IPsec_SecurityKeys_Type) |  |  |

IPsec\_Release\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IPsec\_Release\_Type** | | |
| **Comment** | release security associations;  NOTE:  in context with multiple PDNs it cannot be ensured that all SPIs are unique;  e.g. the UE may use the same SPI values in different PDNs in which case uniqueness cannot be achieved  furthermore it depends on the system implementation how entries in the IPsec SAD and SPD are administrated  => to release SAs the SS gets the same information as for configuration but without the security algorithms | | |
| SA\_List | [IPsec\_SecurityAssociationList\_Type](#IPsec_SecurityAssociationList_Type) |  |  |

## D.5.4 IP\_SocketHandling

Handling of IP data and IP connections  
NOTE 1:  
In general IP connections are distinguished by the tuple {protocol, local socket, remote socket};  
this information is used at the interface between TTCN and the system adaptor.  
It is up the system adaptor implementation to associate the IP connection with the internal socket (file descriptor; implementation dependent)  
NOTE 2:  
In general the association of the IP connections to (internal) sockets and the routing table for the DRB mapping (as configured with IP\_RoutingTable\_Type) are independent from each other

### D.5.4.1 Socket\_Common

IP\_SockOpt\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_SockOpt\_Type** | |
| **Comment** | socket options acc. to the setsockopt system call (i.e. for level=SOL\_SOCKET in case of Berkeley socket API);  NOTE:  only options being relevant for a specific applications (upon a socket) are configured by TTCN  other options (e.g. SO\_REUSEADDR) are out of TTCN and therefore a matter of system adaptor implementation | |
| SO\_BROADCAST | boolean | set to true when IP broadcast messages shall be allowed for a port;  this is required e.g. in case of DHCP |
| IP\_MTU\_SIZE | integer | MTU size to be used for IP data;  NOTEs:  - Even though the MTU size is defined as socket option it shall be the same for all sockets of a given interface (i.e. at least within one PDN the MTU size shall be the same)  - in general a PIXIT is used as constant value for all sockets |

IP\_SockOptList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **IP\_SockOptList\_Type** |
| **Comment** |  |
| record of [IP\_SockOpt\_Type](#IP_SockOpt_Type) | |

IP\_SocketError\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_SocketError\_Type** | |
| **Comment** | used to indicate errors related to sockets;  the IP\_Connection shall contain as much address information as available at the system adaptor | |
| InvalidAddress | [Null\_Type](#Null_Type) | TTCN error: e.g. invalid or incomplete address information |
| System | integer | system error caused by system call;  the integer value may be used for validation but shall not be evaluated by TTCN |

### D.5.4.2 Socket\_Datagram

Socket\_Datagram: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **Datagram\_Content\_Type** | octetstring | data as sent/received with sendto()/recvfrom() on UDP or ICMP socket;  NOTE:  For ICMP the data may depend on the socket options;  in general it does not include the IP header and  the checksum of the ICMP packet needs to be calculated/checked in TTCN |

Datagram\_DL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **Datagram\_DL\_Type** | | |
| **Comment** | datagram to be sent at a UDP or ICMP socket | | |
| Buffer | [Datagram\_Content\_Type](#Datagram_Content_Type) |  | content of the IP packet |

Datagram\_UL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **Datagram\_UL\_Type** | | |
| **Comment** | datagram as received on a UDP or ICMP socket | | |
| Buffer | [Datagram\_Content\_Type](#Datagram_Content_Type) |  | content of the IP packet |
| DrbInfo | [IP\_DrbInfo\_Type](#IP_DrbInfo_Type) | opt | "interface id" where the data comes from in case of broadcast or multicast packets:  for the LTE test model this is the DRB on which the IP packet has been received;  the information is necessary when the SS cannot resolve an IP address being assigned to that DRB.  => when the SS provides a broadcast or multicast address as local address in the ConnectionId of the ASP, the SS shall provide the DRB information in this field  When the ConnectionId of the ASP is fully specified and unique (unicast address at least for local address) the DrbId is ignored by TTCN |

### D.5.4.3 TCP\_Socket

TCP primitives used on the IP port

TCP\_Socket: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **TCP\_Data\_Type** | octetstring | data as sent/received with send()/recv() on a TCP socket |

InternetApplication\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **InternetApplication\_Type** |
| **Comment** | as TCP is stream oriented SS may need information about which criteria to be applied to get start/end of an application message |
| ims |  |
| http |  |
| msrp |  |

TLS\_CIPHER\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **TLS\_CIPHER\_Type** |
| **Comment** | Cipher suite to be used for TLS |
| TLS\_PSK\_WITH\_RC4\_128\_SHA | RFC 4279 |
| TLS\_PSK\_WITH\_3DES\_EDE\_CBC\_SHA | RFC 4279 |
| TLS\_PSK\_WITH\_AES\_128\_CBC\_SHA | RFC 4279 |
| TLS\_PSK\_WITH\_AES\_256\_CBC\_SHA | RFC 4279 |
| TLS\_PSK\_WITH\_AES\_128\_CBC\_SHA256 | RFC 5487 |
| TLS\_RSA\_WITH\_NULL\_MD5 | RFC 5246 |
| TLS\_RSA\_WITH\_NULL\_SHA | RFC 5246 |
| TLS\_RSA\_WITH\_NULL\_SHA256 | RFC 5246 |
| TLS\_RSA\_WITH\_RC4\_128\_MD5 | RFC 5246 |
| TLS\_RSA\_WITH\_RC4\_128\_SHA | RFC 5246 |
| TLS\_RSA\_WITH\_3DES\_EDE\_CBC\_SHA | RFC 5246 |
| TLS\_RSA\_WITH\_AES\_128\_CBC\_SHA | RFC 5246 |
| TLS\_RSA\_WITH\_AES\_256\_CBC\_SHA | RFC 5246 |
| TLS\_RSA\_WITH\_AES\_128\_CBC\_SHA256 | RFC 5246 |
| TLS\_RSA\_WITH\_AES\_256\_CBC\_SHA256 | RFC 5246 |

PSK\_BootstrappingInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **PSK\_BootstrappingInfo\_Type** | | |
| **Comment** | bootstrapping information as defined in 24.109 | | |
| BTid | charstring |  |  |
| Ks\_NAF | bitstring |  |  |

TLS\_PSK\_Info\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **TLS\_PSK\_Info\_Type** | | |
| **Comment** | configuration information for PSK TLS | | |
| IdentityHint | charstring |  |  |
| BootstrappingInfo | [PSK\_BootstrappingInfo\_Type](#PSK_BootstrappingInfo_Type) |  |  |

TLS\_CipherSuiteInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TLS\_CipherSuiteInfo\_Type** | |
| **Comment** |  | |
| psk | [TLS\_PSK\_Info\_Type](#TLS_PSK_Info_Type) |  |

TLSPSKInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **TLSPSKInfo\_Type** | | |
| **Comment** |  | | |
| cipherSuite | [TLS\_CIPHER\_Type](#TLS_CIPHER_Type) |  | Cipher suite to be used |
| cipherSuiteInfo | [TLS\_CipherSuiteInfo\_Type](#TLS_CipherSuiteInfo_Type) |  | parameters for the respective cipher suite |

TLSCertificateInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **TLSCertificateInfo\_Type** | | |
| **Comment** |  | | |
| certificate | charstring |  | name or file location of the certificate to be used by the SS; in general provided by a PIXIT:  the PIXIT contains the SS implementation specific information for the SS to identify the certificate to be used for a particular TLS connection;  in case of only one certificate being used by TTCN, the string may be empty |
| cipherSuite | [TLS\_CIPHER\_Type](#TLS_CIPHER_Type) |  | (non-PSK) cipher suite to be used for the TLS tunnel; the SS shall raise an error when it detects that the UE does not support the configured cipher suite |

TLSConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TLSConfig\_Type** | |
| **Comment** |  | |
| pskInfo | [TLSPSKInfo\_Type](#TLSPSKInfo_Type) | Used in the case of PSK |
| certificateInfo | [TLSCertificateInfo\_Type](#TLSCertificateInfo_Type) | Used in the case of certificate based TLS |

TCP\_ConnectRequest\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **TCP\_ConnectRequest\_Type** | | |
| **Comment** | TCP client: -> 'connect' system call | | |
| SockOptList | [IP\_SockOptList\_Type](#IP_SockOptList_Type) |  | when there are no options to configure the list is empty |
| Application | [InternetApplication\_Type](#InternetApplication_Type) |  | to specify start/end criteria for application messages |

TCP\_Listen\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **TCP\_Listen\_Type** | | |
| **Comment** | TCP server: -> 'listen' system call | | |
| SockOptList | [IP\_SockOptList\_Type](#IP_SockOptList_Type) |  | when there are no options to configure the list is empty |
| Application | [InternetApplication\_Type](#InternetApplication_Type) |  | to specify start/end criteria for application messages |
| TLSConfig | [TLSConfig\_Type](#TLSConfig_Type) | opt | to support TLS for HTTP server implementation |

TCP\_CtrlRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TCP\_CtrlRequest\_Type** | |
| **Comment** |  | |
| ConnectReq | [TCP\_ConnectRequest\_Type](#TCP_ConnectRequest_Type) | request a 'connect' to a remote server  system calls (informative)  socket -- get file descriptor  (setsockopt) -- normally not needed  bind -- assign local IP addr (to cope with multiple IP addresses) and dedicated port number (if local port is given)  connect -- connect to the client  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory to distinguish different network adaptors  local port -- omit (ephemeral port will be assigned by the system) or specific port to be used for this connection (e.g. to bind a given port number to the IMS client)  remote IP addr -- mandatory  remote port -- mandatory |
| Listen | [TCP\_Listen\_Type](#TCP_Listen_Type) | establish a server at the local (SS) side  system calls (informative)  socket -- get file descriptor  (setsockopt) -- if needed  bind -- assign local IP addr and port  listen -- await incoming connection  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory to distinguish different network adaptors  local port -- mandatory  remote IP add -- omit  remote port -- omit |
| Close | [Null\_Type](#Null_Type) | close a connection  system calls (informative):  close  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory  local port -- mandatory  remote IP addr -- mandatory for TCP connections, omit for TCP server  remote port -- mandatory for TCP connections, omit for TCP server |

TCP\_DataRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TCP\_DataRequest\_Type** | |
| **Comment** |  | |
| Send | [TCP\_Data\_Type](#TCP_Data_Type) | send data  system calls (informative):  send or write  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory  local port -- mandatory  remote IP addr -- mandatory  remote port -- mandatory |

TCP\_CtrlIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TCP\_CtrlIndication\_Type** | |
| **Comment** |  | |
| ConnectCnf | [Null\_Type](#Null_Type) | confirm a 'connect' to a remote server  system calls (informative):  getsockname -- get local port (ephemeral port assigned by the system)  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory (as in corresponding TCP\_ConnectRequest)  local port -- mandatory (if there is more than one connection to the same server the local port is necessary to distinguish the connections)  remote IP addr -- mandatory (as in corresponding TCP\_ConnectRequest)  remote port -- mandatory (as in corresponding TCP\_ConnectRequest) |
| Accept | [Null\_Type](#Null_Type) | sent by the SS when it 'accepts' an incoming connection  system calls (informative):  accept  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory (as in corresponding TCP\_ListenRequest)  local port -- mandatory (as in corresponding TCP\_ListenRequest)  remote IP addr -- mandatory (as gotten from 'accept')  remote port -- mandatory (as gotten from 'accept') |
| Close | [Null\_Type](#Null_Type) | indicate 'close' by the remote side  system calls (informative):  indicated by recv or read  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory  local port -- mandatory  remote IP addr -- mandatory  remote port -- mandatory |
| CloseCnf | [Null\_Type](#Null_Type) | Confirmation for 'close' request; necessary since for TCP there are IP packets to release the connection  system calls (informative):  close  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory  local port -- mandatory  remote IP addr -- mandatory for TCP connections, omit for TCP server  remote port -- mandatory for TCP connections, omit for TCP server |

TCP\_DataIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TCP\_DataIndication\_Type** | |
| **Comment** |  | |
| Recv | [TCP\_Data\_Type](#TCP_Data_Type) | receive data  system calls (informative):  recv or read  IP\_Connection:  protocol -- tcp  local IP addr -- mandatory  local port -- mandatory  remote IP addr -- mandatory  remote port -- mandatory |

### D.5.4.4 UDP\_Socket

UDP primitives used on the IP port  
NOTE:  
In principle a UDP socket may communicate with different remote entities;  
therefore the system adaptor may associate the socket handle with the local socket only  
(local IP address and local port)

UDP\_SocketReq\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **UDP\_SocketReq\_Type** | | |
| **Comment** | to establish a UDP server or to bind local port number | | |
| SockOptList | [IP\_SockOptList\_Type](#IP_SockOptList_Type) |  | e.g. to allow broadcast messages;  when there are no options to configure the list is empty |

UDP\_CtrlRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **UDP\_CtrlRequest\_Type** | |
| **Comment** |  | |
| SocketReq | [UDP\_SocketReq\_Type](#UDP_SocketReq_Type) | request the system adaptor to bind a socket to a local address;  this is needed in general when the system adaptor acts as  1. UDP server  2. UDP client when it uses a well-known port rather than an ephemeral port (this is e.g. for DHCP)  3. UDP client when a local address needs to be bond (e.g. when there are several local addresses)  system calls (informative):  socket -- get file descriptor  (setsockopt) -- needed e.g. to allow broad cast message  bind -- assign local IP address (to cope with multiple IP addresses) and local port (in case of well-known local port)  IP\_Connection:  protocol -- udp  local IP addr -- mandatory (to distinguish multiple IP addresses)  local port -- optional (mandatory in case of a UDP server)  remote IP addr -- omit  remote port -- omit |
| Close | [Null\_Type](#Null_Type) | release local socket  system calls (informative):  close  IP\_Connection:  protocol -- udp  local IP addr -- mandatory (to identify local socket)  local port -- mandatory (to identify local socket)  remote IP addr -- omit  remote port -- omit |

UDP\_DataRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **UDP\_DataRequest\_Type** | |
| **Comment** |  | |
| SendTo | [Datagram\_DL\_Type](#Datagram_DL_Type) | send data to (any) remote socket;  NOTE:  To simplify implementation of the system adaptor the local socket shall be bond in any case (using 'SocketReq') to specify the local IP address before sending data;  (in general the sendto system call can be used without explicitly binding the socket before;  in this case the port gets implicitly bond to an ephemeral port and the default IP address is used)  system calls (informative):  sendto  IP\_Connection:  protocol -- udp  local IP addr -- mandatory (to identify local socket)  local port -- mandatory (to identify local socket)  remote IP addr -- mandatory (to address remote socket)  remote port -- mandatory (to address remote socket) |

UDP\_CtrlIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **UDP\_CtrlIndication\_Type** | |
| **Comment** |  | |
| SocketCnf | [Null\_Type](#Null_Type) | confirm 'SocketReq' and tell TTCN about assignment of ephemeral port;  system calls (informative):  getsockname -- get local port (ephemeral port assigned by the system; not needed if local port is well-known)  IP\_Connection:  protocol -- udp  local IP addr -- mandatory  local port -- mandatory (well-known or ephemeral port assigned by the system)  remote IP addr -- omit  remote port -- omit |

UDP\_DataIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **UDP\_DataIndication\_Type** | |
| **Comment** |  | |
| RecvFrom | [Datagram\_UL\_Type](#Datagram_UL_Type) | receive data;  system calls (informative):  recvfrom -- get data and src addr  IP\_Connection:  protocol -- udp  local IP addr -- mandatory (see note)  local port -- mandatory  remote IP addr -- mandatory (as gotten from recvfrom)  remote port -- mandatory (as gotten from recvfrom)  NOTE:  The UE may send a UDP packet as broadcast (IP Addr 255.255.255.255 - e.g. in case of DHCP) or multicast (e.g. ICMPv6)  SS shall consider a broadcast address as matching every IP for UL and DL;  the SS shall not replace the broadcast/multicast address by the local unicast address, but shall provide DRB information in RecvFrom;  example:  - SS gets DHCPDISCOVER with DEST\_Addr=255.255.255.255 DEST\_Port=67, SRC\_Addr=0.0.0.0 SRC\_Port=68  - TTCN gets DHCPDISCOVER with local Addr=(255.255.255.255 Port=67), remote Addr=(0.0.0.0 Port=68), DrbId=(LTE, cell1, DRB1)  - TTCN sends DHCPOFFER with local Addr=(local IP Addr Port=67), remote Addr=(255.255.255.255 Port=68) |

### D.5.4.5 ICMP\_Socket

ICMP primitives used on the IP port  
NOTE:  
the local side is identified by the protocol and in general by the local IP address

ICMP\_SocketReq\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **ICMP\_SocketReq\_Type** | | |
| **Comment** | to establish a raw socket to send/receive ICMP packets | | |
| SockOptList | [IP\_SockOptList\_Type](#IP_SockOptList_Type) |  | e.g. to set the IP\_HDRINCL socket option (to include the IP header in the data buffer)  when there are no options to configure the list is empty |

ICMP\_CtrlRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ICMP\_CtrlRequest\_Type** | |
| **Comment** |  | |
| SocketReq | [ICMP\_SocketReq\_Type](#ICMP_SocketReq_Type) | request the system adaptor to open a raw socket (IPv4 or IPv6)  system calls (informative):  socket -- get file descriptor (IPPROTO\_ICMP or IPPROTO\_IPV6);  (setsockopt) -- optional; to set socket options  bind -- assign local IP address (to cope with multiple IP addresses)  IP\_Connection:  protocol -- icmp or icmpv6  local IP addr -- mandatory (to distinguish multiple IP addresses)  local port -- omit (not applicable for ICMP)  remote IP addr -- omit  remote port -- omit (not applicable for ICMP) |
| Close | [Null\_Type](#Null_Type) | release local socket  system calls (informative):  close  IP\_Connection:  protocol -- icmp or icmpv6  local IP addr -- mandatory (to identify local socket)  local port -- omit  remote IP addr -- omit  remote port -- omit |

ICMP\_DataRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ICMP\_DataRequest\_Type** | |
| **Comment** |  | |
| SendTo | [Datagram\_DL\_Type](#Datagram_DL_Type) | send datagram  system calls (informative):  sendto  IP\_Connection:  protocol -- icmp or icmpv6  local IP addr -- mandatory (to identify local socket)  local port -- omit  remote IP addr -- mandatory  remote port -- omit |

ICMP\_CtrlIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ICMP\_CtrlIndication\_Type** | |
| **Comment** |  | |
| SocketCnf | [Null\_Type](#Null_Type) | confirm 'SocketReq'  system calls (informative):  (SocketCnf is sent when all system calls for SocketReq have been successful)  IP\_Connection:  protocol -- icmp or icmpv6  local IP addr -- mandatory  local port -- omit  remote IP addr -- omit  remote port -- omit |

ICMP\_DataIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ICMP\_DataIndication\_Type** | |
| **Comment** |  | |
| RecvFrom | [Datagram\_UL\_Type](#Datagram_UL_Type) | receive datagram  system calls (informative):  recvfrom -- get data and src addr  IP\_Connection:  protocol -- icmp or icmpv6  local IP addr -- mandatory (see note)  local port -- omit  remote IP addr -- mandatory (as gotten from recvfrom)  remote port -- omit  NOTE:  As for UDP there may be multicast/broadcast packets.  In this case - as for UDP - the SS shall provide the DRB information in RecvFrom. |

### D.5.4.6 Socket\_Primitives

IP\_CtrlRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_CtrlRequest\_Type** | |
| **Comment** |  | |
| TCP | [TCP\_CtrlRequest\_Type](#TCP_CtrlRequest_Type) |  |
| UDP | [UDP\_CtrlRequest\_Type](#UDP_CtrlRequest_Type) |  |
| ICMP | [ICMP\_CtrlRequest\_Type](#ICMP_CtrlRequest_Type) |  |

IP\_DataRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_DataRequest\_Type** | |
| **Comment** |  | |
| TCP | [TCP\_DataRequest\_Type](#TCP_DataRequest_Type) |  |
| UDP | [UDP\_DataRequest\_Type](#UDP_DataRequest_Type) |  |
| ICMP | [ICMP\_DataRequest\_Type](#ICMP_DataRequest_Type) |  |

IP\_CtrlIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_CtrlIndication\_Type** | |
| **Comment** |  | |
| TCP | [TCP\_CtrlIndication\_Type](#TCP_CtrlIndication_Type) |  |
| UDP | [UDP\_CtrlIndication\_Type](#UDP_CtrlIndication_Type) |  |
| ICMP | [ICMP\_CtrlIndication\_Type](#ICMP_CtrlIndication_Type) |  |
| Error | [IP\_SocketError\_Type](#IP_SocketError_Type) |  |

IP\_DataIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_DataIndication\_Type** | |
| **Comment** |  | |
| TCP | [TCP\_DataIndication\_Type](#TCP_DataIndication_Type) |  |
| UDP | [UDP\_DataIndication\_Type](#UDP_DataIndication_Type) |  |
| ICMP | [ICMP\_DataIndication\_Type](#ICMP_DataIndication_Type) |  |

## D.5.5 System\_Interface

DRBMUX\_CONFIG\_REQ

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DRBMUX\_CONFIG\_REQ** | |
| **Comment** | NOTE 1:  There is just one primitive to configure the whole routing table.  It is not foreseen to add, remove or manipulate single entries but the table is managed in TTCN and completely configured on any change; (otherwise it might get complicated to identify single entries)  NOTE 2:  the SS's routing table shall be empty at the beginning and can be cleared by an empty record (DRBMUX\_CONFIG\_REQ.RoutingInfo = {})  NOTE 3:  In general a reconfiguration of the routing table during a test case would be necessary only if an ephemeral port is needed to distinguish different routing  (e.g. when there are several TCP connections of the same service routed to different DRBs) | |
| RoutingInfo | [IP\_RoutingTable\_Type](#IP_RoutingTable_Type) |  |

DRBMUX\_COMMON\_IND\_CNF

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **DRBMUX\_COMMON\_IND\_CNF** | |
| **Comment** |  | |
| Confirm | [Null\_Type](#Null_Type) | confirm DRBMUX\_CONFIG\_REQ |
| Error | [Null\_Type](#Null_Type) | indication of errors at the DRB-MUX:  An Error shall be raised by the DRB-MUX e.g. in the following cases:  - in DL when there are IP packets which cannot be routed to any DRB  i.e. the IP packet does not match to any entry in the routing table or the corresponding RB is not configured  - in DL when there are several DRBs possible for routing in the same cell |

IPSEC\_CONFIG\_REQ

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IPSEC\_CONFIG\_REQ** | |
| **Comment** |  | |
| Configure | [IPsec\_Configure\_Type](#IPsec_Configure_Type) |  |
| Release | [IPsec\_Release\_Type](#IPsec_Release_Type) |  |

IPSEC\_CONFIG\_CNF

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IPSEC\_CONFIG\_CNF** | |
| **Comment** |  | |
| Confirm | [Null\_Type](#Null_Type) | confirm IPSEC\_CONFIG\_REQ |
| Error | [Null\_Type](#Null_Type) | to indicate invalid configuration of IPsec |

IP\_SOCKET\_CTRL\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_SOCKET\_CTRL\_REQ** | | |
| **Comment** |  | | |
| ConnectionId | [IP\_Connection\_Type](#IP_Connection_Type) |  |  |
| Req | [IP\_CtrlRequest\_Type](#IP_CtrlRequest_Type) |  |  |

IP\_SOCKET\_DATA\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_SOCKET\_DATA\_REQ** | | |
| **Comment** |  | | |
| ConnectionId | [IP\_Connection\_Type](#IP_Connection_Type) |  |  |
| Req | [IP\_DataRequest\_Type](#IP_DataRequest_Type) |  |  |

IP\_SOCKET\_CTRL\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_SOCKET\_CTRL\_IND** | | |
| **Comment** |  | | |
| ConnectionId | [IP\_Connection\_Type](#IP_Connection_Type) | opt | shall be present at the system interface; maybe omit only intenally in inter-PTC coordination |
| Ind | [IP\_CtrlIndication\_Type](#IP_CtrlIndication_Type) | opt | shall be present at the system interface; maybe omit only intenally in inter-PTC coordination |

IP\_SOCKET\_DATA\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_SOCKET\_DATA\_IND** | | |
| **Comment** |  | | |
| ConnectionId | [IP\_Connection\_Type](#IP_Connection_Type) |  |  |
| Ind | [IP\_DataIndication\_Type](#IP_DataIndication_Type) |  |  |

IP\_SOCKET\_REQ

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_SOCKET\_REQ** | |
| **Comment** |  | |
| CTRL | [IP\_SOCKET\_CTRL\_REQ](#IP_SOCKET_CTRL_REQ) |  |
| DATA | [IP\_SOCKET\_DATA\_REQ](#IP_SOCKET_DATA_REQ) |  |

IP\_SOCKET\_IND

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_SOCKET\_IND** | |
| **Comment** |  | |
| CTRL | [IP\_SOCKET\_CTRL\_IND](#IP_SOCKET_CTRL_IND) |  |
| DATA | [IP\_SOCKET\_DATA\_IND](#IP_SOCKET_DATA_IND) |  |

IP\_CONTROL\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **IP\_CONTROL\_PORT** | |
| **Comment** |  | |
| out | [DRBMUX\_CONFIG\_REQ](#DRBMUX_CONFIG_REQ) |  |
| in | [DRBMUX\_COMMON\_IND\_CNF](#DRBMUX_COMMON_IND_CNF) |  |

IPSEC\_CONTROL\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **IPSEC\_CONTROL\_PORT** | |
| **Comment** |  | |
| out | [IPSEC\_CONFIG\_REQ](#IPSEC_CONFIG_REQ) |  |
| in | [IPSEC\_CONFIG\_CNF](#IPSEC_CONFIG_CNF) |  |

IP\_SOCKET\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **IP\_SOCKET\_PORT** | |
| **Comment** |  | |
| out | [IP\_SOCKET\_REQ](#IP_SOCKET_REQ) |  |
| in | [IP\_SOCKET\_IND](#IP_SOCKET_IND) |  |

# D.6 NR\_PDCP\_TypeDefs

## D.6.1 NR\_PDCP\_Config\_Parameters

Parameters defined in or related to NR ASN.1 type PDCP-Config

NR\_PDCP\_SN\_Size\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_PDCP\_SN\_Size\_Type** |
| **Comment** | PDCP Sequence Number |
| PDCP\_SNLength12 | TS 38.323 clause 6.2.2.1 and clause 6.2.2.2 |
| PDCP\_SNLength18 | TS 38.323 clause 6.2.2.3 |

NR\_PDCP\_DRB\_HeaderCompression\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_DRB\_HeaderCompression\_Type** | |
| **Comment** | place holder for header compression | |
| None | [Null\_Type](#Null_Type) |  |

NR\_PDCP\_DRB\_Config\_Parameters\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_DRB\_Config\_Parameters\_Type** | | |
| **Comment** | parameters corrsponding to NR ASN.1 PDCP-Config.drb;  the following parameter are not included and may be added if needed:  - integer DiscardTimer (timer value in milliseconds)  - boolean StatusReportRequired  - boolean OutOfOrderDelivery | | |
| SN\_SizeUL | [NR\_PDCP\_SN\_Size\_Type](#NR_PDCP_SN_Size_Type) |  | PDCP-Config.drb.pdcp-SN-SizeUL |
| SN\_SizeDL | [NR\_PDCP\_SN\_Size\_Type](#NR_PDCP_SN_Size_Type) |  | PDCP-Config.drb.pdcp-SN-SizeDL |
| HeaderCompression | [NR\_PDCP\_DRB\_HeaderCompression\_Type](#NR_PDCP_DRB_HeaderCompression_Type) |  | PDCP-Config.drb.headerCompression |
| IntegrityProtectionEnabled | boolean |  | PDCP-Config.drb.integrityProtection |

NR\_PDCP\_RB\_Config\_Parameters\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_RB\_Config\_Parameters\_Type** | |
| **Comment** |  | |
| Srb | [Null\_Type](#Null_Type) | no SRB specific parameters in NR ASN.1 PDCP-Config |
| Drb | [NR\_PDCP\_DRB\_Config\_Parameters\_Type](#NR_PDCP_DRB_Config_Parameters_Type) | DRB specific parameters corrsponding to NR ASN.1 PDCP-Config.drb |

NR\_PDCP\_Config\_Parameters\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_Config\_Parameters\_Type** | | |
| **Comment** | parameters corrsponding to NR ASN.1 PDCP-Config:  the following parameter are not included and may be added if needed:  - integer TReorderingTimer (timer value in milliseconds) | | |
| Rb | [NR\_PDCP\_RB\_Config\_Parameters\_Type](#NR_PDCP_RB_Config_Parameters_Type) |  |  |
| DuplicateDiscarding | boolean | opt | if omitted:  initial configuration: duplicate discarding function operates as normal  re-configuration: "keep as it is"  if set:  false - SS shall disable the duplicate discarding function of the receiving PDCP entity: a PDCP PDU, using the same SN as a previously received PDCP PDU, shall not be discarded and the resulting PDCP SDU shall be delivered to the upper layer.  true - (re)configuration of duplicate discarding function back to normal operation. |

## D.6.2 NR\_PDCP\_Configuration

NR\_PDCP\_TransparentMode

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_TransparentMode** | | |
| **Comment** |  | | |
| SN\_Size | [NR\_PDCP\_SN\_Size\_Type](#NR_PDCP_SN_Size_Type) |  |  |

NR\_PDCP\_RbConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_RbConfig\_Type** | |
| **Comment** |  | |
| Params | [NR\_PDCP\_Config\_Parameters\_Type](#NR_PDCP_Config_Parameters_Type) | PDCP configuration parameters corresponding to UE configuration |
| TransparentMode | [NR\_PDCP\_TransparentMode](#NR_PDCP_TransparentMode) | PDCP configuration for transparent (test) mode:  used for PDCP tests (TS 38.523-3, cl. 5.1.2.1):  the SS does not apply ciphering, not apply integrity protection and  does not maintain PDCP sequence numbers and state variables;  ROHC is not not applied by the SS.  Note:  a reconfiguration of a RB from transparent mode to 'normal' mode is not foreseen  (i.e. there is no mechanism to restore Ciphering, PDCP sequence numbers and state variables at the SS)  (in UL PDCP PDUs are decoded depending on SN\_Size) |

NR\_PDCP\_RBTerminating\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_RBTerminating\_Type** | | |
| **Comment** | RB terminating PDCP configuration: the PDCP may be linked  - to a local RLC bearer: RLC bearer is configured for the same cell  - to the RLC bearer of some other cell group: LinkToOtherCellGroup is not "None"  - the both (in case of split bearer): RLC bearer is configured for the same cell and LinkToOtherCellGroup is not "None" | | |
| RbConfig | [NR\_PDCP\_RbConfig\_Type](#NR_PDCP_RbConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| LinkToOtherCellGroup | [RlcBearerRouting\_Type](#RlcBearerRouting_Type) | opt | mandatory for initial configuration; omit means "keep as it is"  None: no link to other cell group (normal case, non-split bearer)  RAT/cellId: PDCP is linked to RLC bearer of another cell group (same or other RAT): split bearer or PDCP and RLC bearer being configured at different cells  NOTE: applicable also for PDCP split bearer test cases when PDCP is in transparent mode => test case body may be implemented at one PTC |

NR\_PDCP\_Proxy\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_Proxy\_Type** | | |
| **Comment** | proxy to route PDCP data between terminating PDCP entity and RLC bearer of another cell (group) | | |
| LinkToOtherNode | [RlcBearerRouting\_Type](#RlcBearerRouting_Type) |  | RAT/cellId to address the radio bearer terminating node (PDCP)  (None is not applicable) |

NR\_PDCP\_Configuration\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_Configuration\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | for SRB0 no PDCP is configured; furthermore the PDCP may not be configured e.g. for DRBs tested in RLC or MAC test cases |
| RBTerminating | [NR\_PDCP\_RBTerminating\_Type](#NR_PDCP_RBTerminating_Type) | PDCP entity at the terminating node: handling of PDCP protocol for the given bearer (normal or split beaerer) |
| Proxy | [NR\_PDCP\_Proxy\_Type](#NR_PDCP_Proxy_Type) | proxy to be configured above RLC instead of a normal PDCP entity when the RLC bearer is not in the same cell (group) as the terminating PDCP entity |

## D.6.3 NR\_PDCP\_DrbDefs

NR\_PDCP\_DrbDefs: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_PDCP\_SDU\_Type** | octetstring |  |
| **NR\_PDCP\_CtrlPduType\_Type** | [B3\_Type](#B3_Type) | PDU type according to TS 38.323 clause 6.3.8:  000 PDCP status report  001 Interspersed ROHC feedback  010 EHC feedback  011-111 Reserved |

NR\_PDCP\_SDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_PDCP\_SDUList\_Type** |
| **Comment** |  |
| record of [NR\_PDCP\_SDU\_Type](#NR_PDCP_SDU_Type) | |

NR\_PDCP\_DataPduSN12Bits\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_DataPduSN12Bits\_Type** | | |
| **Comment** | Data PDU for DRBs with 12 bits PDCP SN (TS 38.323, clause 6.2.2.2) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '1'B for Data PDU |
| Reserved | [B3\_Type](#B3_Type) |  | 3 bits reserved |
| SequenceNumber | [B12\_Type](#B12_Type) |  | 12 bits sequence number |
| SDU | [NR\_PDCP\_SDU\_Type](#NR_PDCP_SDU_Type) |  | content (octetstring) |
| MAC\_I | [B32\_Type](#B32_Type) | opt | message authentication code according to TS 38.323, clause 6.3.4;  MAC-I field is present only when the DRB is configured with integrity protection;  in this case it is up to TTCN to provide the valid MAC\_I in DL and to check it in UL |

NR\_PDCP\_DataPduSN18Bits\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_DataPduSN18Bits\_Type** | | |
| **Comment** | Data PDU for DRBs with 18 bits PDCP SN (TS 38.323, clause 6.2.2.3) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '1'B for Data PDU |
| Reserved | [B5\_Type](#B5_Type) |  | 5 bits reserved |
| SequenceNumber | [B18\_Type](#B18_Type) |  | 18 bits sequence number |
| SDU | [NR\_PDCP\_SDU\_Type](#NR_PDCP_SDU_Type) |  | content (octetstring) |
| MAC\_I | [B32\_Type](#B32_Type) | opt | message authentication code according to TS 38.323, clause 6.3.4;  MAC-I field is present only when the DRB is configured with integrity protection;  in this case it is up to TTCN to provide the valid MAC\_I in DL and to check it in UL |

NR\_PDCP\_CtrlPduStatus\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_CtrlPduStatus\_Type** | | |
| **Comment** | Control PDU for PDCP status report (TS 38.323, clause 6.2.3.1) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Ctrl PDU |
| PDU\_Type | [NR\_PDCP\_CtrlPduType\_Type](#NR_PDCP_CtrlPduType_Type) |  | 3 bits, '000'B for PDCP status report |
| Reserved | [B4\_Type](#B4_Type) |  | 4 bits reserved |
| FirstMissingCount | [B32\_Type](#B32_Type) |  | 32 bits, TS 38.323, clause 6.3.9 FMC |
| Bitmap | octetstring | opt | Bitmap according to TS 38.323, clause 6.3.10 |

NR\_PDCP\_CtrlPduRohcFeedback\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_CtrlPduRohcFeedback\_Type** | | |
| **Comment** | Control PDU for Interspersed ROHC feedback (TS 38.323, clause 6.2.3.2) | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Ctrl PDU |
| PDU\_Type | [NR\_PDCP\_CtrlPduType\_Type](#NR_PDCP_CtrlPduType_Type) |  | 3 bits, '001'B for Interspersed ROHC feedback |
| Reserved | [B4\_Type](#B4_Type) |  | 4 bits reserved |
| RohcFeedback | octetstring |  | ROHC packet that is not associated with a PDCP SDU |

NR\_PDCP\_CtrlPduEhcFeedbackCID7Bits\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_CtrlPduEhcFeedbackCID7Bits\_Type** | | |
| **Comment** |  | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Ctrl PDU |
| PDU\_Type | [NR\_PDCP\_CtrlPduType\_Type](#NR_PDCP_CtrlPduType_Type) |  | 3 bits, '101'B for EHC feedback |
| Reserved | [B4\_Type](#B4_Type) |  | 4 bits reserved |
| Reserved2 | [B1\_Type](#B1_Type) |  | 1 bit reserved |
| CID | [B7\_Type](#B7_Type) |  | 7 bits CID |

NR\_PDCP\_CtrlPduEhcFeedbackCID15Bits\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PDCP\_CtrlPduEhcFeedbackCID15Bits\_Type** | | |
| **Comment** |  | | |
| D\_C | [B1\_Type](#B1_Type) |  | 1 bit, '0'B for Ctrl PDU |
| PDU\_Type | [NR\_PDCP\_CtrlPduType\_Type](#NR_PDCP_CtrlPduType_Type) |  | 3 bits, '101'B for EHC feedback |
| Reserved | [B4\_Type](#B4_Type) |  | 4 bits reserved |
| Reserved2 | [B1\_Type](#B1_Type) |  | 1 bit reserved |
| CID | [B15\_Type](#B15_Type) |  | 15 bits CID |

NR\_PDCP\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PDCP\_PDU\_Type** | |
| **Comment** |  | |
| DataPduSN12Bits | [NR\_PDCP\_DataPduSN12Bits\_Type](#NR_PDCP_DataPduSN12Bits_Type) |  |
| DataPduSN18Bits | [NR\_PDCP\_DataPduSN18Bits\_Type](#NR_PDCP_DataPduSN18Bits_Type) |  |
| CtrlPduStatus | [NR\_PDCP\_CtrlPduStatus\_Type](#NR_PDCP_CtrlPduStatus_Type) |  |
| CtrlPduRohcFeedback | [NR\_PDCP\_CtrlPduRohcFeedback\_Type](#NR_PDCP_CtrlPduRohcFeedback_Type) |  |
| CtrlPduEhcFeedbackCID7Bits | [NR\_PDCP\_CtrlPduEhcFeedbackCID7Bits\_Type](#NR_PDCP_CtrlPduEhcFeedbackCID7Bits_Type) |  |
| CtrlPduEhcFeedbackCID15Bits | [NR\_PDCP\_CtrlPduEhcFeedbackCID15Bits\_Type](#NR_PDCP_CtrlPduEhcFeedbackCID15Bits_Type) |  |

NR\_PDCP\_PDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_PDCP\_PDUList\_Type** |
| **Comment** |  |
| record of [NR\_PDCP\_PDU\_Type](#NR_PDCP_PDU_Type) | |

# D.7 SDAP\_TypeDefs

## D.7.1 SDAP\_Configuration

SDAP\_Header\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **SDAP\_Header\_Type** |
| **Comment** |  |
| Present |  |
| Absent |  |

QFI\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **QFI\_List\_Type** |
| **Comment** |  |
| record of integer | |

SdapConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SdapConfig\_Type** | | |
| **Comment** |  | | |
| Pdu\_SessionId | integer |  |  |
| Sdap\_HeaderDL | [SDAP\_Header\_Type](#SDAP_Header_Type) | opt | mandatory for initial configuration; omit means "keep as it is"  when set to 'Present', unless specifically triggered otherwise, the SS shall set the RDI and RQI fields to 0 |
| Sdap\_HeaderUL | [SDAP\_Header\_Type](#SDAP_Header_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| MappedQoS\_Flows | [QFI\_List\_Type](#QFI_List_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

SdapTransparentMode\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SdapTransparentMode\_Type** | | |
| **Comment** |  | | |
| Sdap\_HeaderUL | [SDAP\_Header\_Type](#SDAP_Header_Type) |  | Indicates to the SS if the UE has been configured to include SDAP UL header |

SdapConfigInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SdapConfigInfo\_Type** | |
| **Comment** |  | |
| SdapConfig | [SdapConfig\_Type](#SdapConfig_Type) | SDAP configuration parameters for the DRB |
| TransparentMode | [SdapTransparentMode\_Type](#SdapTransparentMode_Type) | SDAP configuration for transparent (test) mode, used for SDAP tests:  SS does not add any SDAP headers in DL and does not remove any SDAP headers in UL |

SDAP\_Configuration\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SDAP\_Configuration\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| Config | [SdapConfigInfo\_Type](#SdapConfigInfo_Type) |  |

## D.7.2 SDAP\_DrbDefs

SDAP\_DrbDefs: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **SDAP\_SDU\_Type** | octetstring |  |

SDAP\_SDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **SDAP\_SDUList\_Type** |
| **Comment** |  |
| record of [SDAP\_SDU\_Type](#SDAP_SDU_Type) | |

SDAP\_DL\_PduHeader\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SDAP\_DL\_PduHeader\_Type** | | |
| **Comment** | TS 37.324 Figure 6.2.2.2-1 | | |
| RDI | [B1\_Type](#B1_Type) |  | TS 37.324 Figure 6.3.7: The RDI bit indicates whether QoS flow to DRB mapping rule should be updated  1 bit: '0'B No action  '1'B To store QoS flow to DRB mapping rule |
| RQI | [B1\_Type](#B1_Type) |  | TS 37.324 clause 6.3.6: The RQI bit indicates whether NAS should be informed of the updated of SDF to QoS flow mapping rules  1 bit: '0'B No action  '1'B To inform NAS that RQI bit is set to 1 |
| QFI | [B6\_Type](#B6_Type) |  | TS 37.324 clause 6.3.4: The QFI field indicates the ID of the QoS flow to which the SDAP SDU belongs |

SDAP\_UL\_PduHeader\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SDAP\_UL\_PduHeader\_Type** | | |
| **Comment** | TS 37.324 Figure 6.2.2.3-1 or 6.2.3-1 | | |
| DC | [B1\_Type](#B1_Type) |  | TS 37.324 clause 6.3.3: The D/C bit indicates whether the SDAP PDU is an SDAP Data PDU or an SDAP Control PDU  1 bit: '0'B Control PDU  '1'B Data PDU |
| R | [B1\_Type](#B1_Type) |  | TS 37.324 clause 6.3.5: Reserved. In this version of the specification reserved bits shall be set to 0. Reserved bits shall be ignored by the receiver |
| QFI | [B6\_Type](#B6_Type) |  | QFI (UL) or PQFI (SL)  TS 37.324 clause 6.3.4: The QFI field indicates the ID of the QoS flow to which the SDAP SDU belongs, or  TS 37.324 clause 6.3.8: The PQFI field indicates the ID of the PC5 QoS flow to which the SDAP PDU belongs |

SDAP\_PDU\_DL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SDAP\_PDU\_DL\_Type** | | |
| **Comment** | TS 37.324 clause 6.2.2 Data PDU | | |
| Header | [SDAP\_DL\_PduHeader\_Type](#SDAP_DL_PduHeader_Type) | opt | present for DL Data PDU with SDAP header (clause 6.2.2.2), omitted for Data PDU without SDAP header (clause 6.2.2.1) |
| Data | [SDAP\_SDU\_Type](#SDAP_SDU_Type) |  |  |

SDAP\_PDU\_UL\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SDAP\_PDU\_UL\_Type** | | |
| **Comment** | TS 37.324 clause 6.2.2 Data PDU or clause 6.2.3 End-Marker Control PDU | | |
| Header | [SDAP\_UL\_PduHeader\_Type](#SDAP_UL_PduHeader_Type) | opt | present for: UL Data PDU in default DRB or UL Data PDU with SDAP header in a non-default DRB (clause 6.2.2.3) or End-Marker Control PDU (clause 6.2.3); omitted for UL Data PDU without SDAP header in a non-default DRB (clause 6.2.2.1) |
| Data | [SDAP\_SDU\_Type](#SDAP_SDU_Type) | opt | present for UL Data PDU (clause 6.2.2.1 or 6.2.2.3), omitted for End-Marker Control PDU (clause 6.2.3) |

SDAP\_PDU\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SDAP\_PDU\_Type** | |
| **Comment** | TS 37.324 clause 6.2.2 Data PDU or 6.2.3 End-Marker Control PDU | |
| DL | [SDAP\_PDU\_DL\_Type](#SDAP_PDU_DL_Type) | Data PDU in DL |
| UL | [SDAP\_PDU\_UL\_Type](#SDAP_PDU_UL_Type) | Data PDU in UL or End-Marker Control PDU |

SDAP\_PDUList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **SDAP\_PDUList\_Type** |
| **Comment** |  |
| record of [SDAP\_PDU\_Type](#SDAP_PDU_Type) | |

# D.8 NR\_ASP\_VirtualNoiseDefs

ASP definitions for virtual noise generation in NR cells:  
- A VNG instance, upon creation, is always associated with an already configured NR cell. This VNG instance therefore operates on the same frequency as the associated NR cell's frequency.  
- A VNG instance generates AWGN (Additive white Gaussian noise):  
 - Frequency domain: on the whole carrier bandwidth defined for the frequency of the associated NR cell.  
 - Time domain: in every slot.  
- The AWGN power level is defined as an EPRE in dBm/SCS, corresponding to the 'Noc' value provided in the test case prose.

NR\_ASP\_VirtualNoiseDefs: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_VngConfigConfirm\_Type** | [Null\_Type](#Null_Type) |  |

NR\_VngConfigInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_VngConfigInfo\_Type** | |
| **Comment** |  | |
| CellNocLevel | integer | CellNocLevel - EPRE level in dBm/SCS for AWGN transmission to model a noise source.  The SS shall apply AWGN to the whole carrier bandwidth of the associated NR cell and in every slot |

NR\_VngConfigRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_VngConfigRequest\_Type** | |
| **Comment** | configure/activate noise for a given cell;  NOTE: it is assumed the associated NR cell has been created beforehand | |
| Configure | [NR\_VngConfigInfo\_Type](#NR_VngConfigInfo_Type) | configuration of the virtual noise generator;  regardless of the power level the noise generator is off before it gets activated for this cell;  in case the configuration needs to be changed during a test, the noise generator shall be deactivated for this cell |
| Activate | [Null\_Type](#Null_Type) | noise is activated (switched on) for the given cell acc. to the previous configuration;  while being active the configuration shall not be modified |
| Deactivate | [Null\_Type](#Null_Type) | deactivate noise for given cell |

NR\_VNG\_CTRL\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_VNG\_CTRL\_REQ** | | |
| **Comment** |  | | |
| Common | [NR\_ReqAspCommonPart\_Type](#NR_ReqAspCommonPart_Type) |  | CellId : as for the associated NR cell  RoutingInfo : None  RlcBearerRouting : None  MacBearerRouting : 'omit'  TimingInfo : Now  ControlInfo : CnfFlag:=true; FollowOnFlag:=false |
| Request | [NR\_VngConfigRequest\_Type](#NR_VngConfigRequest_Type) |  |  |

NR\_VNG\_CTRL\_CNF

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_VNG\_CTRL\_CNF** | | |
| **Comment** |  | | |
| Common | [NR\_CnfAspCommonPart\_Type](#NR_CnfAspCommonPart_Type) |  | TimingInfo is ignored by TTCN  => SS may set TimingInfo to "None" |
| Confirm | [NR\_VngConfigConfirm\_Type](#NR_VngConfigConfirm_Type) |  |  |

NR\_VNG\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_VNG\_PORT** | |
| **Comment** | NR BASE PTC: Port for virtual noise generator | |
| out | [NR\_VNG\_CTRL\_REQ](#NR_VNG_CTRL_REQ) |  |
| in | [NR\_VNG\_CTRL\_CNF](#NR_VNG_CTRL_CNF) |  |

# D.9 CommonDefs

CommonDefs: Constant Definitions

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Basic Types** | | | |
| **tsc\_UInt16Max** | integer | 65535 |  |
| **tsc\_UInt32Max** | integer | 4294967295 |  |

CommonDefs: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **B1\_Type** | bitstring length(1) |  |
| **B2\_Type** | bitstring length(2) |  |
| **B3\_Type** | bitstring length(3) |  |
| **B4\_Type** | bitstring length(4) |  |
| **B5\_Type** | bitstring length(5) |  |
| **B6\_Type** | bitstring length(6) |  |
| **B7\_Type** | bitstring length(7) |  |
| **B8\_Type** | bitstring length(8) |  |
| **B12\_Type** | bitstring length(12) |  |
| **B14\_Type** | bitstring length(14) |  |
| **B15\_Type** | bitstring length(15) |  |
| **B16\_Type** | bitstring length(16) |  |
| **B18\_Type** | bitstring length(18) |  |
| **B24\_Type** | bitstring length(24) |  |
| **B32\_Type** | bitstring length(32) |  |
| **B48\_Type** | bitstring length(48) |  |
| **B128\_Type** | bitstring length(128) |  |
| **B128\_Key\_Type** | [B128\_Type](#B128_Type) | 128 bit security key |
| **O1\_Type** | octetstring length(1) |  |
| **Null\_Type** | boolean (true) | dummy type for 'typeless' fields in unions |
| **UInt\_Type** | integer (0 .. infinity) |  |
| **UInt16\_Type** | integer (0 .. [tsc\_UInt16Max](#tsc_UInt16Max)) |  |
| **UInt32\_Type** | integer (0 .. [tsc\_UInt32Max](#tsc_UInt32Max)) |  |
| **IP\_DrbId\_Type** | integer | DRB identity type common for all RATs:  - for EUTRA it corresponds to the ASN.1 type DRB-Identity  - for UTRAN it corresponds to the ASN.1 type RB-Identity and values are as defined in TS 34.123-3 Table 8.2.4.1  - for GERAN the NSAPI value (type record NSAPI) may be used  NOTE: this is introduced to simplify the dependencies (i.e. to keep IP\_ASP\_TypeDefs independent from any RAT specific type definitions) |
| **PdcpCountValue\_Type** | [B32\_Type](#B32_Type) |  |
| **RNTI\_Value\_Type** | [UInt16\_Type](#UInt16_Type) | corresponds to NR ASN.1: RNTI-Value ::= INTEGER (0..65535) |
| **RNTI\_B16\_Type** | [B16\_Type](#B16_Type) |  |

B8\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **B8\_List\_Type** |
| **Comment** |  |
| record of [B8\_Type](#B8_Type) | |

IntegerList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **IntegerList\_Type** |
| **Comment** |  |
| record of integer | |

IndicationAndControlMode\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **IndicationAndControlMode\_Type** |
| **Comment** |  |
| enable |  |
| disable |  |

NR\_CellId\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_CellId\_Type** |
| **Comment** |  |
| nr\_Cell\_NonSpecific |  |
| nr\_Cell1 |  |
| nr\_Cell2 |  |
| nr\_Cell3 |  |
| nr\_Cell4 |  |
| nr\_Cell6 |  |
| nr\_Cell10 |  |
| nr\_Cell11 |  |
| nr\_Cell12 |  |
| nr\_Cell13 |  |
| nr\_Cell14 |  |
| nr\_Cell23 |  |
| nr\_Cell28 |  |
| nr\_Cell29 |  |
| nr\_Cell30 |  |
| nr\_Cell31 |  |

NR\_CellIdList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_CellIdList\_Type** |
| **Comment** | NOTE: there seems to be no need for any length restriction |
| record of [NR\_CellId\_Type](#NR_CellId_Type) | |

EUTRA\_CellId\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **EUTRA\_CellId\_Type** |
| **Comment** |  |
| eutra\_Cell\_NonSpecific |  |
| eutra\_Cell1 |  |
| eutra\_Cell2 |  |
| eutra\_Cell3 |  |
| eutra\_Cell4 |  |
| eutra\_Cell6 |  |
| eutra\_Cell10 |  |
| eutra\_Cell11 |  |
| eutra\_Cell12 |  |
| eutra\_Cell13 |  |
| eutra\_Cell14 |  |
| eutra\_Cell23 |  |
| eutra\_Cell28 |  |
| eutra\_Cell29 |  |
| eutra\_Cell30 |  |
| eutra\_Cell31 |  |
| eutra\_CellA |  |
| eutra\_CellB |  |
| eutra\_CellC |  |
| eutra\_CellD |  |
| eutra\_CellE |  |
| eutra\_CellG |  |
| eutra\_CellH |  |
| eutra\_CellI |  |
| eutra\_CellJ |  |
| eutra\_CellK |  |
| eutra\_CellL |  |
| eutra\_CellM |  |

UE\_NR\_DeltaValues\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **UE\_NR\_DeltaValues\_Type** | | |
| **Comment** |  | | |
| DeltaPrimaryBand | [DeltaValues\_Type](#DeltaValues_Type) |  |  |
| DeltaSecondaryBand | [DeltaValues\_Type](#DeltaValues_Type) |  |  |

DeltaValues\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **DeltaValues\_Type** | | |
| **Comment** | Delta value for each frequency, by default for FR1 or when the frequency is not available the Delta value is set to 0. | | |
| DeltaNRf1 | integer |  |  |
| DeltaNRf2 | integer |  |  |
| DeltaNRf3 | integer |  |  |
| DeltaNRf4 | integer |  |  |

IP\_EUTRA\_DrbInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_EUTRA\_DrbInfo\_Type** | | |
| **Comment** |  | | |
| CellId | [EUTRA\_CellId\_Type](#EUTRA_CellId_Type) |  | data is routed to a specific cell regardless of whether the same DRB is configured in any other cell |
| DrbId | [IP\_DrbId\_Type](#IP_DrbId_Type) | opt | mandatory at the system interface |

IP\_UTRAN\_GERAN\_DrbInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_UTRAN\_GERAN\_DrbInfo\_Type** | | |
| **Comment** |  | | |
| CellId | integer |  |  |
| DrbId | [IP\_DrbId\_Type](#IP_DrbId_Type) | opt | mandatory at the system interface |

IP\_WLAN\_DrbInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_WLAN\_DrbInfo\_Type** | | |
| **Comment** |  | | |
| CellId | integer |  |  |

IP\_ePDG\_IPsecTunnelInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_ePDG\_IPsecTunnelInfo\_Type** | | |
| **Comment** |  | | |
| PdnId | [PDN\_Index\_Type](#PDN_Index_Type) |  | 'index name' of PDN associated to the IPsec tunnel, e.g. for SS to distinguish routing of IP packets in case of more than one IPsec tunnel  NOTE: In general only 'ePDG\_XXX' values shall be used |

QosFlow\_Identification\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **QosFlow\_Identification\_Type** | | |
| **Comment** |  | | |
| PDU\_SessionId | integer |  | TS 24.007 clause 11.2.3.1b |
| QFI | integer |  | TS 24.501 Table 11.2.3.1c.1 |

IP\_NR\_QosFlowInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_NR\_QosFlowInfo\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  | data is routed to a specific cell regardless of whether the same DRB is configured in any other cell |
| QosFlow | [QosFlow\_Identification\_Type](#QosFlow_Identification_Type) | opt | mandatory at the system interface |

IP\_EUTRA\_QosFlowInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_EUTRA\_QosFlowInfo\_Type** | | |
| **Comment** |  | | |
| CellId | [EUTRA\_CellId\_Type](#EUTRA_CellId_Type) |  | data is routed to a specific cell regardless of whether the same DRB is configured in any other cell |
| QosFlow | [QosFlow\_Identification\_Type](#QosFlow_Identification_Type) | opt | mandatory at the system interface |

IP\_NR\_DrbInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IP\_NR\_DrbInfo\_Type** | | |
| **Comment** |  | | |
| CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  |  |
| DrbId | [IP\_DrbId\_Type](#IP_DrbId_Type) | opt | mandatory at the system interface |

IP\_DrbInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IP\_DrbInfo\_Type** | |
| **Comment** |  | |
| Eutra | [IP\_EUTRA\_DrbInfo\_Type](#IP_EUTRA_DrbInfo_Type) |  |
| Eutra5GC | [IP\_EUTRA\_QosFlowInfo\_Type](#IP_EUTRA_QosFlowInfo_Type) | used when SDAP is configured in non-transparent mode at the SS |
| Utran | [IP\_UTRAN\_GERAN\_DrbInfo\_Type](#IP_UTRAN_GERAN_DrbInfo_Type) |  |
| Geran | [IP\_UTRAN\_GERAN\_DrbInfo\_Type](#IP_UTRAN_GERAN_DrbInfo_Type) |  |
| Nr5GC | [IP\_NR\_QosFlowInfo\_Type](#IP_NR_QosFlowInfo_Type) | used when SDAP is configured in non-transparent mode at the SS |
| NrEPC | [IP\_NR\_DrbInfo\_Type](#IP_NR_DrbInfo_Type) | used when NR is connected to EPC (S1-U interface) or when SDAP is configured in transparent mode at the SS |
| Wlan | [IP\_WLAN\_DrbInfo\_Type](#IP_WLAN_DrbInfo_Type) |  |
| IPsecTunnel | [IP\_ePDG\_IPsecTunnelInfo\_Type](#IP_ePDG_IPsecTunnelInfo_Type) |  |

PDN\_Index\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **PDN\_Index\_Type** |
| **Comment** | 'index name' associated to a PDN:  The major purpose is to associate a PDN specific set of IP addresses to the given PDN (e.g. UE addresses, P-CSCF address etc.);  in general there are one or two PDNs configured at the same time and - from TTCN point of view - the IMS PDN is considered to be the first one;  a second PDN may be configured in case of emergency call or e.g. for XCAP signalling;  the 'internet PDN' (according to TS 36.508 clause 4.5.2) is considered as (optional) second PDN during initial registration and gets released after initial registration;  in case of WLAN a separate group of index names is used to distinguish the different configuration of the emulated IP network |
| PDN\_1 | "default" PDN being kept connected to during a test case (in case of LTE in general the IMS PDN) |
| PDN\_2 | second PDN: during initial registration (TS 36.508 clause 4.5.2) for LTE and "multiple PDN' this is the internet PDN;  after initial registration it is used if needed according to the test purpose (e.g. emergency call) |
| PDN\_2a | used for the special case when the UE IP address of the second PDN changes in a test case |
| PDN\_Internet | mainly used as alias for PDN2 during initial registration |
| ePDG\_IMS1 | WLAN: PDN for 'normal' IMS |
| ePDG\_IMS2 | WLAN: PDN for emergency IMS (in general) |
| ePDG\_XCAP | WLAN: PDN for XCAP in case of XCAP server being part of 3GPP-network  NOTE: In contrast to LTE for WLAN there is a different IP architecture to be consider by TTCN for XCAP and IMS emergency |
| ePDG\_Internet | place-holder for WLAN-offload scenarios |
| nrPDN\_Internet | mainly used as alias during initial registration in ENDC |
| PDN\_3 | used in ENDC and 5GC for the third PDN |
| PDN\_4 | used in 5GC for the URLLC PDN |
| PDN\_5 | used in 5GC for the MIoT PDN |
| PDN\_6 | used in 5GC for the V2X PDN |

# D.10 CommonAspDefs

## D.10.1 Cell\_Configuration\_Common

CellTimingInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **CellTimingInfo\_Type** | | |
| **Comment** | Cell Timing | | |
| TcOffset | integer (0..63) | opt | For NR according to TS 38.211 clause 4.1 Ts/Tc = 64 with Tc = 1/(480000 \* 4096) and Ts = 1/(15000 \* 2048) as for EUTRA;  => for NR to specify granularity per Tc; for EUTRA to be set to 0 (and/or to be ignored by the SS) |
| Tcell | integer (0..307199) |  | frame duration Tf = 307200 \* Ts = 10ms; System Time Unit Ts = 1/(15000 \* 2048) |
| SfnOffset | integer (0..1023) |  |  |
| HsfnOffset | integer (0..1023) |  |  |

## D.10.2 MAC\_Layer

ULGrant\_Period\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ULGrant\_Period\_Type** | |
| **Comment** |  | |
| OnlyOnce | [Null\_Type](#Null_Type) | grant is sent out only once; no period |
| Duration | integer (1..infinity) | duration of the grant period in number of sub-frames (1ms) for EUTRA and number of slots for NR |

TransmissionRepetition\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TransmissionRepetition\_Type** | |
| **Comment** |  | |
| Continuous | [Null\_Type](#Null_Type) |  |
| NumOfCycles | integer (1..infinity) |  |

PeriodicGrant\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **PeriodicGrant\_Type** | | |
| **Comment** |  | | |
| Period | [ULGrant\_Period\_Type](#ULGrant_Period_Type) |  | time period after which UL Grant need to be automatically transmitted or 'OnlyOnce' |
| NoOfRepetitions | [TransmissionRepetition\_Type](#TransmissionRepetition_Type) |  | number of UL Grant repetitions to be automatically transmitted or continuous repetition |

UL\_GrantConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **UL\_GrantConfig\_Type** | |
| **Comment** |  | |
| OnSR\_Reception | [Null\_Type](#Null_Type) | SS transmits UL Grant as configured by DciInfoUL\_Type at every reception of SR;  to be used in non L2 Test |
| Periodic | [PeriodicGrant\_Type](#PeriodicGrant_Type) | SS transmits UL Grant as configured by DciInfoUL\_Type periodically;  to be used in L2 tests;  MAC tests testing Grants might set the period as infinite and num grant as 1 |
| PeriodicOnSR\_Reception | [PeriodicGrant\_Type](#PeriodicGrant_Type) | SS transmits UL Grant as configured by DciInfoUL\_Type periodically; the periodic grant transmission  is started/restarted on reception of a SR from UE  to be used in non L2 Test to enable large UL data transmission for lower category UEs (Cat<=1) |
| None | [Null\_Type](#Null_Type) | disable any grant transmission |

RAR\_RapIdCtrl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **RAR\_RapIdCtrl\_Type** | |
| **Comment** |  | |
| Automatic | [Null\_Type](#Null_Type) | SS shall automatically use same RAPID as received from the UE |
| Unmatched | [Null\_Type](#Null_Type) | SS shall use RAPID being different from preamble sent by the UE;  SS shall calculate this RAPID acc. to RAPID := (RAPID + 3..63) mod 64  if single RAR is transmitted in a MAC PDU then only 3 is added  if multiple RAR's are transmitted in MAC PDU, then for first unmatched RAR 3 is added, second unmatched 4 is added, third unmatched 5 is added and so on |

## D.10.3 System\_Indications

HARQ\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **HARQ\_Type** |
| **Comment** | ack represents HARQ ACK; nack represents HARQ NACK |
| ack |  |
| nack |  |

## D.10.4 ASP\_CommonPart

Definition of ASP common parts for REQ-, CNF- and IND-ASPs

### D.10.4.1 ASP\_CommonPart\_Definitions

#### D.10.4.1.1 Routing\_Info

CommonAspDefs: Constant Definitions

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Basic Types** | | | |
| **tsc\_SRB0** | integer | 0 |  |
| **tsc\_SRB1** | integer | 1 |  |
| **tsc\_SRB2** | integer | 2 |  |
| **tsc\_SRB3** | integer | 3 |  |
| **tsc\_SRB4** | integer | 4 |  |

Routing\_Info: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **SRB\_Identity\_Type** | integer ([tsc\_SRB0](#tsc_SRB0), [tsc\_SRB1](#tsc_SRB1), [tsc\_SRB2](#tsc_SRB2), [tsc\_SRB3](#tsc_SRB3), [tsc\_SRB4](#tsc_SRB4)) |  |

RlcBearerRouting\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **RlcBearerRouting\_Type** | |
| **Comment** | data routing e.g. in case of split bearer (split DRB or split SRB);  applicable for multi-RAT Dual Connectivity (MR-DC) as well as single-RAT Dual Connectivity | |
| EUTRA | [EUTRA\_CellId\_Type](#EUTRA_CellId_Type) |  |
| NR | [NR\_CellId\_Type](#NR_CellId_Type) |  |
| None | [Null\_Type](#Null_Type) | normal case: PDCP and RLC are configured at the same cell |

#### D.10.4.1.2 Timing\_Info

Timing\_Info: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **SystemFrameNumber\_Type** | integer (0..1023) |  |
| **SubFrameNumber\_Type** | integer (0..9) |  |
| **HyperSystemFrameNumberInfo\_Type** | [SystemFrameNumberInfo\_Type](#SystemFrameNumberInfo_Type) |  |

SubFrameInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SubFrameInfo\_Type** | |
| **Comment** |  | |
| Number | [SubFrameNumber\_Type](#SubFrameNumber_Type) |  |
| Any | [Null\_Type](#Null_Type) | no specific sub-frame, in which case the SS may choose the next available subframe (valid for REQ ASPs only) |

SystemFrameNumberInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SystemFrameNumberInfo\_Type** | |
| **Comment** |  | |
| Number | [SystemFrameNumber\_Type](#SystemFrameNumber_Type) |  |
| Any | [Null\_Type](#Null_Type) | no specific frame number, in which case the SS may choose the next available SFN (valid for REQ ASPs only) |

SlotOffset\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SlotOffset\_Type** | |
| **Comment** | slots per subframe according to TS 38.211 Table 4.3.2-1 | |
| Numerology0 | [Null\_Type](#Null_Type) | mu=0; only one slot per subframe |
| Numerology1 | integer (0..1) | mu=1; 2 slots per subframe |
| Numerology2 | integer (0..3) | mu=2; 4 slots per subframe |
| Numerology3 | integer (0..7) | mu=3; 8 slots per subframe |
| Numerology4 | integer (0..15) | mu=4; 16 slots per subframe |

SlotTimingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **SlotTimingInfo\_Type** | |
| **Comment** | EUTRA, NBIOT:  REQ ASPs: TTCN shall set the SlotTimingInfo to "FirstSlot" for EUTRA, NBIOT addressing the whole subframe  IND ASPs: TTCN shall ignore the SlotTimingInfo sent by the SS for EUTRA, NBIOT  NR:  REQ ASPs: Any:=true only if the slot number is not relevant,  in which case the SS may choose the next available slot of the given subframe  IND ASPs: Any:=true only if there is no slot information available for the particular kind of indication | |
| SlotOffset | [SlotOffset\_Type](#SlotOffset_Type) | to address a particular slot in a subframe |
| FirstSlot | [Null\_Type](#Null_Type) | to address the first slot independent from the numerology (REQ ASPs only) or for REQ ASPs in EUTRA and NBIOT |
| Any | [Null\_Type](#Null_Type) | for IND ASPs in EUTRA and NBIOT or if slot number is not relevant or not available |

SubFrameTiming\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **SubFrameTiming\_Type** | | |
| **Comment** |  | | |
| SFN | [SystemFrameNumberInfo\_Type](#SystemFrameNumberInfo_Type) |  |  |
| Subframe | [SubFrameInfo\_Type](#SubFrameInfo_Type) |  |  |
| HSFN | [HyperSystemFrameNumberInfo\_Type](#HyperSystemFrameNumberInfo_Type) |  |  |
| Slot | [SlotTimingInfo\_Type](#SlotTimingInfo_Type) |  |  |

TimingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **TimingInfo\_Type** | |
| **Comment** |  | |
| SubFrame | [SubFrameTiming\_Type](#SubFrameTiming_Type) |  |
| Now | [Null\_Type](#Null_Type) | to be used in REQ ASPs when there is no 'activation time' |
| None | [Null\_Type](#Null_Type) | only to be used in SYSTEM\_CTRL\_CNF or NR\_SYSTEM\_CTRL\_CNF but not for EnquireTiming |

### D.10.4.2 REQ\_ASP\_CommonPart

ReqAspControlInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **ReqAspControlInfo\_Type** | | |
| **Comment** |  | | |
| CnfFlag | boolean |  | true => SS shall send CNF:  when the REQ is with no timing information (no activation time), SS shall send the confirmation when the configuration is done, i.e. when the test case may continue.  Example:  when there is a configuration followed by a send event it shall not be necessary to have a wait timer in between but the CNF triggers the send event.  If there are other triggers e.g. like the UE sending a message, CnfFlag shall be set to false by the test case to avoid racing conditions with the CNF and the signalling message.  When there is an activation time SS shall send the CNF after the configuration has been scheduled;  that means SS shall not wait until the activation time has been expired.  When FollowOnFlag is true, CnfFlag shall be set to false. |
| FollowOnFlag | boolean |  | false => no further (related) information  true: further related information will be sent to SS (semantics depending on respective ASP) |

### D.10.4.3 CNF\_ASP\_CommonPart

ConfirmationResult\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **ConfirmationResult\_Type** | |
| **Comment** |  | |
| Success | [Null\_Type](#Null_Type) |  |
| Error | integer | may contain SS specific error code; this will not be evaluated by TTCN |

### D.10.4.4 IND\_ASP\_CommonPart

IntegrityErrorIndication\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **IntegrityErrorIndication\_Type** | | |
| **Comment** |  | | |
| Nas | boolean |  | NAS Integrity: set to true when received MAC does not match calculated MAC |
| Pdcp | boolean |  | PDCP Integrity: set to true when received MAC does not match calculated MAC |

ErrorIndication\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **ErrorIndication\_Type** | | |
| **Comment** |  | | |
| Integrity | [IntegrityErrorIndication\_Type](#IntegrityErrorIndication_Type) |  | Integrity error: received MAC does not match calculated MAC |
| System | integer |  | any other error: may be SS specific error code; this will not be evaluated by TTCN;  e.g. an error shall be raised when the UE requests retransmission of an RLC PDU |

IndicationStatus\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **IndicationStatus\_Type** | |
| **Comment** |  | |
| Ok | [Null\_Type](#Null_Type) |  |
| Error | [ErrorIndication\_Type](#ErrorIndication_Type) |  |

# D.11 NR\_SideLink\_ASP\_TypeDefs

## D.11.1 NR\_SL\_CommonPart

NR\_SideLink\_ASP\_TypeDefs: Constant Definitions

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Basic Types** | | | |
| **tsc\_SL\_SRB0** | integer | 0 |  |
| **tsc\_SL\_SRB1** | integer | 1 |  |
| **tsc\_SL\_SRB2** | integer | 2 |  |
| **tsc\_SL\_SRB3** | integer | 3 |  |

NR\_SL\_CommonPart: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_SRB\_Identity\_Type** | integer ([tsc\_SL\_SRB0](#tsc_SL_SRB0), [tsc\_SL\_SRB1](#tsc_SL_SRB1), [tsc\_SL\_SRB2](#tsc_SL_SRB2), [tsc\_SL\_SRB3](#tsc_SL_SRB3)) |  |

NR\_SL\_ReqAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_ReqAspCommonPart\_Type** | | |
| **Comment** |  | | |
| SS\_UE\_Id | [SS\_UE\_Id\_Type](#SS_UE_Id_Type) |  |  |
| RoutingInfo | [NR\_SL\_RoutingInfo\_Type](#NR_SL_RoutingInfo_Type) |  |  |
| TimingInfo | [NR\_SL\_TimingInfo\_Type](#NR_SL_TimingInfo_Type) |  |  |
| ControlInfo | [ReqAspControlInfo\_Type](#ReqAspControlInfo_Type) |  |  |

NR\_SL\_CnfAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_CnfAspCommonPart\_Type** | | |
| **Comment** |  | | |
| SS\_UE\_Id | [SS\_UE\_Id\_Type](#SS_UE_Id_Type) |  |  |
| RoutingInfo | [NR\_SL\_RoutingInfo\_Type](#NR_SL_RoutingInfo_Type) |  |  |
| TimingInfo | [NR\_SL\_TimingInfo\_Type](#NR_SL_TimingInfo_Type) |  |  |
| Result | [NR\_SL\_SystemConfirm\_Type](#NR_SL_SystemConfirm_Type) |  |  |

NR\_SL\_IndAspCommonPart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_IndAspCommonPart\_Type** | | |
| **Comment** |  | | |
| SS\_UE\_Id | [SS\_UE\_Id\_Type](#SS_UE_Id_Type) |  |  |
| RoutingInfo | [NR\_SL\_RoutingInfo\_Type](#NR_SL_RoutingInfo_Type) |  |  |
| TimingInfo | [NR\_SL\_TimingInfo\_Type](#NR_SL_TimingInfo_Type) |  |  |
| Layer2Id | [NR\_SL\_Layer2Ids\_Type](#NR_SL_Layer2Ids_Type) |  | Source and Destination Layer-2 ids received together with the data |
| Status | [IndicationStatus\_Type](#IndicationStatus_Type) |  |  |

NR\_SL\_Layer2Ids\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_Layer2Ids\_Type** | | |
| **Comment** |  | | |
| SourceLaye2Id | [B24\_Type](#B24_Type) |  |  |
| DestinationLaye2Id | [B24\_Type](#B24_Type) |  |  |

NR\_SL\_TimingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_TimingInfo\_Type** | |
| **Comment** |  | |
| DirectSubFrame | [DirectSubFrameTiming\_Type](#DirectSubFrameTiming_Type) |  |
| Now | [Null\_Type](#Null_Type) | to be used in REQ ASPs when there is no 'activation time' |
| None | [Null\_Type](#Null_Type) | to be used in CNF ASPs but not for EnquireTiming |

DirectSubFrameTiming\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **DirectSubFrameTiming\_Type** | | |
| **Comment** |  | | |
| DFN | [SystemFrameNumberInfo\_Type](#SystemFrameNumberInfo_Type) |  |  |
| Subframe | [SubFrameInfo\_Type](#SubFrameInfo_Type) |  |  |
| Slot | [SlotTimingInfo\_Type](#SlotTimingInfo_Type) |  |  |

NR\_SL\_RoutingInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_RoutingInfo\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| RadioBearerId | [NR\_SL\_RadioBearerId\_Type](#NR_SL_RadioBearerId_Type) |  |
| SL\_QosFlow | [NR\_SL\_QosFlow\_Identification\_Type](#NR_SL_QosFlow_Identification_Type) | routing of data with SDAP being configured in non-transparent mode at the NR-SS-UE |

NR\_SL\_RadioBearerId\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_RadioBearerId\_Type** | |
| **Comment** | Transparent mode FFS | |
| SL\_Srb | [NR\_SL\_SRB\_Identity\_Type](#NR_SL_SRB_Identity_Type) | routing for SL-SRB 0-3 for unicast |
| SL\_Drb | integer | routing for SL-DRBs |

NR\_SL\_QosFlow\_Identification\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_QosFlow\_Identification\_Type** | | |
| **Comment** |  | | |
| SdapId | integer |  |  |
| PQFI | integer | opt | Optional for broadcast and groupcast - Mandatory for unicast |

## D.11.2 NR\_SidelinkUE\_Configuration

### D.11.2.1 NR\_SL\_System\_Configuration

NR\_SL\_SystemRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SystemRequest\_Type** | |
| **Comment** |  | |
| SS\_UE\_Config | [NR\_SL\_ConfigRequest\_Type](#NR_SL_ConfigRequest_Type) | Configure/release a NR-SS-UE |
| EnquireTiming | [Null\_Type](#Null_Type) | Get DFN/subframe/slot number for this NR-SS-UE |
| SystemIndCtrl | [NR\_SL\_System\_IndicationControl\_Type](#NR_SL_System_IndicationControl_Type) | Configure SS to generate system indications |
| RadioBearerList | [NR\_SL\_RadioBearerList\_Type](#NR_SL_RadioBearerList_Type) | Configure/release one or several SL-SRBs and/or SL-DRB |
| SL\_Security | [NR\_SL\_Security\_Type](#NR_SL_Security_Type) | Start/Restart/Release of SLRB security - Applicable for unicast only |
| PdcpCount | [NR\_SL\_PDCP\_CountReq\_Type](#NR_SL_PDCP_CountReq_Type) | Set or enquire PDCP COUNT for one or more SL-RBs |
| SciTrigger | [NR\_SL\_SCI\_Trigger\_Type](#NR_SL_SCI_Trigger_Type) | To trigger a specific SCI format 1-A and SCI format 2-A or 2-B to be transmitted respectively on PSCCH and PSSCH |

NR\_SL\_SystemConfirm\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SystemConfirm\_Type** | |
| **Comment** | Confirmations for NR\_SL\_SYSTEM\_CTRL\_REQ system configuration;  in general to be sent after the configuration has been done | |
| SS\_UE\_Config | [Null\_Type](#Null_Type) | Confirmation for NR-SS-UE configuration |
| EnquireTiming | [Null\_Type](#Null_Type) | Confirmation for EnquireTiming |
| SystemIndCtrl | [Null\_Type](#Null_Type) | Confirmation for SystemIndCtrl |
| RadioBearerList | [Null\_Type](#Null_Type) | Confirmation for SystemIndCtrl |
| SL\_Security | [Null\_Type](#Null_Type) | (no further parameters from NR-SS-UE) |
| PdcpCount | [NR\_SL\_PDCP\_CountCnf\_Type](#NR_SL_PDCP_CountCnf_Type) | as response to 'Get' a list is returned containing COUNT information for the requested SL-RBs |
| SciTrigger | [Null\_Type](#Null_Type) | Confirmation for SystemIndCtrl |

NR\_SL\_SystemIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SystemIndication\_Type** | |
| **Comment** |  | |
| Error | charstring | indicates an error situation in NR-SS-UE;  is not explicitly handled in TTCN but causes an INCONC due to default behaviour;  an additional error code can be signalled in the common part of the ASP;  SS shall raise an error in case of  - Invalid TimingInfo  - Invalid data scheduling  (NOTE: additional cases may occur) |
| SyncRefReporting | [NR\_SL\_SyncRefReporting\_Type](#NR_SL_SyncRefReporting_Type) | Indication for S-SS/MasterInformationBlockSidelink sent by UE |
| PSSCH\_SciReporting | [NR\_SL\_PSSCH\_SciReporting\_Type](#NR_SL_PSSCH_SciReporting_Type) | Indication for reception of SCI format 2-A or SCI format 2-B sent by UE |
| MAC\_CE | [NR\_SL\_MAC\_ControlElement\_Type](#NR_SL_MAC_ControlElement_Type) | Indication for reception of MAC control element sent by UE |

### D.11.2.2 NR\_SL\_SS\_UE\_Config

NR\_SL\_SS\_UE\_Config: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_SCS\_SpecificCarrierList\_Type** | SL\_FreqConfigCommon\_r16.sl\_SCS\_SpecificCarrierList\_r16 |  |
| **NR\_FrequencyShift7p5khzSL\_Type** | SL\_FreqConfigCommon\_r16.frequencyShift7p5khzSL\_r16 |  |
| **NR\_ValueN\_Type** | SL\_FreqConfigCommon\_r16.valueN\_r16 |  |
| **NR\_SL\_PSCCH\_Config\_Type** | SL\_ResourcePool\_r16.sl\_PSCCH\_Config\_r16 |  |
| **NR\_SL\_PSSCH\_Config\_Type** | SL\_ResourcePool\_r16.sl\_PSSCH\_Config\_r16 |  |
| **NR\_SL\_PSFCH\_Config\_Type** | SL\_ResourcePool\_r16.sl\_PSFCH\_Config\_r16 |  |
| **NR\_SL\_SubchannelSize\_Type** | SL\_ResourcePool\_r16.sl\_SubchannelSize\_r16 |  |
| **NR\_SL\_StartRB\_Subchannel\_Type** | SL\_ResourcePool\_r16.sl\_StartRB\_Subchannel\_r16 |  |
| **NR\_SL\_NumSubchannel\_Type** | SL\_ResourcePool\_r16.sl\_NumSubchannel\_r16 |  |
| **NR\_SL\_Additional\_MCS\_Table\_Type** | SL\_ResourcePool\_r16.sl\_Additional\_MCS\_Table\_r16 |  |
| **NR\_SL\_PTRS\_Config\_Type** | SL\_ResourcePool\_r16.sl\_PTRS\_Config\_r16 |  |
| **NR\_SL\_RB\_Number\_Type** | SL\_ResourcePool\_r16.sl\_RB\_Number\_r16 |  |
| **NR\_SL\_TimeResource\_Type** | SL\_ResourcePool\_r16.sl\_TimeResource\_r16 |  |
| **NR\_SL\_X\_Overhead\_Type** | SL\_ResourcePool\_r16.sl\_X\_Overhead\_r16 |  |
| **NR\_SL\_MaxNumPerReserve\_Type** | SL\_UE\_SelectedConfigRP\_r16.sl\_MaxNumPerReserve\_r16 |  |
| **NR\_SL\_MultiReserveResource\_Type** | SL\_UE\_SelectedConfigRP\_r16.sl\_MultiReserveResource\_r16 |  |
| **NR\_SL\_ResourceReservePeriodList\_Type** | SL\_UE\_SelectedConfigRP\_r16.sl\_ResourceReservePeriodList\_r16 |  |
| **NR\_ASN1\_SL\_LatencyBoundCSI\_Report\_Type** | RRCReconfigurationSidelink\_IEs\_r16.sl\_LatencyBoundCSI\_Report\_r16 |  |
| **NR\_SidelinkChannelPower\_Type** | integer | see TS 38.213, clause 16.2 |
| **SL\_SSId\_Type** | SL\_SyncConfig\_r16.sl\_SSID\_r16 |  |

NR\_SL\_ConfigRequest\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_ConfigRequest\_Type** | |
| **Comment** |  | |
| AddOrReconfigure | [NR\_SL\_ConfigInfo\_Type](#NR_SL_ConfigInfo_Type) | For one NR-SS-UE configuration:  SS\_UE\_Id : identifier of the NR-SS-UE to be configured  RoutingInfo : None  TimingInfo : 'Now' for initial configuration; specific TimingInfo may be used for reconfiguration  ControlInfo : FollowOnFlag:=false |
| Release | [Null\_Type](#Null_Type) | To remove all NR-SS-UEs completely  SS\_UE\_Id : ss\_UE\_NonSpecific  RoutingInfo : None  TimingInfo : Now  ControlInfo : FollowOnFlag:=false |

NR\_SL\_ConfigInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_ConfigInfo\_Type** | | |
| **Comment** |  | | |
| TimingSyncSource | [NR\_SynchronisationTiming\_Type](#NR_SynchronisationTiming_Type) | opt | Mandatory at initial NR-SS-UE configuration |
| Power | [NR\_SS\_UE\_Power\_Type](#NR_SS_UE_Power_Type) | opt | Reference power for the RS of each antenna in Tx  Initially configured as switched OFF |
| SL\_BWP\_PoolConfigList | [NR\_SL\_BWP\_PoolConfigList\_Type](#NR_SL_BWP_PoolConfigList_Type) | opt | Mandatory at initial NR-SS-UE configuration. In release 16 only one entry can be configured |

NR\_SS\_UE\_Power\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SS\_UE\_Power\_Type** | | |
| **Comment** |  | | |
| MaxReferencePower | [NR\_AbsoluteCellPower\_Type](#NR_AbsoluteCellPower_Type) | opt | Maximum value of NR-SS-UE reference power (in dBm/15kHz as per TS 38.508-1 clause 6.2.1.3 )  NR-SS-UE is initialised with this reference power;  its value can't be reconfigured during test execution, attenuation is used to change NR-SS-UE power level  its value is the upper bound of the NR-SS-UE power during the test case |
| Attenuation | [NR\_Attenuation\_Type](#NR_Attenuation_Type) |  | Initial attenuation: Off |

NR\_SL\_BWP\_PoolConfigList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_BWP\_PoolConfigList\_Type** |
| **Comment** |  |
| record of [NR\_SL\_BWP\_PoolConfig\_Type](#NR_SL_BWP_PoolConfig_Type) | |

NR\_SL\_BWP\_PoolConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_BWP\_PoolConfig\_Type** | | |
| **Comment** |  | | |
| SL\_FrequencyInfo | [NR\_SL\_Frequency\_Type](#NR_SL_Frequency_Type) | opt | mandatory at first configuration |
| SL\_BWP\_ConfigList | [NR\_SL\_BWP\_ConfigList\_Type](#NR_SL_BWP_ConfigList_Type) | opt | mandatory at first configuration |
| SyncConfig | [NR\_SL\_SyncConfig\_Type](#NR_SL_SyncConfig_Type) | opt | mandatory at first configuration |

NR\_SL\_Frequency\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_Frequency\_Type** | | |
| **Comment** |  | | |
| Band | integer | opt |  |
| SL\_SCS\_SpecificCarrierList | [NR\_SL\_SCS\_SpecificCarrierList\_Type](#NR_SL_SCS_SpecificCarrierList_Type) | opt |  |
| SL\_AbsoluteFrequencyPointA | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |
| SL\_AbsoluteFrequencySSB | [NR\_ASN1\_ARFCN\_ValueNR\_Type](#NR_ASN1_ARFCN_ValueNR_Type) | opt |  |
| FrequencyShift7p5khzSL | [NR\_FrequencyShift7p5khzSL\_Type](#NR_FrequencyShift7p5khzSL_Type) | opt | As per TS 38.101-1 clause 5.4E.2.1 |
| ValueN | [NR\_ValueN\_Type](#NR_ValueN_Type) | opt |  |

NR\_SL\_BWP\_ConfigList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_BWP\_ConfigList\_Type** |
| **Comment** |  |
| record of [NR\_SL\_BWP\_Config\_Type](#NR_SL_BWP_Config_Type) | |

NR\_SL\_BWP\_Config\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_BWP\_Config\_Type** | | |
| **Comment** |  | | |
| SL\_BWP\_Id | BWP\_Id |  |  |
| ActiveBwp | boolean | opt | Indicates to NR-SS-UE which BWP is currently used - only one active at a time |
| SL\_PreconfigGeneral | [NR\_ASN1\_SL\_PreconfigGeneral](#NR_ASN1_SL_PreconfigGeneral) | opt | mandatory at first configuration |
| SL\_BWP\_Generic | [NR\_ASN1\_SL\_BWP\_Generic\_Type](#NR_ASN1_SL_BWP_Generic_Type) | opt | mandatory at first configuration |
| SL\_RxPool | [NR\_SL\_RxPoolConfig\_Type](#NR_SL_RxPoolConfig_Type) | opt |  |
| SL\_TxPool | [NR\_SL\_TxPoolConfig\_Type](#NR_SL_TxPoolConfig_Type) | opt |  |

NR\_ASN1\_SL\_PreconfigGeneral

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_ASN1\_SL\_PreconfigGeneral** | | |
| **Comment** |  | | |
| R16 | SL\_PreconfigGeneral\_r16 |  |  |

NR\_SL\_RxPoolConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RxPoolConfig\_Type** | | |
| **Comment** |  | | |
| SL\_ResourcePool | [NR\_SL\_ResourcePool\_Type](#NR_SL_ResourcePool_Type) | opt |  |
| SL\_CSI\_RS | [NR\_SL\_CSI\_RS\_ConfigRx\_Type](#NR_SL_CSI_RS_ConfigRx_Type) | opt | Configuration for sidelink CSI reception |

NR\_SL\_TxPoolConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_TxPoolConfig\_Type** | | |
| **Comment** |  | | |
| SL\_ResourcePool | [NR\_SL\_ResourcePool\_Type](#NR_SL_ResourcePool_Type) | opt |  |
| SL\_SCI | [NR\_SL\_SCI\_Tx\_Type](#NR_SL_SCI_Tx_Type) | opt |  |
| RelativePscchPsschTxPower | [NR\_SL\_RelativeTxPower\_Type](#NR_SL_RelativeTxPower_Type) | opt |  |
| SL\_CSI\_RS | [NR\_SL\_CSI\_RS\_ConfigTx\_Type](#NR_SL_CSI_RS_ConfigTx_Type) | opt | Configuration for sidelink CSI transmission |

NR\_ASN1\_SL\_BWP\_Generic\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_ASN1\_SL\_BWP\_Generic\_Type** | |
| **Comment** |  | |
| R16 | SL\_BWP\_Generic\_r16 |  |

NR\_ASN1\_SL\_PSSCH\_TxParameters\_r16

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_ASN1\_SL\_PSSCH\_TxParameters\_r16** | | |
| **Comment** |  | | |
| R16 | SL\_PSSCH\_TxParameters\_r16 |  |  |

NR\_SL\_ResourcePool\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_ResourcePool\_Type** | | |
| **Comment** |  | | |
| SL\_PSCCH\_Config | [NR\_SL\_PSCCH\_Config\_Type](#NR_SL_PSCCH_Config_Type) | opt |  |
| SL\_PSSCH\_Config | [NR\_SL\_PSSCH\_Config\_Type](#NR_SL_PSSCH_Config_Type) | opt |  |
| SL\_PSSCH\_TxParameters | [NR\_ASN1\_SL\_PSSCH\_TxParameters\_r16](#NR_ASN1_SL_PSSCH_TxParameters_r16) | opt | In reception: set according to UE applied transmission parameters. In transmission: set to the NR-SS-UE transmission parameters to be selected acc to TS 38.321 clause 5.22.1.1 |
| SL\_PSFCH\_Config | [NR\_SL\_PSFCH\_Config\_Type](#NR_SL_PSFCH_Config_Type) | opt |  |
| SL\_SubchannelSize | [NR\_SL\_SubchannelSize\_Type](#NR_SL_SubchannelSize_Type) | opt |  |
| SL\_StartRB\_Subchannel | [NR\_SL\_StartRB\_Subchannel\_Type](#NR_SL_StartRB_Subchannel_Type) | opt |  |
| SL\_NumSubchannel | [NR\_SL\_NumSubchannel\_Type](#NR_SL_NumSubchannel_Type) | opt |  |
| SL\_Additional\_MCS\_Table | [NR\_SL\_Additional\_MCS\_Table\_Type](#NR_SL_Additional_MCS_Table_Type) | opt |  |
| SL\_PTRS\_Config | [NR\_SL\_PTRS\_Config\_Type](#NR_SL_PTRS_Config_Type) | opt |  |
| SL\_MultiReserveResource | [NR\_SL\_MultiReserveResource\_Type](#NR_SL_MultiReserveResource_Type) | opt |  |
| SL\_MaxNumPerReserve | [NR\_SL\_MaxNumPerReserve\_Type](#NR_SL_MaxNumPerReserve_Type) | opt |  |
| SL\_ResourceReservePeriodList | [NR\_SL\_ResourceReservePeriodList\_Type](#NR_SL_ResourceReservePeriodList_Type) | opt |  |
| SL\_RB\_Number | [NR\_SL\_RB\_Number\_Type](#NR_SL_RB_Number_Type) | opt |  |
| SL\_TimeResource | [NR\_SL\_TimeResource\_Type](#NR_SL_TimeResource_Type) | opt |  |
| SL\_X\_Overhead | [NR\_SL\_X\_Overhead\_Type](#NR_SL_X_Overhead_Type) | opt |  |

NR\_SL\_SCI\_Tx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SCI\_Tx\_Type** | | |
| **Comment** |  | | |
| PSCCH\_Sci | [NR\_SL\_PSCCH\_Sci\_Tx\_Type](#NR_SL_PSCCH_Sci_Tx_Type) | opt | 1st-stage SCI formats |
| PSSCH\_Sci | [NR\_SL\_PSSCH\_Sci\_Tx\_Type](#NR_SL_PSSCH_Sci_Tx_Type) | opt | 2nd-stage SCI formats |

NR\_SL\_PSCCH\_Sci\_Tx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PSCCH\_Sci\_Tx\_Type** | |
| **Comment** |  | |
| SciFormat1A | [NR\_SL\_SciFormat1A\_Type](#NR_SL_SciFormat1A_Type) | Acc to TS 38.212 cl 8.3.1.1 SCI format 1-A |

NR\_SL\_ResourceReservationPeriod\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_ResourceReservationPeriod\_Type** | |
| **Comment** | TS 38.212 clause 8.3.1.1 | |
| None | [Null\_Type](#Null_Type) | 0 bit no Resource reservation period, if higher layer parameter sl-MultiReserveResource is not configured |
| Value | integer | number of bits depending on the number of entries in the higher layer parameter sl-ResourceReservePeriodList |

NR\_SL\_AdditionalMCS\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_AdditionalMCS\_Type** | |
| **Comment** | TS 38.212 clause 8.3.1.1 Additional MCS table indicator | |
| None | [Null\_Type](#Null_Type) | 0 bit if 2 bits if two MCS tables is not configured by higher layer parameter sl- Additional-MCS-Table |
| Value | integer | as defined in clause 8.1.3.1 of TS 38.214: 1 bit if one MCS table is configured by higher layer parameter sl-Additional-MCS-Table; 2 bits if two MCS tables are configured by higher layer parameter sl- Additional-MCS-Table |

NR\_SL\_PSFCH\_OverheadIndication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PSFCH\_OverheadIndication\_Type** | |
| **Comment** | TS 38.212 cl 8.3.1.1 PSFCH overhead indication | |
| None | [Null\_Type](#Null_Type) | 0 bit if sl-PSFCH-Period different from 2 and 4 |
| Value | integer | 1 bit as defined clause 8.1.3.2 of TS 38.214 if higher layer parameter sl-PSFCH-Period = 2 or 4 |
| Automatic | [Null\_Type](#Null_Type) | 1 bit as defined in TS 38.214 clause 8.1.3.2. Applicable when PSFCH is configured in the resource pool. Value set automatically by NR-SS-UE according to TS 38.214 clause 8.1.3.2 and TS 38.213 clause 16.3. |

NR\_SL\_FreqRessourceAssignment\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_FreqRessourceAssignment\_Type** | | |
| **Comment** | TS 38.214 clause 8.1.5  The SS shall automatically do the resource assignment needed for a transmission | | |
| FirstSubchannel | integer |  | The starting sub-channel index of the first resource |
| MaxSubchannels | integer |  | maximum number of sub-channels to be used |

NR\_SL\_SciFormat1A\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SciFormat1A\_Type** | | |
| **Comment** | Acc to TS 38.212 cl 8.3.1.1 SCI format 1-A  For all fields: 'omit' means that the information shall not be contained in the SCI | | |
| Priority | [B3\_Type](#B3_Type) | opt | Priority - 3 bits as specified in clause 5.4.3.3 of [12, TS 23.287] and clause 5.22.1.3.1 of [8, TS 38.321] |
| FreqRessourceAssignment | [NR\_SL\_FreqRessourceAssignment\_Type](#NR_SL_FreqRessourceAssignment_Type) | opt | Frequency resource assignment - Number of bits depending on sl-MaxNumPerReserve |
| TimeResourceAssignment | integer | opt | Time resource assignment |
| ResourceReservationPeriod | [NR\_SL\_ResourceReservationPeriod\_Type](#NR_SL_ResourceReservationPeriod_Type) | opt | Resource reservation period - present if higher layer parameter sl-MultiReserveResource is configured; 0 bit otherwise. |
| Dmrs\_Pattern | integer | opt | DMRS pattern |
| SecondStageSCI\_Format | [B2\_Type](#B2_Type) | opt | 2nd-stage SCI format - 2 bits as defined in Table 8.3.1.1-1. |
| Beta\_offset | [B2\_Type](#B2_Type) | opt | Beta\_offset indicator - 2 bits as provided by higher layer parameter sl-BetaOffsets2ndSCI and Table 8.3.1.1-2. |
| NumberDMRS\_Port | [B1\_Type](#B1_Type) | opt | Number of DMRS port - 1bit as defined in Table 8.3.1.1-3. |
| AdditionalMCS | [NR\_SL\_AdditionalMCS\_Type](#NR_SL_AdditionalMCS_Type) | opt | Additional MCS table indicator |
| PSFCH\_OverheadIndication | [NR\_SL\_PSFCH\_OverheadIndication\_Type](#NR_SL_PSFCH_OverheadIndication_Type) | opt | PSFCH overhead indication |

NR\_SL\_PSSCH\_Sci\_Tx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PSSCH\_Sci\_Tx\_Type** | |
| **Comment** |  | |
| SciFormat2A | [NR\_SL\_SciFormat2A\_Type](#NR_SL_SciFormat2A_Type) | Acc to TS 38.212 cl 8.4.1.1 SCI format 2-A |
| SciFormat2B | [NR\_SL\_SciFormat2B\_Type](#NR_SL_SciFormat2B_Type) | Acc to TS 38.212 cl 8.4.1.2 SCI format 2-B |

NR\_SL\_SciFormat2A\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SciFormat2A\_Type** | | |
| **Comment** | Acc to TS 38.212 cl 8.4.1.1 SCI format 2-A  Source ID and Destination ID provided in NR\_SL\_MAC\_LogicalChannelConfig\_Type | | |
| HarqProcessConfig | [NR\_HarqProcessConfig\_Type](#NR_HarqProcessConfig_Type) | opt | configures which HARQ processes the NR-SS-UE may use; corresponds to HARQ process number - 4 bits.  Acc to TS 38.321 clause 5.22.1.3.1: The maximum number of transmitting Sidelink processes associated with the Sidelink HARQ Entity is 16. |
| ToggleNDI | boolean | opt | for NR-SS-UE configured in Tx else NA  "true" for transmission of a new transport block, "false" for a re-transmission;  Not present for automatic mode: the NDI (New data indicator) itself is maintained by the NR-SS-UE and therefore not provided as configuration parameter |
| RedundancyVersionList | [NR\_RedundancyVersionList\_Type](#NR_RedundancyVersionList_Type) | opt | Redundancy version - 2 bits as defined in TS 38.212 Table 7.3.1.1.1-2.  list of Redundancy versions to be used for DL transmission and possible retransmissions;  if there are not enough elements to achieve successful DL transmission, SS shall raise an error |
| HarqFeedback | [B1\_Type](#B1_Type) | opt | HARQ feedback enabled/disabled indicator - 1 bit as defined in TS 38.213 clause 16.3 |
| CastType | [B2\_Type](#B2_Type) | opt | Cast type indicator - 2 bits as defined in TS 38.212 Table 8.4.1.1-1 and in TS 38.214 clause 8.1 |
| CSI\_Request | [B1\_Type](#B1_Type) | opt | CSI request - 1 bit as defined in TS 38.214 cl 8.2.1 and 8.1. |

NR\_SL\_SciFormat2B\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SciFormat2B\_Type** | | |
| **Comment** | Ac to TS 38.212 clause 8.4.1.2 SCI format 2-B  Source ID and Destination ID provided in NR\_SL\_MAC\_LogicalChannelConfig\_Type | | |
| HarqProcessConfig | [NR\_HarqProcessConfig\_Type](#NR_HarqProcessConfig_Type) | opt | configures which HARQ processes the NR-SS-UE may use; corresponds to HARQ process number - 4 bits.  Acc to TS 38.321 clause 5.22.1.3.1: The maximum number of transmitting Sidelink processes associated with the Sidelink HARQ Entity is 16. |
| ToggleNDI | boolean | opt | for NR-SS-UE configured in Tx else NA  "true" for transmission of a new transport block, "false" for a re-transmission;  Not present for automatic mode: the NDI (New data indicator) itself is maintained by the NR-SS-UE and therefore not provided as configuration parameter |
| RedundancyVersionList | [NR\_RedundancyVersionList\_Type](#NR_RedundancyVersionList_Type) | opt | Redundancy version - 2 bits as defined in TS 38.212 Table 7.3.1.1.1-2.  list of Redundancy versions to be used for DL transmission and possible retransmissions;  if there are not enough elements to achieve successful DL transmission, SS shall raise an error |
| HarqFeedback | [B1\_Type](#B1_Type) | opt | HARQ feedback enabled/disabled indicator - 1 bit as defined in TS 38.213 clause 16.3 |
| ZoneID | [B12\_Type](#B12_Type) | opt | Zone ID - 12 bits as defined in clause 5.8.11 of TS 38.331. |
| CommunicationRangeReq | [B4\_Type](#B4_Type) | opt | Communication range requirement - 4 bits determined by higher layer parameter sl-ZoneConfigMCR-Index |

NR\_SL\_RelativeTxPower\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RelativeTxPower\_Type** | | |
| **Comment** | Power allocation for OFDM symbols and reference signals - TS 38.508-1 Table 6.2.1.3-1 | | |
| SssbRelativeTxPower | [NR\_SL\_SSSB\_EPREs\_Type](#NR_SL_SSSB_EPREs_Type) | opt |  |
| PscchRelativeTxPower | [NR\_SL\_PSCCH\_EPREs\_Type](#NR_SL_PSCCH_EPREs_Type) | opt |  |
| PsschRelativeTxPower | [NR\_SL\_PSSCH\_EPREs\_Type](#NR_SL_PSSCH_EPREs_Type) | opt |  |
| SlCsiRsRelativeTxPower | [NR\_SL\_CSIRS\_EPREs\_Type](#NR_SL_CSIRS_EPREs_Type) | opt |  |

NR\_SL\_SSSB\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SSSB\_EPREs\_Type** | | |
| **Comment** |  | | |
| SsssToNRSSUE | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of S-SSS to EPRE of NR-SS-UE |
| SpssToSsss | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of S-PSS to S-SSS |
| PsbchDmrsToSsss | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSBCH DMRS to S-SSS |
| PsbchToPsbchDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSBCH to PSBCH DMRS |

NR\_SL\_PSCCH\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_PSCCH\_EPREs\_Type** | | |
| **Comment** |  | | |
| PscchToNRSSUE | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSCCH DMRS to EPRE or NR-SS-UE |
| PscchToDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSCCH to PSCCH DMRS |

NR\_SL\_PSSCH\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_PSSCH\_EPREs\_Type** | | |
| **Comment** |  | | |
| PsschToNRSSUE | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSSCH DMRS to EPRE of NR-SS-UE |
| PsschToDmrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSSCH to PSSCH DMRS |
| PsschTpPtrs | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of SL PT-RS to PSSCH |
| PsfchToPssch | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) | opt | EPRE ratio of PSFCH to PSSCH |

NR\_SL\_CSIRS\_EPREs\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_CSIRS\_EPREs\_Type** | | |
| **Comment** |  | | |
| SlSciRsToNRSSUE | [NR\_EPRE\_Ratio\_Type](#NR_EPRE_Ratio_Type) |  | EPRE ratio of SL CSI-RS to EPRE of NR-SS-UE |

NR\_SL\_CSI\_RS\_ConfigRx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_CSI\_RS\_ConfigRx\_Type** | |
| **Comment** | NR-SS-UE configured for reception of CSI-RS signal, CSI report trigger in SCI format 2-A and for transmission of sidelink CSI report. | |
| AddOrReconfigure | [NR\_SL\_CSI\_RS\_ConfigParamRx\_Type](#NR_SL_CSI_RS_ConfigParamRx_Type) | Add/re-configure SL-CSI reception |
| Release | [Null\_Type](#Null_Type) | Stop transmission or reception |
| None | [Null\_Type](#Null_Type) |  |

NR\_SL\_CSI\_RS\_ConfigParamRx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_CSI\_RS\_ConfigParamRx\_Type** | | |
| **Comment** | According to TS 38.321 clause 5.22.1.7 and TS 38.214 clause 8.5.  The MAC CE containing sidelink CSI Report (SidelinkCSI\_Reporting) shall be transmitted by NR-SS-UE after reception of SCI format 2-A with CSI request set to '1'B.  The Sidelink CSI report shall be transmitted at LatencyBoundCSI\_Report slots after reception of the SCI format 2-A. | | |
| CSI\_RS\_Config | [NR\_ASN1\_SL\_CSI\_RS\_Config](#NR_ASN1_SL_CSI_RS_Config) |  |  |
| LatencyBoundCSI\_Report | [NR\_ASN1\_SL\_LatencyBoundCSI\_Report\_Type](#NR_ASN1_SL_LatencyBoundCSI_Report_Type) |  | Offset between the SCI format 2-A with CSI request set to '1'B and the transmitted sidelink CSI report provided in SidelinkCSI\_Reporting |
| SidelinkCSI\_Reporting | [NR\_SL\_MAC\_CE\_SidelinkCSI\_Reporting\_Type](#NR_SL_MAC_CE_SidelinkCSI_Reporting_Type) |  | Sidelink CSI report to be transmitted by NR-SS-UE - TS 38.321 clause 6.1.3.35 |

NR\_SL\_CSI\_RS\_ConfigTx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_CSI\_RS\_ConfigTx\_Type** | |
| **Comment** |  | |
| AddOrReconfigure | [NR\_SL\_CSI\_RS\_ConfigParamTx\_Type](#NR_SL_CSI_RS_ConfigParamTx_Type) | Add/re-configure sidelink CSI for transmission |
| Release | [Null\_Type](#Null_Type) | Stop transmission or reception |
| None | [Null\_Type](#Null_Type) |  |

NR\_SL\_CSI\_RS\_ConfigParamTx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_CSI\_RS\_ConfigParamTx\_Type** | | |
| **Comment** | According to TS 38.214 clause 8.5.2.2. CSI-RS shall be transmitted when SCI format 2-A with SCI request set to '1' is transmitted.  SlCsiRsRelativeTxPower shall be provided in NR\_SL\_SSSB\_EPREs\_Type. | | |
| SL\_CSI\_RS\_Config | [NR\_ASN1\_SL\_CSI\_RS\_Config](#NR_ASN1_SL_CSI_RS_Config) |  |  |

NR\_ASN1\_SL\_CSI\_RS\_Config

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_ASN1\_SL\_CSI\_RS\_Config** | | |
| **Comment** |  | | |
| R16 | SL\_CSI\_RS\_Config\_r16 |  |  |

NR\_SynchronisationTiming\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SynchronisationTiming\_Type** | |
| **Comment** | To configure/reconfigure NR-SS-UE with the timing for synchronisation | |
| InCoverage | [NR\_InCoverageConfig\_Type](#NR_InCoverageConfig_Type) | To configure NR-SS-UE to synchronise on NR Cell |
| UTC\_GNSS\_Synchronised | [NR\_UTC\_SynchronisedConfig\_Type](#NR_UTC_SynchronisedConfig_Type) | To configure NR-SS-UE to synchronise on UTC of a GNSS signal |
| OutOfCoverageTiming | [NR\_OutOfCoverageTiming\_Type](#NR_OutOfCoverageTiming_Type) | To configure NR-SS-UE out of coverage - no synchronisation source |
| SyncRefUE | [Null\_Type](#Null_Type) | NR-SS-UE synchronises using UE under test - NR-SS-UE configured in SyncConfigRxMode |

NR\_InCoverageConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_InCoverageConfig\_Type** | | |
| **Comment** |  | | |
| NR\_CellId | [NR\_CellId\_Type](#NR_CellId_Type) |  | NR cell Identity on which NR-SS-UE shall synchronise |

NR\_UTC\_SynchronisedConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_UTC\_SynchronisedConfig\_Type** | | |
| **Comment** | NR-SS-UE selects GNSS as the synchronization reference source - As per TS 38.331 clause 5.8.12 | | |
| SL\_OffsetDFN | integer |  |  |

NR\_OutOfCoverageTiming\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_OutOfCoverageTiming\_Type** | | |
| **Comment** |  | | |
| TcOffset | integer (0..63) | opt | For NR according to TS 38.211 clause 4.1 Ts/Tc = 64 with Tc = 1/(480000 \* 4096) and Ts = 1/(15000 \* 2048); |
| Tcell | integer (0..307199) | opt | Frame duration Tf = 307200 \* Ts = 10ms; System Time Unit Ts = 1/(15000 \* 2048) |
| DfnOffset | integer (0..1023) | opt |  |

NR\_SL\_SyncConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SyncConfig\_Type** | | |
| **Comment** | To configure NR-SS-UE for SLSS and MasterInformationBlockSidelink transmission/reception | | |
| SyncConfigTxMode | [NR\_SL\_SyncConfigTxModeList\_Type](#NR_SL_SyncConfigTxModeList_Type) | opt | A list needed in case one NR-SS-UE is configured to transmit different PSBCH |
| SyncConfigRxMode | [NR\_SL\_SyncConfigRxMode\_Type](#NR_SL_SyncConfigRxMode_Type) | opt |  |

NR\_SL\_SyncConfigTxModeList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_SyncConfigTxModeList\_Type** |
| **Comment** |  |
| record of [NR\_SL\_SyncConfigTxMode\_Type](#NR_SL_SyncConfigTxMode_Type) | |

NR\_SL\_SyncConfigTxMode\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SyncConfigTxMode\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | NR-SS-UE not configured for S-SS/PSBCH transmission - Used only for initial configuration when no transmission is required |
| SyncConfigTx | [NR\_SL\_SyncConfigTx\_Type](#NR_SL_SyncConfigTx_Type) |  |

NR\_SL\_SyncConfigTx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SyncConfigTx\_Type** | |
| **Comment** | To configure/reconfigure NR-SS-UE to start or stop transmitting SLSS and MasterInformationBlockSidelink | |
| AddOrReconfigure | [NR\_SL\_SyncTx\_Type](#NR_SL_SyncTx_Type) | Add/re-configure S-SS/PSBCH |
| Release | [Null\_Type](#Null_Type) | Stop transmission |

NR\_SL\_SyncTx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SyncTx\_Type** | | |
| **Comment** | To configure NR-SS-UE to transmit Reference signal, S-SS and MasterInformationBlockSidelink acc to TS 38.211 clause 8.4, TS 38.212 clause 8.1, TS 38.213 clause 8.4.3.1.  Acc to TS 38.213 cl 16.1 S-PSS symbol, a S-SSS symbol, and a PSBCH symbol have a same transmission power  NR-SS-UE is configured in transmission mode with the associated SL\_TxPool | | |
| TxSyncConfig | [NR\_TxSyncRefParam\_Type](#NR_TxSyncRefParam_Type) | opt |  |
| SL\_TDD\_Configuration | TDD\_UL\_DL\_ConfigCommon | opt | Corresponding SL-ResourcePool-r16.sl-RxParametersNcell-r16.sl-TDD-Configuration-r16 |
| Spss | [NR\_SidelinkPrimarySyncSignal\_Type](#NR_SidelinkPrimarySyncSignal_Type) | opt | SL primary synchronization signals (S-PSS) |
| Ssss | [NR\_SidelinkSecondarySyncSignal\_Type](#NR_SidelinkSecondarySyncSignal_Type) | opt | SL secondary synchronization signals (S-SSS) |
| Psbch | [NR\_PsbchConfig\_Type](#NR_PsbchConfig_Type) | opt | PSBCH blocks |

NR\_TxSyncRefParam\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_TxSyncRefParam\_Type** | | |
| **Comment** |  | | |
| SL\_SSID | SL\_SyncConfig\_r16.sl\_SSID\_r16 |  |  |
| MasterInformationBlockSidelink | MasterInformationBlockSidelink | opt | directFrameNumber and slotIndex set to a dummy value - to be set by NR-SS-UE  MasterInformationBlockSidelink using fixed periodicity (16ms) to TS 38.213 clause 16.1;  The position of S-SS/PSBCH blocks in frequency and time domain is specified in TS 38.211 clause 8.4.3 and TS 38.213 clause 16.1.  The SS configuration for S-SS/PSBCH blocks is defined by SL\_SSB\_TimeAllocation\_r16 and NR\_SL\_Frequency\_Type |
| SL\_SSB\_TimeAllocation | SL\_SSB\_TimeAllocation\_r16 | opt |  |

NR\_SidelinkPrimarySyncSignal\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SidelinkPrimarySyncSignal\_Type** | | |
| **Comment** |  | | |
| RelativeTxPower | [NR\_SidelinkChannelPower\_Type](#NR_SidelinkChannelPower_Type) | opt | Power for S-PSS relative to the NR-SS-UE power level - value in dB |

NR\_SidelinkSecondarySyncSignal\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SidelinkSecondarySyncSignal\_Type** | | |
| **Comment** |  | | |
| RelativeTxPower | [NR\_SidelinkChannelPower\_Type](#NR_SidelinkChannelPower_Type) | opt | Power for S-SSS relative to the NR-SS-UE power level - value in dB |

NR\_PsbchConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_PsbchConfig\_Type** | | |
| **Comment** |  | | |
| RelativeTxPower | [NR\_SidelinkChannelPower\_Type](#NR_SidelinkChannelPower_Type) | opt | Power for PSBCH relative to the NR-SS-UE power level - value in dB |

NR\_SL\_SyncConfigRxMode\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SyncConfigRxMode\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | NR-SS-UE not configured for S-SS/PSBCH reception - Used only for initial configuration when no reception is required |
| SyncConfigRx | [NR\_SL\_SyncConfigRx\_Type](#NR_SL_SyncConfigRx_Type) |  |

NR\_SL\_SyncConfigRx\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SyncConfigRx\_Type** | |
| **Comment** | to configure/reconfigure NR-SS-UE to start or stop receiving S-SS/PSBCH - FFS is a list is needed | |
| AddOrReconfigure | [NR\_SL\_SyncRx\_Type](#NR_SL_SyncRx_Type) | Add/re-configure reception of SLSSID |
| Release | [Null\_Type](#Null_Type) | Stop SLSS and SBCCH reception |

NR\_SL\_SyncRx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SyncRx\_Type** | | |
| **Comment** | To configure NR-SS-UE for reception of S-SS/PSBCH with one or two synchronisation SSB Time allocation sources. | | |
| SL\_SSID | [NR\_SL\_SSID\_Type](#NR_SL_SSID_Type) | opt |  |
| SL\_SSB\_TimeAllocation | [NR\_SL\_SSB\_TimeAllocation\_Type](#NR_SL_SSB_TimeAllocation_Type) | opt | List of the SSB\_TimeAllocation to be used by UE |

NR\_SL\_SSB\_TimeAllocation\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SSB\_TimeAllocation\_Type** | |
| **Comment** |  | |
| SL\_SSB\_TimeAllocationList | [NR\_SL\_SSB\_TimeAllocationList\_Type](#NR_SL_SSB_TimeAllocationList_Type) | List of the SSB\_TimeAllocation to be used by UE |
| AnyValue | [Null\_Type](#Null_Type) | Any value is expected |

NR\_SL\_SSB\_TimeAllocationList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_SSB\_TimeAllocationList\_Type** |
| **Comment** |  |
| record length(1..2) of SL\_SSB\_TimeAllocation\_r16 | |

NR\_SL\_SSID\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SSID\_Type** | |
| **Comment** |  | |
| SL\_SSId\_Value | [SL\_SSId\_Type](#SL_SSId_Type) | As per TS 38.211 clause 8.4.2.1 |
| AnyValue | [Null\_Type](#Null_Type) | Any value is expected |

NR\_SL\_System\_IndicationControl\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_System\_IndicationControl\_Type** | |
| **Comment** | Initially all indications are disabled in NR-SS-UE  (i.e. it shall not be necessary in 'normal' test cases to use this primitive but only if a specific indication is needed);  omit means indication mode is not changed.  TimingInfo : 'Now' (in general) | |
| SyncRefReporting | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | To enable/disable reporting of start and stop of reception of NR sidelink S-SS/PSBCH.  NOTE:  this is applicable when NR-SS-UE is configured with SyncConfigRx  SS reports an indication every time when SLSSID/MasterInformationBlockSidelink reception from UE has toggled in the subframes configured for SLSS/MasterInformationBlockSidelink reception |
| PSSCH\_SciReporting | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | To enable/disable reporting of reception of NR PSSCH SCI-2A or SCI-2B  NOTE:  SS reports an indication every time an SCI format 2-A or SCI format 2-B is received |
| SidelinkCSIReportingMAC\_CE | [IndicationAndControlMode\_Type](#IndicationAndControlMode_Type) | To enable/disable reporting of Sidelink CSI Reporting MAC CE received from UE |

### D.11.2.3 NR\_SL\_RadioBearerConfig

#### D.11.2.3.1 NR\_SL\_RadioBearerConfigGeneric

NR\_SL\_RadioBearerConfigInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RadioBearerConfigInfo\_Type** | | |
| **Comment** |  | | |
| Sdap | [NR\_SL\_SDAP\_Configuration\_Type](#NR_SL_SDAP_Configuration_Type) | opt | mandatory for initial configuration; omit means "keep as it is"  for SL-SRBs: Sdap.None:=true |
| Pdcp | [NR\_SL\_PDCP\_Configuration\_Type](#NR_SL_PDCP_Configuration_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| RlcBearer | [NR\_SL\_RlcBearerConfig\_Type](#NR_SL_RlcBearerConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

NR\_SL\_RadioBearerConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_RadioBearerConfig\_Type** | |
| **Comment** |  | |
| AddOrReconfigure | [NR\_SL\_RadioBearerConfigInfo\_Type](#NR_SL_RadioBearerConfigInfo_Type) | add / re-configure SL-RB |
| Release | [Null\_Type](#Null_Type) | release SL-RB |

NR\_SL\_RadioBearer\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RadioBearer\_Type** | | |
| **Comment** |  | | |
| Id | [NR\_SL\_RadioBearerId\_Type](#NR_SL_RadioBearerId_Type) |  |  |
| Config | [NR\_SL\_RadioBearerConfig\_Type](#NR_SL_RadioBearerConfig_Type) |  |  |

NR\_SL\_RadioBearerList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_RadioBearerList\_Type** |
| **Comment** | array of SL-SRBs and/or SL-DRBs.  TimingInfo: 'Now' in general;  activation time may be used in special case for release and/or reconfiguration of one or several SL-RBs;  the following rules shall be considered:  - release/Reconfiguration of an SL-RB shall not be scheduled earlier than 5ms after a previous data transmission on this SL-RB  - subsequent release and reconfiguration(s) shall be scheduled with an interval of at least 5ms  - a subsequent data transmission on an SL-RB shall not be scheduled earlier than 5ms after the last reconfiguration of the SL-RB  the configuration shall be performed exactly at the given time  ControlInfo : FollowOnFlag:=false |
| record of [NR\_SL\_RadioBearer\_Type](#NR_SL_RadioBearer_Type) | |

#### D.11.2.3.2 SDAP\_Configuration

SDAP\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_SDAP\_Header\_Type** | SL\_SDAP\_Config\_r16.sl\_SDAP\_Header\_r16 |  |

PQFI\_List\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **PQFI\_List\_Type** |
| **Comment** |  |
| record of integer | |

NR\_SL\_SdapConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SdapConfig\_Type** | | |
| **Comment** |  | | |
| SdapId | integer |  | Sdap identity used in NR-SS-UE as route identity the SL-DRB and route data |
| Sdap\_Header | [NR\_SL\_SDAP\_Header\_Type](#NR_SL_SDAP_Header_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| MappedQoS\_Flows | [PQFI\_List\_Type](#PQFI_List_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

NR\_SL\_SdapTransparentMode\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SdapTransparentMode\_Type** | | |
| **Comment** |  | | |
| Sdap\_Header | [NR\_SL\_SDAP\_Header\_Type](#NR_SL_SDAP_Header_Type) |  | Indicates to the SS if the UE has been configured to include SDAP header |

NR\_SL\_SdapConfigInfo\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SdapConfigInfo\_Type** | |
| **Comment** |  | |
| SdapConfig | [NR\_SL\_SdapConfig\_Type](#NR_SL_SdapConfig_Type) | SDAP configuration parameters for the SL-DRB |
| TransparentMode | [NR\_SL\_SdapTransparentMode\_Type](#NR_SL_SdapTransparentMode_Type) | SDAP configuration for transparent (test) mode, used for SDAP tests:  SS does not add any SDAP headers in DL and does not remove any SDAP headers in UL |

NR\_SL\_SDAP\_Configuration\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SDAP\_Configuration\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| Config | [NR\_SL\_SdapConfigInfo\_Type](#NR_SL_SdapConfigInfo_Type) |  |

#### D.11.2.3.3 PDCP\_Configuration

PDCP\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_PDCP\_SN\_Size\_Type** | SL\_PDCP\_Config\_r16.sl\_PDCP\_SN\_Size\_r16 |  |
| **NR\_SL\_PDCP\_SDU\_Type** | [B3\_Type](#B3_Type) | Acc to TS 38.323 cl 6.3.12 |

NR\_CastType\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_CastType\_Type** |
| **Comment** |  |
| broadcast |  |
| groupcast |  |
| unicast |  |

NR\_SL\_PDCP\_DRB\_Config\_Parameters\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_PDCP\_DRB\_Config\_Parameters\_Type** | | |
| **Comment** | parameters corresponding to NR ASN.1 SL-PDCP-Config | | |
| SN\_Size | [NR\_SL\_PDCP\_SN\_Size\_Type](#NR_SL_PDCP_SN_Size_Type) |  | SL-PDCP-Config.sl-PDCP-SN-Size-r16 |
| PDCP\_SDU\_Data | [NR\_SL\_PDCP\_SDU\_Type](#NR_SL_PDCP_SDU_Type) | opt | Only applicable to SL-DRB  Corresponds to the V2X data type: IP/non-IP |
| CastType | [NR\_CastType\_Type](#NR_CastType_Type) | opt | Only applicable to SL-DRB |

NR\_SL\_PDCP\_TransparentMode

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_PDCP\_TransparentMode** | | |
| **Comment** |  | | |
| SN\_Size | [NR\_SL\_PDCP\_SN\_Size\_Type](#NR_SL_PDCP_SN_Size_Type) |  |  |

NR\_SL\_PDCP\_RbConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PDCP\_RbConfig\_Type** | |
| **Comment** |  | |
| Params | [NR\_SL\_PDCP\_DRB\_Config\_Parameters\_Type](#NR_SL_PDCP_DRB_Config_Parameters_Type) | PDCP configuration parameters corresponding to UE configuration |
| TransparentMode | [NR\_SL\_PDCP\_TransparentMode](#NR_SL_PDCP_TransparentMode) | PDCP configuration for transparent (test) mode: FFS |

NR\_SL\_PDCP\_Configuration\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PDCP\_Configuration\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | the PDCP may not be configured e.g. for SL-DRBs tested in RLC or MAC test cases |
| SLRB | [NR\_SL\_PDCP\_RbConfig\_Type](#NR_SL_PDCP_RbConfig_Type) |  |

#### D.11.2.3.4 RLC\_Configuration

RLC\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_UM\_RLC\_Type** | SL\_RLC\_Config\_r16.sl\_UM\_RLC\_r16 |  |
| **NR\_SL\_AM\_RLC\_Type** | SL\_RLC\_Config\_r16.sl\_AM\_RLC\_r16 |  |

NR\_SL\_RLC\_TestModeConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_RLC\_TestModeConfig\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |

NR\_SL\_AM\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_AM\_Config\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| AM | [NR\_SL\_AM\_RLC\_Type](#NR_SL_AM_RLC_Type) |  |

NR\_SL\_RLC\_AM\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RLC\_AM\_Type** | | |
| **Comment** |  | | |
| Tx | [NR\_SL\_AM\_Config\_Type](#NR_SL_AM_Config_Type) | opt |  |
| Rx | [NR\_SL\_AM\_Config\_Type](#NR_SL_AM_Config_Type) | opt |  |

NR\_SL\_UM\_Config\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_UM\_Config\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) |  |
| UM | [NR\_SL\_UM\_RLC\_Type](#NR_SL_UM_RLC_Type) | For groupcast and broadcast of NR sidelink communication, only 6 bit SN length is configured |

NR\_SL\_RLC\_UM\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RLC\_UM\_Type** | | |
| **Comment** |  | | |
| Tx | [NR\_SL\_UM\_Config\_Type](#NR_SL_UM_Config_Type) | opt |  |
| Rx | [NR\_SL\_UM\_Config\_Type](#NR_SL_UM_Config_Type) | opt |  |

NR\_SL\_RLC\_RbConfig\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_RLC\_RbConfig\_Type** | |
| **Comment** | For groupcast and broadcast only uni-directional UM mode is supported | |
| RlcAM | [NR\_SL\_RLC\_AM\_Type](#NR_SL_RLC_AM_Type) |  |
| RlcUM | [NR\_SL\_RLC\_UM\_Type](#NR_SL_RLC_UM_Type) |  |

NR\_SL\_RLC\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RLC\_Configuration\_Type** | | |
| **Comment** |  | | |
| Rb | [NR\_SL\_RLC\_RbConfig\_Type](#NR_SL_RLC_RbConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| TestMode | [NR\_SL\_RLC\_TestModeConfig\_Type](#NR_SL_RLC_TestModeConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |

NR\_SL\_LogicalChannelIdentity\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_LogicalChannelIdentity\_Type** | |
| **Comment** |  | |
| LCID | integer | Refer to 38.321 Table 6.2.4-1 |
| AnyValue | [Null\_Type](#Null_Type) | Any value allowed from 4 to 19 - Used for NR-SS-UE reception - Acc to 38.331 clause 9.1.1.5: Selected by the transmitting UE, up to UE implementation |

NR\_SL\_RlcBearerConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_RlcBearerConfig\_Type** | | |
| **Comment** |  | | |
| Rlc | [NR\_SL\_RLC\_Configuration\_Type](#NR_SL_RLC_Configuration_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| LogicalChannelId | [NR\_SL\_LogicalChannelIdentity\_Type](#NR_SL_LogicalChannelIdentity_Type) | opt | As per TS 38.321 Table 6.2.4-1 Values of LCID for SL-SCH |
| Mac | [NR\_SL\_MAC\_Configuration\_Type](#NR_SL_MAC_Configuration_Type) | opt |  |

#### D.11.2.3.5 MAC\_Configuration

MAC configuration: radio bearer specific configuration

MAC\_Configuration: Basic Type Definitions

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Basic Types** | | |
| **NR\_SL\_Priority\_Type** | SL\_LogicalChannelConfig\_r16.sl\_Priority\_r16 |  |
| **NR\_SL\_PrioritisedBitRate\_Type** | SL\_LogicalChannelConfig\_r16.sl\_PrioritisedBitRate\_r16 |  |
| **NR\_SL\_HARQ\_FeedbackEnabled\_Type** | SL\_LogicalChannelConfig\_r16.sl\_HARQ\_FeedbackEnabled\_r16 |  |

NR\_SL\_Layer2Id\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_Layer2Id\_Type** | |
| **Comment** |  | |
| AnyValue | [Null\_Type](#Null_Type) | Any value. Used only when NR-SS-UE is configured in reception |
| Value | [B24\_Type](#B24_Type) | Mandatory when NR-SS-UE is configured in transmission |

NR\_SL\_MAC\_LogicalChannelConfig\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_MAC\_LogicalChannelConfig\_Type** | | |
| **Comment** |  | | |
| Priority | [NR\_SL\_Priority\_Type](#NR_SL_Priority_Type) | opt | Logical channel priority for the DL as described in TS 38.321, clause 5.4.3.1 for the Tx |
| PrioritizedBitRate | [NR\_SL\_PrioritisedBitRate\_Type](#NR_SL_PrioritisedBitRate_Type) | opt | PBR as described for the Tx; probably not needed at SS |
| HARQ\_FeedbackEnabled | [NR\_SL\_HARQ\_FeedbackEnabled\_Type](#NR_SL_HARQ_FeedbackEnabled_Type) | opt | Indicate the HARQ feedback enabled/disabled restriction in LCP for this sidelink logical channel. According to TS 38.321 clause 5.22.1.1 and 5.22.1.3. |
| NR\_SS\_UE\_Layer2Identity | [NR\_SL\_Layer2Id\_Type](#NR_SL_Layer2Id_Type) | opt | The Layer-2 Identity of the NR-SS-UE - Corresponding to the source Layer-2 Id for NR-SS-UE transmission and to the destination Layer-2 Id for NR-SS-UE reception |
| UE\_Layer2Identity | [NR\_SL\_Layer2Id\_Type](#NR_SL_Layer2Id_Type) | opt | The UE under test Layer 2 Identity - Corresponding to the source Layer-2 Id for NR-SS-UE reception and to the destination Layer-2 Id for NR-SS-UE transmission |

NR\_SL\_MAC\_Configuration\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_MAC\_Configuration\_Type** | | |
| **Comment** |  | | |
| LogicalChannelConfig | [NR\_SL\_MAC\_LogicalChannelConfig\_Type](#NR_SL_MAC_LogicalChannelConfig_Type) | opt | mandatory for initial configuration; omit means "keep as it is" |
| TestMode | [Null\_Type](#Null_Type) | opt | FFS |

### D.11.2.4 NR\_SL\_Security

NR\_SL\_PDCP\_ActTime\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PDCP\_ActTime\_Type** | |
| **Comment** |  | |
| None | [Null\_Type](#Null_Type) | No Activation time; to be used if Null Ciphering is applied |
| SQN | [NR\_PdcpSQN\_Type](#NR_PdcpSQN_Type) | PDCP sequence number |

NR\_SL\_SecurityActTime\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SecurityActTime\_Type** | | |
| **Comment** |  | | |
| RadioBearerId | [NR\_SL\_RadioBearerId\_Type](#NR_SL_RadioBearerId_Type) |  |  |
| Tx | [NR\_SL\_PDCP\_ActTime\_Type](#NR_SL_PDCP_ActTime_Type) |  |  |
| Rx | [NR\_SL\_PDCP\_ActTime\_Type](#NR_SL_PDCP_ActTime_Type) |  |  |

NR\_SL\_SecurityActTimeList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_SecurityActTimeList\_Type** |
| **Comment** |  |
| record of [NR\_SL\_SecurityActTime\_Type](#NR_SL_SecurityActTime_Type) | |

NR\_SL\_IntegrityProtAlgorithm

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_SL\_IntegrityProtAlgorithm** |
| **Comment** | Defined in TS 24.587 cl. 8.4.18  sl5G\_IA0 is applied |
| sl5G\_IA0 |  |
| sl128\_5G\_IA1 |  |
| sl128\_5G\_IA2 |  |
| sl128\_5G\_IA3 |  |
| sl5G\_IA4 |  |
| sl5G\_IA5 |  |
| sl5G\_IA6 |  |
| sl5G\_IA7 |  |

NR\_SL\_IntegrityInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_IntegrityInfo\_Type** | | |
| **Comment** | for initial configuration activation time is not needed for integrity protection as all messages in Tx and Rx after security activation are integrity protected;  this means this ASP is invoked before transmission of Direct link security mode command;  if there is a integrity violation in Rx SS shall set the IndicationStatus in the common ASP part to flag the integrity error  (IndicationStatus.Error.Integrity.Pdcp := true);  integrity to be provided for each SL-SRB and SL-DRB as per core spec  Null integrity alogrithm is applied and therefore no keys are provided to NR-SS-UE | | |
| Algorithm | [NR\_SL\_IntegrityProtAlgorithm](#NR_SL_IntegrityProtAlgorithm) |  | Integrity Algorithm being defined in TS 24.587 |
| ActTimeList | [NR\_SL\_SecurityActTimeList\_Type](#NR_SL_SecurityActTimeList_Type) | opt | omit for initial configuration (i.e. all SL-SRBs and SL-DRBs to be integrity protected immediately) |

NR\_SL\_CipheringAlgorithmtypes

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **NR\_SL\_CipheringAlgorithmtypes** |
| **Comment** | Defined in TS 24.587 cl. 8.4.18  sl5G\_EA0 is applied |
| sl5G\_EA0 |  |
| sl128\_5G\_EA1 |  |
| sl128\_5G\_EA2 |  |
| sl128\_5G\_EA3 |  |
| sl5G\_EA4 |  |
| sl5G\_EA5 |  |
| sl5G\_EA6 |  |
| sl5G\_EA7 |  |

NR\_SL\_CipheringInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_CipheringInfo\_Type** | | |
| **Comment** | Null integrity algorithm is applied and therefore no keys are provided to NR-SS-UE | | |
| Algorithm | [NR\_SL\_CipheringAlgorithmtypes](#NR_SL_CipheringAlgorithmtypes) |  | Ciphering Algorithm being defined in TS 24.587 |
| ActTimeList | [NR\_SL\_SecurityActTimeList\_Type](#NR_SL_SecurityActTimeList_Type) |  |  |

NR\_SL\_SecStartRestart\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SecStartRestart\_Type** | | |
| **Comment** |  | | |
| Integrity | [NR\_SL\_IntegrityInfo\_Type](#NR_SL_IntegrityInfo_Type) | opt | optional to allow separated activation of integrity and ciphering; omit: keep as it is |
| Ciphering | [NR\_SL\_CipheringInfo\_Type](#NR_SL_CipheringInfo_Type) | opt | optional to allow separated activation of integrity and ciphering; omit: keep as it is |

NR\_SL\_Security\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_Security\_Type** | |
| **Comment** | Security mode command procedure (TS 25.587, clause 6.1.2.7) - Applied for unicast only | |
| StartRestart | [NR\_SL\_SecStartRestart\_Type](#NR_SL_SecStartRestart_Type) | information to start/restart security protection in the PDCP  TimingInfo : 'Now' (in general)  NOTE: "activation time" may be specified in the primitive based on PDCP SN |
| Release | [Null\_Type](#Null_Type) | to release security protection in the PDCP  (if any; if there is no security the NR-SS-UE does not need to do anything)  TimingInfo : 'Now' (in general)  NOTE: "activation time |

### D.11.2.5 NR\_SL\_PDCP\_Count

NR\_SL\_PdcpCountInfo\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_PdcpCountInfo\_Type** | | |
| **Comment** |  | | |
| RadioBearerId | [NR\_SL\_RadioBearerId\_Type](#NR_SL_RadioBearerId_Type) |  |  |
| Tx | [NR\_PdcpCount\_Type](#NR_PdcpCount_Type) | opt | omit: keep as it is |
| Rx | [NR\_PdcpCount\_Type](#NR_PdcpCount_Type) | opt | omit: keep as it is |

NR\_SL\_PdcpCountInfoList\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_PdcpCountInfoList\_Type** |
| **Comment** |  |
| record of [NR\_SL\_PdcpCountInfo\_Type](#NR_SL_PdcpCountInfo_Type) | |

NR\_SL\_PdcpCountGetReq\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PdcpCountGetReq\_Type** | |
| **Comment** |  | |
| AllSL\_RBs | [Null\_Type](#Null_Type) | return COUNT values for all SL-RBs being configured |
| SingleRB | [NR\_SL\_RadioBearerId\_Type](#NR_SL_RadioBearerId_Type) |  |

NR\_SL\_PDCP\_CountReq\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PDCP\_CountReq\_Type** | |
| **Comment** |  | |
| Get | [NR\_SL\_PdcpCountGetReq\_Type](#NR_SL_PdcpCountGetReq_Type) | Request PDCP count for one or all SL-RBs being configured at the PDCP  TimingInfo: 'Now' |
| Set | [NR\_SL\_PdcpCountInfoList\_Type](#NR_SL_PdcpCountInfoList_Type) | Set PDCP count for one or all SL-RBs being configured at the PDCP;  list for RBs which's COUNT shall be manipulated  TimingInfo: 'Now' (in general) |

NR\_SL\_PDCP\_CountCnf\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PDCP\_CountCnf\_Type** | |
| **Comment** |  | |
| Get | [NR\_SL\_PdcpCountInfoList\_Type](#NR_SL_PdcpCountInfoList_Type) | SL-RBs in ascending order; SL-SRBs first |
| Set | [Null\_Type](#Null_Type) |  |

### D.11.2.6 NR\_SL\_SystemIndication

NR\_SL\_SyncRefReporting\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_SyncRefReporting\_Type** | |
| **Comment** | Start is triggered in NR-SS-UE when  - the first S-SS associated with a MasterInformationBlockSidelink is received in the same subframe by NR-SS-UE since enabling of reporting  - the previous indication was 'stop' or 'spurious' and an S-SS associated with a MasterInformationBlockSidelink is received by SS-UE  Stop is triggered in NR-SS-UE when  - no S-SS/MasterInformationBlockSidelink is transmitted in the period  - the previous indication was 'start' or 'spurious' and no S-SS/MasterInformationBlockSidelink is transmitted in the period  Spurious is triggered in NR-SS-UE when  - the first S-SS is received without MasterInformationBlockSidelink or MasterInformationBlockSidelink is received without S-SS since enabling of SLSS reporting  - the previous indication was 'start' or 'stop' and S-SS is received without MasterInformationBlockSidelink or MasterInformationBlockSidelink is received without S-SS | |
| SyncRef\_Start | [NR\_SL\_SyncRefParamInd\_Type](#NR_SL_SyncRefParamInd_Type) |  |
| SyncRef\_Stop | [Null\_Type](#Null_Type) |  |
| SyncRef\_Spurious | [Null\_Type](#Null_Type) |  |

NR\_SL\_SyncRefParamInd\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SyncRefParamInd\_Type** | | |
| **Comment** |  | | |
| SL\_SSId\_Value | [SL\_SSId\_Type](#SL_SSId_Type) |  |  |
| MasterInformationBlockSidelink | MasterInformationBlockSidelink |  |  |

NR\_SL\_PSSCH\_SciReporting\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_PSSCH\_SciReporting\_Type** | |
| **Comment** |  | |
| SciFormat2A | [NR\_SL\_SciFormat2A\_Reporting\_Type](#NR_SL_SciFormat2A_Reporting_Type) | Acc to TS 38.212 cl 8.4.1.1 SCI format 2-A |
| SciFormat2B | [NR\_SL\_SciFormat2B\_Reporting\_Type](#NR_SL_SciFormat2B_Reporting_Type) | Acc to TS 38.212 cl 8.4.1.2 SCI format 2-B |

NR\_SL\_SciFormat2A\_Reporting\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SciFormat2A\_Reporting\_Type** | | |
| **Comment** | Acc to TS 38.212 cl 8.4.1.1 SCI format 2-A | | |
| HarqProcessNumber | integer |  |  |
| NewDataIndicator | integer |  |  |
| RedundancyVersion | integer |  |  |
| SourceID | integer |  |  |
| DestinationID | integer |  |  |
| HarqFeedback | integer |  |  |
| CastTypeIndicator | integer |  |  |
| CSI\_Request | integer |  |  |

NR\_SL\_SciFormat2B\_Reporting\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SciFormat2B\_Reporting\_Type** | | |
| **Comment** | Ac to TS 38.212 clause 8.4.1.2 SCI format 2-B | | |
| HarqProcessNumber | integer |  |  |
| NewDataIndicator | integer |  |  |
| RedundancyVersion | integer |  |  |
| SourceID | integer |  |  |
| DestinationID | integer |  |  |
| HarqFeedback | integer |  |  |
| ZoneID | integer |  |  |
| CommunicationRangeRequirement | integer |  |  |

### D.11.2.7 NR\_SL\_SCI\_Trigger

NR\_SL\_SCI\_Trigger\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SCI\_Trigger\_Type** | | |
| **Comment** |  | | |
| Layer2Ids | [NR\_SL\_Layer2Ids\_Type](#NR_SL_Layer2Ids_Type) |  |  |
| SL\_BWP\_Id | BWP\_Id |  |  |
| SL\_PSCCH\_SciTrigger | [NR\_SL\_PSCCH\_Sci\_Tx\_Type](#NR_SL_PSCCH_Sci_Tx_Type) |  |  |
| SL\_PSSCH\_SciTrigger | [NR\_SL\_PSSCH\_Sci\_Tx\_Type](#NR_SL_PSSCH_Sci_Tx_Type) |  |  |
| CSI\_RS\_Signal | boolean |  | when set to true the CSI-RS signal shall be transmitted by NR-SS-UE using NR\_SL\_TxPoolConfig\_Type.SL\_CSI\_RS |

## D.11.3 NR\_Sidelink\_System\_Interface

NR\_SL\_SYSTEM\_CTRL\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SYSTEM\_CTRL\_REQ** | | |
| **Comment** | ASP to request/control NR Sidelink system configuration | | |
| Common | [NR\_SL\_ReqAspCommonPart\_Type](#NR_SL_ReqAspCommonPart_Type) |  | Unless specified otherwise for a particular primitive, the following applies:  SS\_UE\_Id: identifier of the NR-SS-UE  RoutingInfo : 'None'  TimingInfo : 'Now' or specific activation time, depends on respective primitive  ControlInfo :  CnfFlag: depends on TimingInfo; in general 'false' when specific activation time is used, 'true' for 'Now'  FollowOnFlag 'false' - not applicable for NR-SS-UE |
| Request | [NR\_SL\_SystemRequest\_Type](#NR_SL_SystemRequest_Type) |  | - NR\_SS\_UE\_Config  TimingInfo: depends on the request  - EnquireTiming  TimingInfo: 'now' |

NR\_SL\_SYSTEM\_CTRL\_CNF

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SYSTEM\_CTRL\_CNF** | | |
| **Comment** | ASP to confirm a Sidelink system configuration request | | |
| Common | [NR\_SL\_CnfAspCommonPart\_Type](#NR_SL_CnfAspCommonPart_Type) |  | TimingInfo is ignored by TTCN (apart from EnquireTiming): SS may set TimingInfo to "None"  - EnquireTiming  TimingInfo InCoverage: DFN/Subframe/Slot |
| Confirm | [NR\_SL\_SystemConfirm\_Type](#NR_SL_SystemConfirm_Type) |  |  |

NR\_SL\_SYSTEM\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SYSTEM\_IND** | | |
| **Comment** | ASP to report errors or system indications | | |
| Common | [NR\_SL\_IndAspCommonPart\_Type](#NR_SL_IndAspCommonPart_Type) |  | The SS shall provide TimingInfo (SFN + subframe number) depending on the respective indication: |
| Indication | [NR\_SL\_SystemIndication\_Type](#NR_SL_SystemIndication_Type) |  | - Error  TimingInfo: related to the error (if available)  - SyncRefReporting  TimingInfo: SFN/Subframe/Slot or DFN/DirectSubframe/Slot related to the S-SS/MasterInformationBlockSidelink received  - PSSCH\_SciReporting  TimingInfo: SFN/Subframe/Slot or DFN/DirectSubframe/Slot related to the received PSSCH SCI  - MAC\_CE  TimingInfo: SFN/Subframe/Slot or DFN/DirectSubframe/Slot related to the received MAC\_CE |

NR\_SL\_SYSTEM\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SL\_SYSTEM\_PORT** | |
| **Comment** | NR Sidelink UE PTC: Port for system configuration | |
| out | [NR\_SL\_SYSTEM\_CTRL\_REQ](#NR_SL_SYSTEM_CTRL_REQ) |  |
| in | [NR\_SL\_SYSTEM\_CTRL\_CNF](#NR_SL_SYSTEM_CTRL_CNF) |  |

NR\_SL\_SYSIND\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SL\_SYSIND\_PORT** | |
| **Comment** | NR Sidelink UE PTC: Port for system indications | |
| in | [NR\_SL\_SYSTEM\_IND](#NR_SL_SYSTEM_IND) |  |

## D.11.4 NR\_Sidelink\_Data

NR\_SL\_U\_PlaneTx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_U\_PlaneTx\_Type** | | |
| **Comment** | NOTE: formal type definition to allow later enhancements | | |
| SlotDataList | [NR\_SL\_DRB\_DataPerSlotList\_Tx\_Type](#NR_SL_DRB_DataPerSlotList_Tx_Type) |  |  |

NR\_SL\_DRB\_DataPerSlotList\_Tx\_Type

|  |  |
| --- | --- |
| **TTCN-3 Record of Type** | |
| **Name** | **NR\_SL\_DRB\_DataPerSlotList\_Tx\_Type** |
| **Comment** | list of PC5 user plane data to be sent in slots given by the SlotOffset in the single elements of the list;  Timing:  the start time for the whole sequence is given by the timing info of the ASP (common information);  the timing for the respective data pdus is given by the SlotOffset relative to the common timing info;  design consideration:  repetitions of this sequence are not foreseen  (in which case the slot offset could not be related to the timing info of the ASP) |
| record of [NR\_SL\_DRB\_DataPerSlot\_Tx\_Type](#NR_SL_DRB_DataPerSlot_Tx_Type) | |

NR\_SL\_DRB\_DataPerSlot\_Tx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_DRB\_DataPerSlot\_Tx\_Type** | | |
| **Comment** | common definition for one or several PDUs/SDUs;  in NR the DL data is sent in the slot given by the slot offset | | |
| SlotOffset | integer |  | NR:  Slot offset relative to the absolute timing information given in the common part of the ASP;  NOTE:  if a PDCP PDU or SDU takes more than one slot, SlotOffset specifies the first slot (TTI) |
| HarqProcess | [NR\_HarqProcessAssignment\_Type](#NR_HarqProcessAssignment_Type) | opt | HARQ process to be used: specific value or automatically assigned by SS;  in automatic mode SS chooses HARQ process out of the set configured by SciFormat2A\_Type.HarqProcessConfig |
| PduSduList | [NR\_SidelinkDataList\_Type](#NR_SidelinkDataList_Type) |  | list of PDUs/SDUs to be sent in one slot (TTI) |

NR\_SidelinkDataList\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SidelinkDataList\_Type** | |
| **Comment** |  | |
| SdapSdu | [SDAP\_SDUList\_Type](#SDAP_SDUList_Type) | NR-SS-UE SS configuration: RLC AM/UM mode, PDCP normal mode (automatic handling of PDCP header), automatic handling of SDAP header |

NR\_SL\_U\_PlaneRx\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_U\_PlaneRx\_Type** | | |
| **Comment** | NOTE: formal type definition to allow later enhancements | | |
| SlotDataList | [NR\_SidelinkDataList\_Type](#NR_SidelinkDataList_Type) |  | It is currently FFS if SCI 1A/2A or 2B should be also reported |

NR\_SL\_MAC\_ControlElement\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SL\_MAC\_ControlElement\_Type** | |
| **Comment** |  | |
| SidelinkCSI\_Reporting | [NR\_SL\_MAC\_CE\_SidelinkCSI\_Reporting\_Type](#NR_SL_MAC_CE_SidelinkCSI_Reporting_Type) | TS 38.321 clause 6.1.3.35 |

NR\_SL\_MAC\_CE\_SidelinkCSI\_Reporting\_Type

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_MAC\_CE\_SidelinkCSI\_Reporting\_Type** | | |
| **Comment** | TS 38.321 clause 6.1.3.35 | | |
| RI | [B1\_Type](#B1_Type) |  |  |
| CQI | [B4\_Type](#B4_Type) |  |  |
| Reserved | [B3\_Type](#B3_Type) |  |  |

NR\_SL\_DATA\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_DATA\_REQ** | | |
| **Comment** | Common ASP to send PDUs on PC5 channels SL-DCH | | |
| Common | [NR\_SL\_ReqAspCommonPart\_Type](#NR_SL_ReqAspCommonPart_Type) |  | Unless specified otherwise for a particular primitive, the following applies:  SS\_UE\_Id: identifier of the NR-SS-UE  RoutingInfo : SL-SRB or SL-DRB or SL-QosFlow  TimingInfo : 'Now' or specific activation time, depends on respective primitive  ControlInfo : CnfFlag:=false; FollowOnFlag:=false |
| U\_Plane | [NR\_SL\_U\_PlaneTx\_Type](#NR_SL_U_PlaneTx_Type) |  |  |

NR\_SL\_DATA\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_DATA\_IND** | | |
| **Comment** | Common ASP to receive PDUs from PC5 channels SL-DCH | | |
| Common | [NR\_SL\_IndAspCommonPart\_Type](#NR_SL_IndAspCommonPart_Type) |  | SS\_UE\_Id : identifier of the SL UE  RoutingInfo : SL-SRB or SL-DRB or SL-QosFlow  TimingInfo : SFN/Subframe or DFN/DirectSubframe when message has been received |
| U\_Plane | [NR\_SL\_U\_PlaneRx\_Type](#NR_SL_U_PlaneRx_Type) |  |  |

NR\_SL\_DRB\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SL\_DRB\_PORT** | |
| **Comment** |  | |
| out | [NR\_SL\_DATA\_REQ](#NR_SL_DATA_REQ) |  |
| in | [NR\_SL\_DATA\_IND](#NR_SL_DATA_IND) |  |

## D.11.5 NR\_Sidelink\_SRBs

ASP Definitions to send/receive peer-to-peer messages on SL-SRBs

NR\_PC5\_RRC\_Message\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_PC5\_RRC\_Message\_Type** | |
| **Comment** | PC5-RRC PDU on SCCH | |
| Scch | SCCH\_Message |  |

NR\_SRB\_Request\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SRB\_Request\_Type** | |
| **Comment** |  | |
| PC5\_S | NG\_V2X\_Message\_Type | PC5-S message to be sent to UE on SL-SRB0/1/2 |
| PC5\_RRC | [NR\_PC5\_RRC\_Message\_Type](#NR_PC5_RRC_Message_Type) | PC5-RRC message to be sent on SL-SRB3 |

NR\_SRB\_Indication\_Type

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Union Type** | | |
| **Name** | **NR\_SRB\_Indication\_Type** | |
| **Comment** |  | |
| PC5\_S | NG\_V2X\_Message\_Type | PC5-S message received from UE on SL-SRB0/1/2 |
| PC5\_RRC | [NR\_PC5\_RRC\_Message\_Type](#NR_PC5_RRC_Message_Type) | PC5-RRC message received from UE on SL-SRB3 |

NR\_SL\_SRB\_COMMON\_REQ

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SRB\_COMMON\_REQ** | | |
| **Comment** | common ASP to send PDUs to SL\_SRB0, SL\_SRB1, SL\_SRB2, SL\_SRB3 | | |
| Common | [NR\_SL\_ReqAspCommonPart\_Type](#NR_SL_ReqAspCommonPart_Type) |  | SS\_UE\_Id: identifier of the NR-SS-UE  RoutingInfo : SL\_SRB0, SL\_SRB1, SL\_SRB2, SL\_SRB3  TimingInfo : Now in normal cases;  TimingInfo can be set to specific activation time  in which the Sidelink message shall be sent out (in this case and  if the PDU is too long to be sent in one slot  the TimingInfo corresponds to the first slot)  ControlInfo  CnfFlag:=false;  FollowOnFlag=false; |
| Signalling | [NR\_SRB\_Request\_Type](#NR_SRB_Request_Type) |  |  |

NR\_SL\_SRB\_COMMON\_IND

|  |  |  |  |
| --- | --- | --- | --- |
| **TTCN-3 Record Type** | | | |
| **Name** | **NR\_SL\_SRB\_COMMON\_IND** | | |
| **Comment** | common ASP to receive PDUs from SL\_SRB0, SL\_SRB1, SL\_SRB2, SL\_SRB3 | | |
| Common | [NR\_SL\_IndAspCommonPart\_Type](#NR_SL_IndAspCommonPart_Type) |  | SS\_UE\_Id: identifier of the NR-SS-UE  RoutingInfo : SL\_SRB0, SL\_SRB1, SL\_SRB2, SL\_SRB3  TimingInfo : time when message has been received |
| Signalling | [NR\_SRB\_Indication\_Type](#NR_SRB_Indication_Type) |  |  |

NR\_SL\_SRB\_PORT

|  |  |  |
| --- | --- | --- |
| **TTCN-3 Port Type** | | |
| **Name** | **NR\_SL\_SRB\_PORT** | |
| **Comment** | NR SL PTC: Port for Sending/Receiving data on SL-SRBs | |
| out | [NR\_SL\_SRB\_COMMON\_REQ](#NR_SL_SRB_COMMON_REQ) |  |
| in | [NR\_SL\_SRB\_COMMON\_IND](#NR_SL_SRB_COMMON_IND) |  |

# D.12 SidelinkUE\_Common\_TypeDefs

SS\_UE\_Id\_Type

|  |  |
| --- | --- |
| **TTCN-3 Enumerated Type** | |
| **Name** | **SS\_UE\_Id\_Type** |
| **Comment** | Simulated UE-ID |
| ss\_UE\_NonSpecific | Represents all Simulated UEs |
| ss\_UE\_Id1 |  |
| ss\_UE\_Id2 |  |
| ss\_UE\_Id3 |  |

# D.13 References to TTCN-3

|  |  |  |
| --- | --- | --- |
| **References to TTCN-3** | | |
| **NR\_ASP\_TypeDefs** | NR\_Defs/NR\_ASP\_TypeDefs.ttcn | Rev 33940 |
| **NR\_ASP\_DrbDefs** | NR\_Defs/NR\_ASP\_DrbDefs.ttcn | Rev 33327 |
| **NR\_ASP\_SrbDefs** | NR\_Defs/NR\_ASP\_SrbDefs.ttcn | Rev 32690 |
| **NR\_CommonDefs** | NR\_Defs/NR\_CommonDefs.ttcn | Rev 33602 |
| **IP\_ASP\_TypeDefs** | IP\_PTC/IP\_ASP\_TypeDefs.ttcn | Rev 32541 |
| **NR\_PDCP\_TypeDefs** | Common4G5G/NR\_PDCP\_TypeDefs.ttcn | Rev 33965 |
| **SDAP\_TypeDefs** | Common4G5G/SDAP\_TypeDefs.ttcn | Rev 29170 |
| **NR\_ASP\_VirtualNoiseDefs** | NR\_Defs/NR\_ASP\_VirtualNoiseDefs.ttcn | Rev 30633 |
| **CommonDefs** | Common/CommonDefs.ttcn | Rev 32710 |
| **CommonAspDefs** | Common/CommonAspDefs.ttcn | Rev 30678 |
| **NR\_SideLink\_ASP\_TypeDefs** | NR\_Defs/NR\_SideLink\_ASP\_TypeDefs.ttcn | Rev 33916 |
| **SidelinkUE\_Common\_TypeDefs** | Common4G5G/SidelinkUE\_Common\_TypeDefs.ttcn | Rev 31810 |

Annex E (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2017-08 | R5#76 | R5-174121 | - | - | - | Introduction of TS 38.523-3. | 0.0.1 |
| 2018-03 | R5#78 | R5-180678 | - | - | - | Initial Test Model aspects | 0.1.0 |
| 2018-04 | R5#2-5G-NR | R5-182072 | - | - | - | EN-DC: Addition of Test Model aspects | 0.2.0 |
| 2018-05 | R5#79 | R5-183237 | - | - | - | EN-DC: Test Model updates | 1.0.0 |
| 2018-06 | RAN#80 | RP-181212 | - | - | - | put under revision control as v15.0.0 with small editorial changes | 15.0.0 |
| 2018-09 | RAN#81 | R5-184333 | 0002 | - | F | Updates to Annex B | 15.1.0 |
| 2018-09 | RAN#81 | R5-184696 | 0003 | - | F | EN-DC Test Model: Addition of further aspects | 15.1.0 |
| 2018-09 | RAN#81 | R5-185172 | 0001 | 2 | F | EN-DC: Test Model updates | 15.1.0 |
| 2018-09 | RAN#81 | [R5s180525](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2018/Docs/R5s180525.zip) / RP-181987 | 0005 | - | F | Add updated ASP definitions to 38.523-3 (prose), Annex D | 15.1.0 |
| 2018-12 | RAN#82 | R5-186727 | 0011 | - | F | Default NR TBS Tables for SIG test cases | 15.2.0 |
| 2018-12 | RAN#82 | R5-186729 | 0013 | - | F | EN-DC: Misc. Test Model updates | 15.2.0 |
| 2018-12 | RAN#82 | R5-188105 | 0010 | 1 | F | EN-DC test model handling of different types of bearers | 15.2.0 |
| 2018-12 | RAN#82 | R5-188106 | 0012 | 1 | F | SA Option2: Initial Test Model aspects | 15.2.0 |
| 2018-12 | RAN#82 | R5s180636/ RP-182298 | 0014 | - | F | Add updated ASP definitions to 38.523-3 (prose), Annex D | 15.2.0 |
| 2019-03 | RAN#83 | R5-191204 | 0028 | - | F | Common aspects: Test Model updates | 15.3.0 |
| 2019-03 | RAN#83 | R5-191206 | 0030 | - | F | EN-DC: Test Model updates | 15.3.0 |
| 2019-03 | RAN#83 | R5-192812 | 0029 | 1 | F | NR/5GC: Test Model updates | 15.3.0 |
| 2019-03 | RAN#83 | R5-192858 | 0031 | 2 | F | Common aspects: Updates to NR TBS handling | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190019](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190019.zip) | 0022 | - | B | Addition of EN-DC RRC test case 8.2.3.1.1 in FR1 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190024](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190024.zip) | 0023 | - | B | Addition of EN-DC RRC test case 8.2.5.2.1 in FR2 path | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190027](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190027.zip) | 0024 | - | B | Addition of EN-DC RRC test case 8.2.5.4.1 in FR1 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190029](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190029.zip) | 0025 | - | B | Addition of EN-DC RRC test case 8.2.5.2.1 in FR1 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190033](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190033.zip) | 0026 | - | F | Rel-15 Dec'18 partial baseline upgrade for 5GS TTCN-3 Test Suites | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190051](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190051.zip) | 0027 | - | F | Corrections for Initialisation of NR ENDC component | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190060](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190060.zip) | 0032 | - | B | Addition of EN-DC RRC test case 8.2.3.5.1 in FR1 path | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190062](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190062.zip) | 0033 | - | B | Addition of EN-DC RRC test case 8.2.3.4.1 in FR1 path | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190064](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190064.zip) | 0034 | - | F | Common Corrections to ENDC testcases | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190065](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190065.zip) | 0035 | - | F | correction to ENDC test case 10.2.1.2 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190067](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190067.zip) | 0037 | - | B | Addition of EN-DC RRC test case 8.2.3.12.1 in FR1 path | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190069](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190069.zip) | 0038 | - | F | Correction to ENDC RRC testcase 8.2.3.1.1 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190086](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190086.zip) | 0015 | 1 | B | Addition of EN-DC NAS test case 10.2.1.2 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190087](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190087.zip) | 0016 | 1 | B | Addition of EN-DC NAS test case 10.2.1.1 | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190088](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190088.zip) | 0017 | 1 | B | Addition of EN-DC RRC test case 8.2.5.4.1 in FR2 path | 15.3.0 |
| 2019-03 | RAN#83 | [R5s190124](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190124.zip)/ RP-190106 | 0054 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.3.0 |
| 2019-06 | RAN#84 | R5-193993 | 0095 | - | F | NR: TBS updates | 15.4.0 |
| 2019-06 | RAN#84 | R5-193994 | 0096 | - | F | NR: Default UL Grants | 15.4.0 |
| 2019-06 | RAN#84 | R5-195240 | 0097 | 1 | F | Intra-NR mobility in RRC\_CONNECTED | 15.4.0 |
| 2019-06 | RAN#84 | R5-195241 | 0098 | 1 | F | NR/5GC: Test Model updates | 15.4.0 |
| 2019-06 | RAN#84 | R5-195373 | 0103 | 1 | F | Handling of signalled absolute threshold values for OTA | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190150](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190150.zip) | 0060 | - | F | NR/5GC: Re-verification of 5GC NAS test case 9.1.6.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190155](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190155.zip) | 0061 | - | B | Addition of EN-DC RRC test case 8.2.3.6.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190157](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190157.zip) | 0062 | - | B | Addition of EN-DC RRC test case 8.2.3.7.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190161](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190161.zip) | 0063 | - | B | Addition of EN-DC RRC test case 8.2.2.9.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190163](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190163.zip) | 0064 | - | B | Addition of EN-DC RLC test case 7.1.2.2.1 in FR1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190165](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190165.zip) | 0065 | - | B | Addition of EN-DC RLC test case 7.1.2.2.2 in FR1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190168](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190168.zip) | 0066 | - | F | Correction for EN-DC test cases | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190169](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190169.zip) | 0067 | - | B | Addition of EN-DC RRC test case 8.2.3.8.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190177](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190177.zip) | 0068 | - | F | Correction of EN-DC RRC test case 8.2.5.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190178](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190178.zip) | 0069 | - | F | Correction to EN-DC RRC test cases 8.2.3.1.1 and 8.2.3.12.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190179](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190179.zip) | 0070 | - | B | Addition of EN-DC RRC test case 8.2.5.3.1 in FR1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190181](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190181.zip) | 0071 | - | B | Addition of EN-DC RRC test case 8.2.5.3.1 in FR2 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190188](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190188.zip) | 0072 | - | F | Correction to EN-DC RRC test cases 8.2.2.4.1 and 8.2.2.5.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190192](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190192.zip) | 0073 | - | B | Addition of EN-DC RRC test cases 8.2.1.1.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190194](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190194.zip) | 0074 | - | B | Addition of EN-DC RRC test case 8.2.1.1.1 in FR2 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190196](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190196.zip) | 0075 | - | B | Addition of EN-DC RRC test case 8.2.2.9.1 in FR2 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190198](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190198.zip) | 0076 | - | B | Addition of NR5GC RRC test case 8.1.3.1.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190200](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190200.zip) | 0077 | - | F | Correction to EN-DC RRC test cases 8.2.3.4.1 and 8.2.3.5.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190205](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190205.zip) | 0079 | - | B | NR5GC : Addition of 5GMM test case 9.1.2.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190207](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190207.zip) | 0080 | - | B | NR5GC : Addition of 5GMM test case 9.1.5.2.2 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190209](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190209.zip) | 0081 | - | B | NR5GC FR1 : Addition of RRC test case 8.1.1.2.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190214](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190214.zip) | 0082 | - | B | NR5GC FR1 : Addition of RRC test case 8.1.1.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190216](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190216.zip) | 0083 | - | B | Addition of EN-DC RLC test case 7.1.2.3.1 in FR1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190219](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190219.zip) | 0084 | - | F | Correction to cas\_NR\_DRB\_COMMON\_REQ\_DataPerSlot | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190223](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190223.zip) | 0086 | - | B | NR5GC : Addition of 5GMM test case 9.1.5.2.4 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190236](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190236.zip) | 0094 | - | B | Addition of EN-DC RLC test case 7.1.2.2.2 in FR2 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190244](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190244.zip) | 0100 | - | F | ENDC : Correction for RRC test case 8.2.5.2.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190245](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190245.zip) | 0101 | - | F | Correction for EN-DC test cases | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190260](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190260.zip) | 0040 | 1 | B | Addition of EN-DC RRC test case 8.2.5.1.1 in FR2 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190261](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190261.zip) | 0041 | 1 | F | Correction for Rel-15 EN-DC ESM test case 10.2.1.1. | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190268](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190268.zip) | 0046 | 1 | F | Correction to f\_NR\_ENDC\_PreambleOnEUTRA | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190269](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190269.zip) | 0047 | 1 | F | Correction to f\_EUTRA38\_ENDC\_GetDRBIdOfMCG | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190270](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190270.zip) | 0048 | 1 | F | Correction to cs\_NR\_CellConfigPhysicalLayerUplink | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190271](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190271.zip) | 0049 | 1 | F | Correction to f\_NR\_SendRRCReconfigurationContentsToEUTRA | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190272](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190272.zip) | 0051 | 1 | B | Addition of EN-DC RRC test case 8.2.2.4.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190273](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190273.zip) | 0052 | 1 | B | Addition of EN-DC RRC test case 8.2.2.5.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190274](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190274.zip) | 0053 | 1 | F | Correction to EN-DC TC 10.2.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190278](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190278.zip) | 0057 | 1 | B | Addition of EN-DC RRC test case 8.2.2.5.1 in FR2 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190279](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190279.zip) | 0059 | 1 | B | Addition of EN-DC RRC test case 8.2.5.1.1 in FR1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190296](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190296.zip) | 0043 | 1 | B | Addition of EN-DC RRC test case 8.2.3.3.1 in FR1 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190297](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190297.zip) | 0044 | 1 | B | Addition of NR5GC NAS test case 9.1.6.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190300](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190300.zip) | 0055 | 1 | F | Correction to EN-DC RRC testcase 8.2.3.1.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190301](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190301.zip) | 0056 | 1 | B | Addition of EN-DC RRC test case 8.2.2.4.1 in FR2 path | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190303](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190303.zip) | 0058 | 1 | F | Correction to checking of SINR reporting in Measurement Report in 5G EN-DC RRC test cases | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190311](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190311.zip) | 0050 | 1 | F | Correction to EN-DC RRC test case 8.2.3.5.1 | 15.4.0 |
| 2019-06 | RAN#84 | [R5s190309](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190309.zip) / RP-190903 | 0121 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.4.0 |
| 2019-09 | RAN#85 | R5-195955 | 0297 | - | F | EN-DC: Test Model updates | 15.5.0 |
| 2019-09 | RAN#85 | R5-196754 | 0324 | - | F | Corrections to Paging calculation in clause 7.3.4 | 15.5.0 |
| 2019-09 | RAN#85 | R5-197222 | 0295 | 1 | F | Common aspects: Test Model updates | 15.5.0 |
| 2019-09 | RAN#85 | R5-197223 | 0296 | 1 | F | NR/5GC: Test Model updates | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190400](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190400.zip) | 0163 | - | F | Correction to common ENDC TC preamble function | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190401](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190401.zip) | 0164 | - | F | Corrections for RlcBearerRouting in EN-DC test cases | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190408](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190408.zip) | 0166 | - | F | Correction to NR RLC test case 7.1.2.3.2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190410](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190410.zip) | 0167 | - | F | Correction to ENDC NAS test case 10.2.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190411](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190411.zip) | 0168 | - | F | Correction to IP address check in Loopback Mode for ENDC TCs | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190412](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190412.zip) | 0169 | - | F | Correction to ENDC testcase 8.2.5.3.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190413](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190413.zip) | 0170 | - | F | Correction to ENDC testcase 8.2.5.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190414](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190414.zip) | 0171 | - | F | Correction to ENDC testcase 8.2.2.4.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190416](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190416.zip) | 0172 | - | F | Correction to EN-DC test case 8.2.3.8.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190419](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190419.zip) | 0174 | - | B | EN-DC FR1 : Addition of NR RRC test case 8.2.3.15.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190421](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190421.zip) | 0175 | - | F | Correction to f\_Get\_NG\_SecurityModeCmdMsg | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190424](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190424.zip) | 0176 | - | F | Correction to ENDC testcase 7.1.3.5.4 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190425](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190425.zip) | 0177 | - | F | Correction to fl\_NR\_InitialiseSiScheduling | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190426](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190426.zip) | 0178 | - | F | Correction to NR5GC test case 8.1.3.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190429](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190429.zip) | 0181 | - | F | Correction to ENDC Test case 7.1.2.3.2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190435](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190435.zip) | 0186 | - | F | Correction to NR5GC test case 9.1.2.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190436](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190436.zip) | 0187 | - | F | Correction to function f\_ContentOf\_pc\_nrBandX | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190442](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190442.zip) | 0189 | - | F | Corrections for TTCN-3 timing functions for 5GNR | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190445](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190445.zip) | 0192 | - | F | Correction to TTCN-3 encoding rules for 5G test cases | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190446](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190446.zip) | 0193 | - | F | Correction for PHR-Config in 5G test cases | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190451](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190451.zip) | 0198 | - | F | Correction to EN-DC RRC test case 8.2.1.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190455](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190455.zip) | 0202 | - | F | Correction to f\_NR\_CellInfo\_SetPRACH\_ConfigurationIndex | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190456](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190456.zip) | 0203 | - | B | ENDC FR2 : Addition of NR RLC test case 7.1.2.3.7 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190464](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190464.zip) | 0204 | - | F | Correction for 5GSM PDU SESSION ESTABLISHMENT ACCEPT | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190465](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190465.zip) | 0205 | - | F | Correction for common TTCN function f\_IntegerList\_Search() | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190466](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190466.zip) | 0206 | - | F | Correction for 5GMM test case 9.1.6.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190468](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190468.zip) | 0208 | - | F | Corrections for NAS template function f\_Check\_NG\_PDUSessionReleaseComplete | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190470](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190470.zip) | 0209 | - | F | Correction to NAS typedefs QosFlowDescr and Qos\_Rule | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190471](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190471.zip) | 0210 | - | F | Corrections to NR-MRDC Capability check test case 8.2.1.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190476](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190476.zip) | 0213 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190478](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190478.zip) | 0214 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190480](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190480.zip) | 0215 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190482](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190482.zip) | 0216 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.2 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190484](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190484.zip) | 0217 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.3 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190488](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190488.zip) | 0218 | - | B | Addition of EN-DC PDCP test case 7.1.3.2.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190489](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190489.zip) | 0219 | - | B | Addition of EN-DC test case 7.1.3.1.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190491](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190491.zip) | 0220 | - | B | Addition of EN-DC test case 8.2.3.14.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190505](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190505.zip) | 0224 | - | F | Correction for NR RRC test case 8.1.1.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190506](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190506.zip) | 0225 | - | B | Addition of EN-DC test case 7.1.2.3.8 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190508](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190508.zip) | 0226 | - | F | Correction to PIXITs px\_NR\_PrimaryBandDeltas and px\_NR\_SecondaryBandDeltas | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190509](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190509.zip) | 0227 | - | B | Addition of EN-DC test case 7.1.1.1.1a in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190511](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190511.zip) | 0228 | - | B | Addition of NR5GC test case 7.1.1.1.1a in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190513](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190513.zip) | 0229 | - | B | Addition of NR5GC test case 7.1.2.3.8 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190528](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190528.zip) | 0234 | - | F | Correction to EN-DC test case 10.2.2.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190529](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190529.zip) | 0235 | - | F | Correction for EN-DC RRC test case 8.2.2.9.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190530](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190530.zip) | 0236 | - | F | Correction to band combination DC\_(n)41AA | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190537](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190537.zip) | 0239 | - | B | Addition of EN-DC test case 7.1.2.2.6 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190543](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190543.zip) | 0242 | - | F | Rel-15 Jun'19 partial baseline upgrade for 5GS TTCN-3 Test Suites | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190550](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190550.zip) | 0245 | - | B | Addition of EN-DC RLC test case 7.1.2.3.8 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190554](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190554.zip) | 0247 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190556](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190556.zip) | 0248 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190558](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190558.zip) | 0249 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190560](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190560.zip) | 0250 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.2 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190562](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190562.zip) | 0251 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190564](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190564.zip) | 0252 | - | B | Addition of EN-DC PDCP test case 7.1.3.3.3 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190586](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190586.zip) | 0260 | - | F | Correction to EN-DC RRC test case 8.2.3.4.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190587](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190587.zip) | 0261 | - | B | EN-DC FR1: Addition of RRC test case 8.2.3.13.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190590](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190590.zip) | 0263 | - | F | Correction to EN-DC test case 7.1.3.5.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190593](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190593.zip) | 0264 | - | F | Correction to EN-DC RRC test case 8.2.3.3.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190607](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190607.zip) | 0274 | - | F | Correction to common EN-DC function f\_EUTRA38\_ENDC\_ReConfigAM\_UM() | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190608](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190608.zip) | 0275 | - | B | Addition of EN-DC RRC test case 8.2.3.1.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190610](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190610.zip) | 0276 | - | B | Addition of EN-DC RRC test case 8.2.3.3.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190612](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190612.zip) | 0277 | - | B | Addition of EN-DC RRC test case 8.2.3.5.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190614](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190614.zip) | 0278 | - | B | Addition of EN-DC RRC test case 8.2.3.6.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190620](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190620.zip) | 0281 | - | B | Addition of NR5GC test case 9.1.5.1.6 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190624](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190624.zip) | 0283 | - | B | Addition of NR5GC test case 9.1.5.2.9 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190626](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190626.zip) | 0284 | - | B | Addition of NR5GC test case 10.1.2.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190629](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190629.zip) | 0286 | - | B | Addition of NR5GC test case 10.1.6.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190635](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190635.zip) | 0078 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.1.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190636](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190636.zip) | 0085 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.1 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190637](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190637.zip) | 0087 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190638](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190638.zip) | 0088 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.4 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190640](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190640.zip) | 0289 |  | B | Addition of NR5GC test case 7.1.2.3.10 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190643](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190643.zip) | 0091 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.2 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190644](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190644.zip) | 0093 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190645](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190645.zip) | 0103 | 2 | B | Addition of EN-DC PDCP test case 7.1.3.5.2 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190647](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190647.zip) | 0104 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190648](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190648.zip) | 0106 | 2 | B | Addition of NR test case 9.1.2.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190649](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190649.zip) | 0107 | 1 | F | ENDC : Correction to RLC TCs | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190651](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190651.zip) | 0109 | 1 | F | Correction for IP packet handling for EN-DC test cases | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190652](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190652.zip) | 0110 | 1 | F | Correction to fl\_NR5GC\_QosRulesLength | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190653](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190653.zip) | 0111 | 1 | F | Correction to fl\_NR\_Common\_Init | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190654](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190654.zip) | 0112 | 1 | F | Correction to IP PTC for NR5GC test cases | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190655](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190655.zip) | 0113 | 1 | F | Correction to SA security mode procedure | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190656](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190656.zip) | 0114 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.6 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190657](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190657.zip) | 0115 | 1 | F | Correction to default value for PDUSessionEstablishmentRequest | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190658](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190658.zip) | 0116 | 1 | F | Correction to Paging in NR5GC | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190659](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190659.zip) | 0118 | 1 | B | ENDC FR1 : Addition of NR RLC test case 7.1.2.2.3 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190661](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190661.zip) | 0119 | 1 | F | Correction to NR5GC Release function f\_NR\_RRCRelease\_Common | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190662](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190662.zip) | 0120 | 1 | B | Addition of NR5GC test case 9.1.6.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190663](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190663.zip) | 0122 | 1 | B | Addition of NR5GC RLC test case 7.1.2.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190664](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190664.zip) | 0123 | 1 | B | Addition of NR5GC RLC test case 7.1.2.2.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190666](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190666.zip) | 0124 | 1 | B | ENDC FR1 : Addition of NR RLC test case 7.1.2.2.4 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190669](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190669.zip) | 0292 |  | B | Addition of NR5GC test case 8.1.5.1.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190675](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190675.zip) | 0125 | 1 | B | Addition of NR5GC test case 7.1.2.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190676](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190676.zip) | 0126 | 1 | B | Addition of NR5GC test case 7.1.2.2.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190677](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190677.zip) | 0127 | 1 | B | Addition of EN-DC Session Management test case 10.2.2.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190678](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190678.zip) | 0128 | 1 | B | Addition of NR5GC test case 7.1.2.3.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190680](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190680.zip) | 0129 | 1 | F | Correction to EN-DC testcase 10.2.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190681](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190681.zip) | 0130 | 1 | B | Addition of NR5GC test case 7.1.3.1.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190682](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190682.zip) | 0131 | 1 | B | Addition of NR5GC test case 7.1.3.5.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190683](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190683.zip) | 0132 | 1 | B | Addition of NR5GC test case 7.1.3.5.4 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190685](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190685.zip) | 0136 | 1 | F | Correction to ENDC RRC test case 8.2.1.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190688](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190688.zip) | 0141 | 1 | B | Addition of NR5GC test case 7.1.3.1.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190689](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190689.zip) | 0142 | 1 | B | Addition of NR5GC test case 7.1.2.3.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190690](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190690.zip) | 0147 | 1 | F | Correction to generic function f\_EUTRA\_InitialRegistration\_Step9\_11 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190691](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190691.zip) | 0148 | 1 | F | Correction to ENDC testcase 8.2.3.1.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190692](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190692.zip) | 0154 | 1 | B | Addition of NR5GC test case 8.1.3.1.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190693](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190693.zip) | 0155 | 1 | B | Addition of NR5GC test case 7.1.3.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190694](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190694.zip) | 0156 | 1 | B | Addition of NR5GC test case 7.1.3.3.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190695](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190695.zip) | 0157 | 1 | B | Addition of NR5GC test case 7.1.3.3.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190696](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190696.zip) | 0158 | 1 | B | Addition of NR5GC test case 8.1.2.1.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190697](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190697.zip) | 0159 | 1 | B | Addition of NR5GC test case 6.1.2.3 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190700](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190700.zip) | 0161 | 1 | F | Correction to f\_NG\_Authentication\_A4 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190701](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190701.zip) | 0089 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.4 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190702](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190702.zip) | 0298 | - | F | Corrections to EN-DC ESM test case 10.2.2.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190703](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190703.zip) | 0299 | - | F | Correction to cs\_NR\_ReqAspCommonPart and cr\_PDU\_SessionType | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190704](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190704.zip) | 0300 | - | F | Correction to f\_Check\_NG\_PDUSessionEstablishmentReq | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190705](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190705.zip) | 0301 | - | F | Correction to f\_NR\_UE\_DeRegisterOnSwitchOff | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190706](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190706.zip) | 0302 | - | F | Correction to f\_NR5GC\_RegistrationReject | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190707](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190707.zip) | 0303 | - | F | Correction to NR5GC testcase 9.1.2.2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190717](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190717.zip) | 0309 | - | B | Addition of NR5GC test case 10.1.6.2 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190723](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190723.zip) | 0311 | - | B | Addition of EN-DC test case 7.1.1.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190725](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190725.zip) | 0312 | - | B | Addition of EN-DC test case 7.1.1.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190739](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190739.zip) | 0318 | - | B | Addition of NR5GC test case 8.1.1.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190751](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190751.zip) | 0327 | - | B | Addition of EN-DC test case 8.2.2.7.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190770](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190770.zip) | 0338 | - | F | Correction of NR5GC PDCP test case 7.1.3.5.1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190771](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190771.zip) | 0339 | - | F | Correction of NR5GC mobility management test case 9.1.5.2.4 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190803](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190803.zip) | 0134 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.10 in FR2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190804](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190804.zip) | 0135 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.10 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190805](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190805.zip) | 0140 | 1 | B | Addition of NR5GC test case 6.1.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190806](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190806.zip) | 0143 | 1 | B | Addition of NR5GC test case 7.1.1.2.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190807](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190807.zip) | 0144 | 1 | B | Addition of NR5GC test case 7.1.1.3.1 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190808](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190808.zip) | 0149 | 1 | B | ENDC FR1: Addition of NR PDCP test case 7.1.3.4.2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190809](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190809.zip) | 0150 | 1 | B | ENDC FR2: Addition of NR PDCP test case 7.1.3.4.2 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190810](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190810.zip) | 0152 | 1 | B | Addition of ENDC test case 7.1.2.3.9 in FR1 | 15.5.0 |
| 2019-09 | RAN#85 | [R5s190820](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190820.zip)/ RP-191720 | 0356 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.5.0 |
| 2019-12 | RAN#86 | R5-198992 | 0459 | 1 | F | Common aspects: Test Model updates | 15.6.0 |
| 2019-12 | RAN#86 | R5-198993 | 0460 | 1 | F | NR/5GC: Test Model updates | 15.6.0 |
| 2019-12 | RAN#86 | R5-198994 | 0461 | 1 | F | EN-DC: Test Model updates | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190869](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190869.zip) | 0384 |  | F | Correction to NR MAC test case 7.1.1.3.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190871](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190871.zip) | 0386 |  | F | Correction for ENDC test case 8.2.3.3.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190872](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190872.zip) | 0387 |  | B | EN-DC FR1 : Addition of NR RLC test case 7.1.2.3.11 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190874](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190874.zip) | 0388 |  | F | Corrections to NR5GC Idle Mode test case 6.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190886](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190886.zip) | 0389 |  | F | Corrections to NR MAC test case 7.1.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190887](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190887.zip) | 0390 |  | F | Corrections to NR MAC test case 7.1.1.3.5 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190888](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190888.zip) | 0391 |  | F | Corrections to common funcion f\_NRL2\_ReconfigExistingAndAddNewDRBs() | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190889](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190889.zip) | 0392 |  | F | Corrections to NR MAC test case 7.1.1.3.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190890](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190890.zip) | 0393 |  | F | Corrections to NR RLC test case 7.1.2.3.9 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190891](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190891.zip) | 0394 |  | F | Corrections to NR RLC test case 7.1.2.3.8 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190893](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190893.zip) | 0396 |  | F | Corrections for NR RRC test case 8.1.1.4.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190894](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190894.zip) | 0397 |  | F | Correction to NR RLC test case 7.1.2.3.7 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190897](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190897.zip) | 0400 |  | F | Correct to NR measurement test case 8.1.3.1.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190898](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190898.zip) | 0401 |  | F | Correction to NR PDCP test case 7.1.3.5.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190899](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190899.zip) | 0402 |  | F | Correction to NR MAC test case 7.1.1.3.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190900](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190900.zip) | 0403 |  | F | Correction to ENDC template cs\_RadioBearer\_Reconfig | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190901](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190901.zip) | 0404 |  | F | Correction to ENDC test cases 7.1.2.3.1 and 7.1.2.3.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190905](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190905.zip) | 0407 |  | F | Corrections to NR RLC test case 7.1.2.2.6 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190906](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190906.zip) | 0408 |  | F | Corrections to NR RLC test case 7.1.2.3.5 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190909](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190909.zip) | 0411 |  | F | Correction to EN-DC RRC test case 8.2.2.7.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190910](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190910.zip) | 0412 |  | F | Correction for NR5GC cell intialsiation function | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190911](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190911.zip) | 0413 |  | F | Corrections to NR RLC test case 7.1.2.3.3 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190914](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190914.zip) | 0416 |  | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.3.11 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190916](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190916.zip) | 0417 |  | F | Corrections for EN-DC PDCP test case 7.1.3.4.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190918](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190918.zip) | 0419 |  | F | Corrections for NR PDCP ciphering test cases 7.1.3.3.x | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190919](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190919.zip) | 0420 |  | F | Correction to f\_NR5GC\_PDUSessionEstablishment | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190920](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190920.zip) | 0421 |  | F | Correction to EN-DC ESM test case 10.2.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190925](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190925.zip) | 0424 |  | B | EN-DC FR2 : Addition of EN-DC RRC test case 8.2.3.14.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190927](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190927.zip) | 0425 |  | F | Corrections to NR RLC test cases 7.1.2.2.3 and 7.1.2.2.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190928](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190928.zip) | 0426 |  | F | Correction to type record LADN\_Ind | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190929](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190929.zip) | 0427 |  | F | Correction to f\_NR5GC\_RRC\_Idle\_Steps5\_9\_AKA | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190930](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190930.zip) | 0428 |  | F | Correction to NR5GC testcase 9.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190931](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190931.zip) | 0429 |  | F | NR5GC FR1 : Re-verification of NR5GC RRC test case 8.1.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190936](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190936.zip) | 0434 |  | F | Corrections to NR5GC RRC test case 8.1.2.1.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190938](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190938.zip) | 0435 |  | B | Addition of NR5GC 5GMM test case 9.1.5.1.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190943](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190943.zip) | 0436 |  | F | Correction for EN-DC measurement template | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190944](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190944.zip) | 0438 |  | B | NR5GC FR1 : Addition of 5GSM test case 10.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190948](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190948.zip) | 0440 |  | B | NR5GC FR1 : Addition of SDAP test case 7.1.4.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190953](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190953.zip) | 0441 |  | F | Correction to Kssb and offset parameters for n71 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190954](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190954.zip) | 0442 |  | F | Correction to Kssb and offset parameters for n5 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190957](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190957.zip) | 0444 |  | B | NR5GC FR1 : Addition of 5GMM test case 9.1.1.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190959](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190959.zip) | 0445 |  | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.11 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190961](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190961.zip) | 0446 |  | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.3.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190966](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190966.zip) | 0449 |  | F | Correction for NR MAC test case 7.1.1.3.5 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190968](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190968.zip) | 0451 |  | F | Correction for NR MAC test case 7.1.1.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190972](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190972.zip) | 0145 | 1 | B | Addition of NR5GC test case 7.1.1.3.3 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190973](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190973.zip) | 0151 | 1 | B | Addition of NR5GC test case 7.1.1.3.4 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190974](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190974.zip) | 0160 | 1 | B | Addition of NR5GC test case 7.1.1.3.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190975](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190975.zip) | 0222 | 1 | B | Addition of EN-DC test case 7.1.1.3.3 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190976](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190976.zip) | 0223 | 1 | B | Addition of EN-DC test case 7.1.1.3.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190977](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190977.zip) | 0232 | 1 | B | Addition of EN-DC test case 7.1.1.3.6 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190978](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190978.zip) | 0233 | 1 | B | Addition of NR5GC test case 7.1.1.3.6 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190979](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190979.zip) | 0240 | 1 | B | ENDC FR2: Addition of RLC AM test case 7.1.2.3.9 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190980](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190980.zip) | 0241 | 1 | F | EN-DC: Indication of initial RACH on NR cell | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190981](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190981.zip) | 0246 | 1 | B | EN-DC FR1 : Addition of MAC test case 7.1.1.3.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190982](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190982.zip) | 0254 | 1 | B | EN-DC FR2 : Addition of RLC test case 7.1.2.2.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190984](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190984.zip) | 0453 |  | F | Correction to function f\_NR\_UE\_DeRegisterOnSwitchOff | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190986](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190986.zip) | 0454 |  | F | Correction for NR MAC test case 7.1.1.3.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190987](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190987.zip) | 0455 |  | F | Corrections to 5GSM test case 10.1.5.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190988](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190988.zip) | 0258 | 1 | B | Addition of EN-DC RLC test cases 7.1.2.3.6 in FR2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190989](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190989.zip) | 0272 | 1 | B | EN-DC FR2: Addition of MAC test case 7.1.1.3.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190990](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190990.zip) | 0273 | 1 | B | Addition of NR5GC test case 7.1.2.3.9 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190991](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190991.zip) | 0456 |  | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.2.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190993](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190993.zip) | 0457 |  | B | EN-DC FR2 : Addition of NR PDCP test case 7.1.3.1.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190995](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190995.zip) | 0279 | 1 | B | EN-DC FR2 : Addition of RRC test case 8.2.3.4.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s190997](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s190997.zip) | 0458 |  | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.3.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191001](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191001.zip) | 0280 | 1 | B | EN-DC FR2 : Addition of RRC test case 8.2.3.7.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191002](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191002.zip) | 0288 | 1 | B | Addition of NR test case 7.1.2.2.6 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191003](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191003.zip) | 0290 | 1 | B | Addition of NR test case 8.1.1.1.2 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191004](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191004.zip) | 0291 | 1 | B | Addition of NR5GC test case 8.1.1.4.2 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191005](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191005.zip) | 0294 | 1 | B | Addition of NR5GC test case 10.1.5.1 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191006](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191006.zip) | 0137 | 2 | B | Addition of NR5GC test case 7.1.1.3.2 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191007](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191007.zip) | 0305 | 1 | B | NR5GC FR1 : Addition of RLC test case 7.1.2.2.4 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191008](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191008.zip) | 0308 | 1 | B | NR5GC FR1 : Addition of RLC test case 7.1.2.3.6 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191009](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191009.zip) | 0310 | 1 | B | Addition of NR5GC test case 9.1.3.1 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191011](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191011.zip) | 0313 | 1 | B | Addition of EN-DC test case 7.1.2.3.3 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191012](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191012.zip) | 0314 | 1 | B | Addition of NR5GC test case 7.1.2.3.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191013](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191013.zip) | 0320 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.3.6 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191014](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191014.zip) | 0328 | 1 | B | EN-DC FR2 : Addition of MAC test case 7.1.1.3.5 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191015](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191015.zip) | 0329 | 1 | F | Correction to 5GSM test case 10.1.5.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191016](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191016.zip) | 0333 | 1 | B | Addition of NR5GC test case 9.1.5.2.8 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191017](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191017.zip) | 0334 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.1.1a | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191018](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191018.zip) | 0336 | 1 | B | Addition of NR5GC test case 7.1.1.1.6 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191019](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191019.zip) | 0337 | 1 | B | Addition of NR5GC test case 7.1.1.3.7 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191020](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191020.zip) | 0340 | 1 | B | Addition of EN-DC test case 7.1.2.3.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191021](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191021.zip) | 0341 | 1 | B | Addition of NR5GC test case 7.1.1.2.3 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191022](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191022.zip) | 0342 | 1 | B | Addition of NR5GC test case 8.1.3.1.5 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191023](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191023.zip) | 0343 | 1 | B | Addition of NR5GC test case 8.1.3.1.8 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191025](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191025.zip) | 0345 | 1 | B | EN-DC FR1 : Addition of NR RLC test case 7.1.1.3.2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191026](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191026.zip) | 0346 | 1 | B | Addition of EN-DC test case 7.1.1.3.7 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191027](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191027.zip) | 0348 | 1 | B | ENDC FR1: Addition of NR RLC AM test case 7.1.2.3.7 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191028](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191028.zip) | 0349 | 1 | B | Addition of NR test case 7.1.2.3.7 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191030](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191030.zip) | 0355 | 1 | F | Corrected usage of ULGrant\_Period\_Type for NR | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191032](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191032.zip) | 0360 | 1 | B | Addition of NR MAC test case 7.1.1.4.1.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191034](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191034.zip) | 0365 | 1 | B | Addition of EN-DC test case 7.1.1.1.1 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191035](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191035.zip) | 0373 | 1 | F | Correction to fl\_NR5GC\_QoSFlowsLength | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191036](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191036.zip) | 0374 | 1 | F | Correction to ENDC Test Case 8.2.5.3.1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191041](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191041.zip) | 0465 | - | F | Correction to function f\_NR\_UE\_DeRegisterOnSwitchOff | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191049](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191049.zip) | 0468 | - | F | Correction to EN-DC MAC test case 7.1.1.3.6 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191050](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191050.zip) | 0469 | - | F | Correction to capability check functions | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191099](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191099.zip) | 0353 | 1 | B | Addition of EN-DC RLC test case 7.1.2.2.6 in FR2 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191100](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191100.zip) | 0363 | 1 | F | Correction for EN-DC MAC test case 7.1.1.1.1a | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191101](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191101.zip) | 0364 | 1 | B | Addition of EN-DC test case 7.1.1.1.2 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191102](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191102.zip) | 0366 | 1 | B | Addition of NR5GC test case 7.1.1.1.2 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191103](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191103.zip) | 0367 | 1 | B | Addition of EN-DC test case 7.1.3.4.1 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191104](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191104.zip) | 0369 | 1 | F | Corrections for NR DCI formats 0-1 and 1-1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191144](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191144.zip) | 0344 | 1 | B | Addition of NR5GC test case 7.1.1.1.3 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191156](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191156.zip) | 0354 | 1 | B | Addition of NR5GC test case 9.1.7.1 in FR1 | 15.6.0 |
| 2019-12 | RAN#86 | [R5s191157](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2019/Docs/R5s191157.zip)/  RP-192496 | 0520 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.6.0 |
| 2020-03 | RAN#87 | R5-201150 | 0692 | 1 | F | 5G Test Models updates | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200049](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200049.zip) | 0585 | - | B | NR5GC FR1 : Addition of NAS test case 9.1.1.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200051](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200051.zip) | 0586 | - | F | Correction to PDCP testcases 7.1.3.2.x and 7.1.3.3.x | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200052](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200052.zip) | 0587 | - | F | Correction to template cs\_RadioBearer\_Reconfig | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200053](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200053.zip) | 0588 | - | F | Correction to EN-DC RRC test cases 8.2.2.4.1 and 8.2.2.5.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200054](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200054.zip) | 0589 | - | F | Corrections for NR RLC test case 7.1.2.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200055](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200055.zip) | 0590 | - | F | Correction for 5GMM test case 9.1.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200056](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200056.zip) | 0591 | - | F | Correction to NR cell info intiialsiation function | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200057](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200057.zip) | 0592 | - | F | Correction to some NR MAC test cases | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200059](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200059.zip) | 0594 | - | F | Correction to NR MAC test case 7.1.1.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200062](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200062.zip) | 0597 | - | F | Correction to NR MAC test case 7.1.1.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200063](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200063.zip) | 0598 | - | F | Correction to NR PDCP test case 7.1.3.4.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200067](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200067.zip) | 0601 | - | F | Correction to NR5GC Test Case 6.1.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200069](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200069.zip) | 0603 | - | F | Correction to the function f\_NR5GC\_RRC\_Idle\_Steps5\_9\_AKA | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200071](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200071.zip) | 0605 | - | F | Correction to NR5GC Test Case 7.1.2.2.3, 7.1.2.2.4 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200072](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200072.zip) | 0606 | - | F | Correction to NR5GC Test Case 7.1.1.1.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200074](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200074.zip) | 0608 | - | F | Correction to NR5GC testcase 7.1.3.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200075](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200075.zip) | 0609 | - | F | Correction to MAC testcase 7.1.1.3.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200076](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200076.zip) | 0610 | - | F | Correction to NR5GC common template cs\_NR\_RachProcedureConfig\_CRNTI\_HO | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200077](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200077.zip) | 0611 | - | F | Correction to NR5GC Test Case 10.1.5.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200078](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200078.zip) | 0612 | - | F | Correction to NR5GC Test Case 7.1.1.1.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200079](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200079.zip) | 0613 | - | F | Correction to NR measurement test cases | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200080](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200080.zip) | 0614 | - | F | Correction to NR5GC test case7.1.1.2.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200081](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200081.zip) | 0615 | - | B | Addition of NR5GC test case 8.1.3.1.4 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200083](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200083.zip) | 0616 | - | B | Addition of NR5GC test case 8.1.3.1.7 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200085](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200085.zip) | 0617 | - | B | Addition of NR5GC test case 8.1.3.1.10 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200087](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200087.zip) | 0618 | - | F | Correction to NR5GC test case 9.1.7.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200088](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200088.zip) | 0619 | - | F | Correction to NR5GC test case 7.1.1.2.4 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200090](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200090.zip) | 0621 | - | B | Addition of NR5GC test case 6.1.1.3 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200092](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200092.zip) | 0622 | - | B | Addition of NR5GC test case 6.1.1.7 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200094](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200094.zip) | 0623 | - | F | Correction to NR MAC test case 7.1.1.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200098](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200098.zip) | 0627 | - | F | Correction to NR RLC test case 7.1.2.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200101](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200101.zip) | 0630 | - | F | Correction in ENDC TC 7.1.1.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200102](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200102.zip) | 0631 | - | F | Correction to NR SA RRC test case 8.1.1.4.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200104](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200104.zip) | 0633 | - | F | Correction to 5GMM test case 9.1.5.2.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200106](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200106.zip) | 0635 | - | F | Corrections for SDAP test case 7.1.4.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200108](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200108.zip) | 0637 | - | F | Correction to RLC Test Case 7.1.2.3.9 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200109](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200109.zip) | 0638 | - | F | Correction to MAC Test Case 7.1.1.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200110](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200110.zip) | 0639 | - | F | Correction to NR5GC Test Case 6.1.2.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200111](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200111.zip) | 0640 | - | F | Correction to NR MAC test case 7.1.1.1.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200116](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200116.zip) | 0642 | - | B | Addition of NR5GC test case 6.1.1.1 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200118](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200118.zip) | 0643 | - | B | Addition of NR5GC test case 9.1.6.1.4 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200120](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200120.zip) | 0644 | - | F | Correction to ENDC RLC AM TC 7.1.2.3.10 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200121](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200121.zip) | 0645 | - | F | Correction to ENDC RLC UM TC 7.1.2.2.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200122](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200122.zip) | 0646 | - | F | Correction to IntraBand Non-Contiguous frequency for DC\_41A\_n41A | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200123](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200123.zip) | 0647 | - | F | Correction to NR RRC test case 8.2.5.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200125](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200125.zip) | 0649 | - | F | Correction to 5GC test case 9.1.6.1.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200126](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200126.zip) | 0650 | - | F | Correction to NR PDCP test case 7.1.3.4.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200134](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200134.zip) | 0651 | - | B | Addition of NR5GC test case 9.1.5.1.10 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200138](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200138.zip) | 0653 | - | B | Addition of NR5GC test case 9.1.5.1.12 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200142](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200142.zip) | 0655 | - | B | Addition of NR5GC test case 9.1.5.1.13 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200145](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200145.zip) | 0657 | - | B | Addition of NR5GC test case 8.1.5.2.1 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200148](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200148.zip) | 0659 | - | F | Correction to NR RLC test case 7.1.2.3.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200149](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200149.zip) | 0660 | - | B | Addition of EN-DC RRC test case 8.2.2.7.1 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200151](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200151.zip) | 0661 | - | B | Addition of EN-DC PDCP test case 7.1.3.4.1 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200153](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200153.zip) | 0662 | - | F | Correction to ENDC PDCP Test Case 7.1.3.5.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200154](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200154.zip) | 0663 | - | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.8 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200156](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200156.zip) | 0664 | - | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.1.2.9 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200158](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200158.zip) | 0665 | - | F | Correction to ENDC testcase 10.2.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200159](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200159.zip) | 0666 | - | F | Correction to NR5GC testcase 7.1.1.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200160](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200160.zip) | 0667 | - | F | Correction to capability check functions | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200161](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200161.zip) | 0668 | - | F | Correction to template cads\_NR\_ULGrantAllocation\_REQ | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200162](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200162.zip) | 0669 | - | F | Correction for common function fl\_SDAP\_Preamble\_Part1() | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200165](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200165.zip) | 0671 | - | B | Addition of NR5GC test case 6.1.1.5 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200169](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200169.zip) | 0673 | - | B | Addition of NR5GC test case 6.1.1.4 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200171](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200171.zip) | 0674 | - | B | Addition of ENDC test case 8.2.2.8.1 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200173](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200173.zip) | 0675 | - | B | Addition of NR5GC test case 6.1.1.2 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200176](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200176.zip) | 0677 | - | B | Addition of NR5GC test case 9.1.5.2.6 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200178](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200178.zip) | 0678 | - | B | NR5GC FR1: Addition of NR RRC IDLE test case 6.1.2.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200180](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200180.zip) | 0679 | - | F | Correction to NR RLC test case 7.1.2.2.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200181](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200181.zip) | 0680 | - | F | Correction to NR5GC RRC test case 8.1.3.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200182](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200182.zip) | 0351 | 1 | B | Addition of NR5GC test case 7.1.1.1.1 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200183](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200183.zip) | 0361 | 1 | B | Addition of NR MAC test case 7.1.1.4.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200184](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200184.zip) | 0395 | 1 | F | Corrections to NR MAC test case 7.1.1.4.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200185](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200185.zip) | 0398 | 1 | F | Corrections to NR MAC test case 7.1.1.4.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200186](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200186.zip) | 0431 | 1 | F | Corrections to NR MAC test case 7.1.1.3.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200187](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200187.zip) | 0432 | 1 | F | Corrections to NR MAC test case 7.1.1.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200189](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200189.zip) | 0452 | 1 | B | Addition of EN-DC MAC test case 7.1.1.1.1 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200190](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200190.zip) | 0463 | 1 | F | Correction to RLC AM test case 7.1.2.3.9 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200191](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200191.zip) | 0464 | 1 | F | Correction for EN-DC MAC test case 7.1.1.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200192](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200192.zip) | 0466 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.3 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200193](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200193.zip) | 0467 | 1 | B | Addition of EN-DC PDCP test case 7.1.3.5.3 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200195](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200195.zip) | 0470 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.1.4.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200196](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200196.zip) | 0472 | 1 | F | Corrections for some NR MAC test cases in NR5GC operation | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200197](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200197.zip) | 0473 | 1 | B | NR5GC : Addition of NR PDCP test case 7.1.3.4.2 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200198](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200198.zip) | 0474 | 1 | F | Correction to ENDC Test Case 7.1.2.3.8 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200199](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200199.zip) | 0475 | 1 | F | Correction to MR-DC capability check | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200202](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200202.zip) | 0476 | 1 | B | NR5GC : Addition of NR RRC test case 8.1.5.6.3 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200204](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200204.zip) | 0477 | 1 | B | NR5GC FR1 : Addition of NR RLC test case 7.1.2.2.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200205](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200205.zip) | 0478 | 1 | B | EN-DC FR1 : Addition of NR RLC test case 7.1.2.2.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200208](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200208.zip) | 0681 |  | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.4.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200211](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200211.zip) | 0483 | 1 | F | Correction for EN-DC ESM test case 10.2.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200212](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200212.zip) | 0486 | 1 | F | Correction to NR5GC Test Case 9.1.3.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200213](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200213.zip) | 0487 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.3.1.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200215](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200215.zip) | 0488 | 1 | B | NR5GC : Addition of NR RRC test case 9.1.5.2.7 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200216](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200216.zip) | 0489 | 1 | B | Addition of EN-DC RLC test case 7.1.2.3.3 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200217](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200217.zip) | 0490 | 1 | B | NR5GC : Addition of NR RRC test case 8.1.1.2.3 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200218](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200218.zip) | 0491 | 1 | B | Addition of EN-DC RLC test case 7.1.2.2.3 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200219](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200219.zip) | 0492 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.3.1.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200220](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200220.zip) | 0493 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.3.1.9 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200221](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200221.zip) | 0494 | 1 | B | Addition of EN-DC MAC test case 7.1.1.3.7 in FR2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200222](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200222.zip) | 0495 | 1 | F | Correction of ENDC Intra Band Contiguous frequency initialisation for MAC TBS test cases | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200223](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200223.zip) | 0682 |  | F | Correction for function fl\_Check\_featureSetsUplinkPerCC | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200224](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200224.zip) | 0683 |  | F | Correction to template cs\_38508\_PCCH\_Config | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200225](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200225.zip) | 0496 | 1 | B | ENDC FR2 : Addition of NR MAC test case 7.1.1.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200226](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200226.zip) | 0497 | 1 | B | NR5GC FR1 : Addition of NR5GC/EUTRA Inter-RAT test case 8.1.3.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200227](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200227.zip) | 0503 | 1 | B | NR5GC FR1 : Addition of SDAP test case 7.1.4.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200231](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200231.zip) | 0508 | 1 | B | Addition of NR5GC test case 6.1.2.17 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200233](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200233.zip) | 0521 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC Measurement test case 8.2.3.6.1a | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200234](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200234.zip) | 0522 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC Measurement test case 8.2.3.7.1a | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200235](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200235.zip) | 0524 | 1 | B | Addition of NR5GC test case 6.1.2.15 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200236](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200236.zip) | 0526 | 1 | F | Correction to EN-DC common handover function | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200239](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200239.zip) | 0527 | 1 | F | Correction to common NR5GC function f\_NR\_DRBInfo\_RemoveEntry() | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200240](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200240.zip) | 0529 | 1 | B | NR5GC FR1: Addition of NR RRC IDLE test case 6.1.2.12 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200241](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200241.zip) | 0531 | 1 | B | Addition of NR5GC test case 7.1.1.2.4 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200242](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200242.zip) | 0535 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC Measurement test case 8.2.3.6.1b | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200243](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200243.zip) | 0536 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC Measurement test case 8.2.3.7.1b | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200244](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200244.zip) | 0538 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200245](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200245.zip) | 0539 | 1 | F | Correction to NR test case 8.1.1.4.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200246](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200246.zip) | 0540 | 1 | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.2.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200250](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200250.zip) | 0685 |  | F | Correction to ENDC testcase 7.1.2.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200252](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200252.zip) | 0546 | 1 | F | Corrections to EN-DC RRC test case 8.2.3.13.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200253](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200253.zip) | 0547 | 1 | F | Corrections to NR RLC test case 7.1.2.3.9 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200254](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200254.zip) | 0548 | 1 | F | Corrections to NR RLC test case 7.1.2.3.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200255](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200255.zip) | 0549 | 1 | F | Corrections for EN-DC measurements test cases | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200256](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200256.zip) | 0552 | 1 | F | Correction to NR MAC test case 7.1.1.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200257](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200257.zip) | 0554 | 1 | F | Correction to NR MAC test case 7.1.1.3.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200258](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200258.zip) | 0565 | 1 | F | Correction for NR RLC test case 7.1.2.3.8 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200259](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200259.zip) | 0566 | 1 | F | Correction for EN-DC RRC test cases 8.2.3.3.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200260](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200260.zip) | 0568 | 1 | F | Correction to 5GMM test case 9.1.5.1.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200261](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200261.zip) | 0569 | 1 | F | Correction to the function f\_NR5GC\_RRC\_Idle\_Steps5\_20 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200262](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200262.zip) | 0570 | 1 | F | Correction to NR RLC test cases 7.1.2.2.3 and 7.1.2.2.4 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200263](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200263.zip) | 0571 | 1 | F | Correction for EN-DC capability checking test case 8.2.1.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200264](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200264.zip) | 0575 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.6.2.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200265](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200265.zip) | 0576 | 1 | F | Correction to NR5GC testcase 9.1.3.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200266](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200266.zip) | 0578 | 1 | F | Correction to the function f\_NR\_CellConfig\_Def and template cas\_NR\_CellConfig\_REQ | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200268](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200268.zip) | 0580 | 1 | F | Corrections to NR MAC test case 7.1.1.1.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200269](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200269.zip) | 0581 | 1 | F | Corrections for NR5GC RRC test case 8.1.2.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200270](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200270.zip) | 0582 | 1 | F | Corrections for EN-DC preamble functions | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200271](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200271.zip) | 0583 | 1 | F | Corrections for NR PDCP test cases 7.1.3.2.x and 7.1.3.3.x | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200276](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200276.zip) | 0686 | - | F | Correction to the function f\_NR\_SkipMeasGap | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200277](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200277.zip) | 0687 | - | F | Correction to the function fl\_Check\_Rf\_Parameters\_NRBand\_PICS\_Supp | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200281](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200281.zip) | 0689 | - | B | Addition of NR5GC test case 6.1.2.7 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200283](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200283.zip) | 0690 | - | B | Addition of NR5GC test case 6.1.2.16 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200287](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200287.zip) | 0693 | - | B | Addition of NR5GC test case 6.1.2.4 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200288](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200288.zip) | 0694 | - | F | Correction to the templates for EAP message | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200290](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200290.zip) | 0695 | - | B | Addition of NR5GC test case 6.1.2.18 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200292](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200292.zip) | 0696 | - | B | Addition of EN-DC RRC RSRQ Measurement test case 8.2.3.2.1 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200294](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200294.zip) | 0697 | - | B | Addition of NR5GC test case 8.1.3.1.15a in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200296](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200296.zip) | 0698 | - | F | Correction to NR MAC test case 7.1.1.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200313](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200313.zip) | 0704 | - | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.3.5 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200319](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200319.zip) | 0707 | - | F | Correction to AM RLC test 7.1.2.3.7 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200383](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200383.zip) | 0741 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200386](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200386.zip) | 0484 | 1 | F | Correction for EN-DC ESM test case 10.2.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200387](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200387.zip) | 0500 | 1 | B | NR5GC FR1 : Addition of NR PDCP test case 7.1.3.2.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200389](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200389.zip) | 0507 | 1 | F | Correction to Intra NR measurements test 8.1.3.1.1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200390](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200390.zip) | 0509 | 1 | B | Addition of NR5GC test case 9.1.6.1.2 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200391](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200391.zip) | 0511 | 1 | B | NR5GC FR1 : Addition of NR PDCP test case 7.1.3.2.2 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200392](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200392.zip) | 0512 | 1 | B | NR5GC FR1 : Addition of NR PDCP test case 7.1.3.2.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200393](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200393.zip) | 0513 | 1 | B | Addition of NR5GC IRAT test case 8.1.3.2.2 in FR1 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200394](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200394.zip) | 0532 | 1 | F | Correction to NR test case 7.1.2.3.6 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200395](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200395.zip) | 0567 | 1 | F | Correction to NR RLC test case 7.1.2.2.6 for EN-DC | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200396](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200396.zip) | 0572 | 1 | F | Correction to NR PDCP test case 7.1.3.5.3 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200397](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200397.zip) | 0574 | 1 | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.1.2.20 | 15.7.0 |
| 2020-03 | RAN#87 | [R5s200398](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200398.zip) | 0584 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.2 | 15.7.0 |
| 2020-06 | RAN#88 | R5-202677 | 0940 | 1 | F | 5G Test Models updates | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200478](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200478.zip) | 0800 | - | F | Correction to 5GMM test case 9.1.5.1.14 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200479](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200479.zip) | 0801 | - | F | Correction for upper tester function for AT+C5GPNSSAI | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200481](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200481.zip) | 0803 | - | B | NR5GC FR1 : Addition of NR MAC test case 7.1.1.4.2.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200482](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200482.zip) | 0804 | - | F | Correction for function f\_Get\_PDUSessionIdForDNNType | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200485](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200485.zip) | 0807 | - | F | Correction to EN-DC RRC measurement test cases 8.2.3.7.1x | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200489](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200489.zip) | 0810 | - | F | Correction to NR5GC common functions when pc\_noOf\_PDUsNewConnection > 0 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200491](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200491.zip) | 0811 | - | F | Correction to EN-DC RRC test case 8.2.2.7.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200492](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200492.zip) | 0812 | - | B | NR5GC FR1 : Addition of RRC test case 8.1.1.3.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200496](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200496.zip) | 0813 | - | F | Correction for NR5GC RRC test case 8.1.1.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200499](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200499.zip) | 0815 | - | F | Correction for 5GMM test case 9.1.7.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200501](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200501.zip) | 0817 | - | F | Correction for upper tester function | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200504](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200504.zip) | 0819 | - | F | Correction to NR Idle Mode test case 6.1.2.9 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200506](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200506.zip) | 0821 | - | F | Correction for EN-DC RRC test case 8.2.1.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200509](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200509.zip) | 0823 | - | B | NR5GC FR1 : Addition of NR5GC IRAT test case 8.1.4.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200510](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200510.zip) | 0824 | - | F | Correction for 5GMM test case 9.1.5.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200511](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200511.zip) | 0825 | - | F | Correction to NR MAC test case 7.1.1.3.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200512](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200512.zip) | 0826 | - | F | Correction for NR paging configuration | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200514](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200514.zip) | 0828 | - | F | Corrections for NR PDCP test cases 7.1.3.3.x | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200516](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200516.zip) | 0830 | - | B | EN-DC FR2 : Addition of NR PDCP test case 7.1.3.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200517](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200517.zip) | 0831 | - | F | Correction for NR5GC RRC test case 8.1.1.4.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200518](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200518.zip) | 0832 | - | F | Correction for NR5GC Idle Mode test case 6.1.2.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200523](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200523.zip) | 0837 | - | F | Correction for NR5GC RRC test case 9.1.2.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200524](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200524.zip) | 0838 | - | F | Correction for 5GMM test case 9.1.6.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200526](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200526.zip) | 0840 | - | F | Correction for NR MAC test cases 7.1.1.1.1 and 7.1.1.1.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200527](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200527.zip) | 0841 | - | F | Corrections for EN-DC measurement test cases 8.2.3.6.1x | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200529](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200529.zip) | 0843 | - | F | Correction for NR RLC test cases 7.1.2.3.3 and 7.1.2.3.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200530](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200530.zip) | 0844 | - | F | Correction for NR RLC test cases 7.1.2.2.3 and 7.1.2.2.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200533](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200533.zip) | 0845 | - | F | NR/5GC FR1: Re-verification of test case 8.1.1.3.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200537](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200537.zip) | 0848 | - | F | Correction to NR Idle mode test case 6.4.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200538](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200538.zip) | 0849 | - | F | Correction to NR Idle Mode test case 6.1.2.18 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200539](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200539.zip) | 0850 | - | B | Addition of NR5GC test case 9.3.1.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200540](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200540.zip) | 0851 | - | F | Corrections to testcase 7.1.2.3.7 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200541](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200541.zip) | 0852 | - | F | Corrections to NR5GC testcase 8.1.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200542](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200542.zip) | 0853 | - | F | Correction to functions f\_NR\_NRFullCapabilityCheck | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200543](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200543.zip) | 0854 | - | F | Correction for NR5GC RRC test case 8.1.3.2.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200544](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200544.zip) | 0855 | - | F | Correction of function f\_NR\_Resourceallocation0\_AllowedNPRB for Band n3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200545](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200545.zip) | 0856 | - | F | Correction for slot offset calculation in f\_NR\_ShortMessageIndication\_SysinfoMod | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200546](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200546.zip) | 0857 | - | F | Correction to the function f\_NR\_ConvertSSB\_IndexToBit | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200547](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200547.zip) | 0858 | - | F | Correction to NR5GC test case 8.1.1.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200548](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200548.zip) | 0859 | - | F | Correction to the function f\_Get\_PDUSessionForDNNType | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200549](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200549.zip) | 0860 | - | F | Correction to the template cads\_NR\_UplinkBWP\_List\_ConfigCommon\_REQ | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200550](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200550.zip) | 0861 | - | F | Correction to NR5GC test case 6.1.1.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200551](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200551.zip) | 0862 | - | F | Correction to NR5GC test case 7.1.1.1.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200552](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200552.zip) | 0863 | - | F | Correction to the template cs\_NR\_RachProcedureConfig\_71116 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200553](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200553.zip) | 0864 | - | F | Correction to NR5GC test case 7.1.1.3.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200554](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200554.zip) | 0865 | - | F | Correction to NR5GC test case 7.1.1.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200555](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200555.zip) | 0866 | - | F | Correction to NR5GC test case 7.1.1.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200556](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200556.zip) | 0867 | - | F | Correction to NR5GC test case 7.1.1.1.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200557](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200557.zip) | 0868 | - | F | Correction to the function f\_TC\_7\_1\_3\_2\_X\_NR\_TestBody | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200558](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200558.zip) | 0869 | - | F | Correction to the function f\_NR\_CellInfo\_SetZeroCorrelationZoneConfig | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200559](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200559.zip) | 0870 | - | F | Correction to NSA test case 10.2.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200560](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200560.zip) | 0871 | - | F | Correction to definition of EUTRA\_PdnInfo\_Type | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200561](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200561.zip) | 0872 | - | F | Correction to NR5GC test case 9.1.6.1.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200563](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200563.zip) | 0874 | - | F | Correction to NR5GC test case 9.1.6.1.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200564](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200564.zip) | 0875 | - | F | NR/5GC FR1: Re-verification of IRAT test case 6.2.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200566](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200566.zip) | 0876 | - | F | NR/5GC FR1: Re-verification of IRAT test case 6.4.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200570](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200570.zip) | 0878 | - | F | EN-DC FR2: Re-verification of test case 8.2.2.8.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200571](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200571.zip) | 0879 | - | F | Corrections to NR5GC testcases 8.1.1.3.1 and 8.1.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200573](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200573.zip) | 0880 | - | B | NR5GC FR1 : Addition of 5GMM test case 9.1.4.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200575](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200575.zip) | 0882 | - | B | NR5GC FR1: Addition of Inter-band CA RRC test case 8.1.5.6.5.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200577](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200577.zip) | 0883 | - | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.4.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200579](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200579.zip) | 0884 | - | B | NR5GC FR1: Addition of Intra-band contiguous CA RRC test case 8.1.5.6.5.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200582](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200582.zip) | 0885 | - | F | Correction to NR5GC test case 8.1.3.1.15a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200583](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200583.zip) | 0886 | - | F | NR/5GC FR1: Re-verification of IRAT test case 6.2.3.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200585](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200585.zip) | 0887 | - | B | Addition of NR5GC test case 10.1.3.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200587](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200587.zip) | 0888 | - | B | Addition of NR5GC test case 9.1.7.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200589](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200589.zip) | 0889 | - | B | Addition of NR5GC test case 9.1.2.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200591](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200591.zip) | 0890 | - | B | Addition of NR5GC test case 9.1.2.4 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200593](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200593.zip) | 0891 | - | B | Addition of NR5GC test case 9.1.2.5 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200597](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200597.zip) | 0893 | - | B | Addition of NR5GC test case 9.1.2.7 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200601](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200601.zip) | 0895 | - | B | Addition of NR5GC test case 6.2.3.7 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200603](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200603.zip) | 0896 | - | B | Addition of NR5GC test case 6.1.2.19 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200605](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200605.zip) | 0897 | - | B | ENDC FR1: Addition of Intra-band contiguous CA RRC test case 8.2.4.1.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200607](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200607.zip) | 0898 | - | B | Addition of NR5GC test case 6.2.3.9 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200610](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200610.zip) | 0900 | - | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.1.2.8 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200612](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200612.zip) | 0902 | - | F | Correction to EN-DC RRC measurement test cases | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200614](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200614.zip) | 0904 | - | B | NR5GC FR1 : Addition of 5GMM test case 9.1.2.6 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200617](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200617.zip) | 0905 | - | B | NR5GC FR1 : Addition of 5GMM test case 9.1.2.8 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200619](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200619.zip) | 0906 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.5.3.4 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200622](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200622.zip) | 0907 | - | B | Addition of NR5GC test case 8.1.3.3.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200624](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200624.zip) | 0908 | - | B | ENDC FR1: Addition of Inter band CA RRC test case 8.2.4.1.1.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200626](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200626.zip) | 0909 | - | F | Corrections to ENDC CA band combinations | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200627](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200627.zip) | 0910 | - | F | Corrections to NR5GC testcase 9.1.5.1.3a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200628](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200628.zip) | 0911 | - | B | Addition of NR5GC test case 9.3.1.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200630](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200630.zip) | 0912 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.5.4.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200633](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200633.zip) | 0914 | - | B | Addition of NR5GC test case 6.1.2.14 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200635](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200635.zip) | 0915 | - | B | Addition of NR5GC test case 6.1.2.13 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200638](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200638.zip) | 0917 | - | B | Addition of NR5GC test case 6.4.1.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200644](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200644.zip) | 0919 | - | F | Correction to EN-DC RRC test case 8.2.1.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200647](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200647.zip) | 0922 | - | F | Correction to common ENDC function for security key exchange | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200648](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200648.zip) | 0923 | - | B | Addition of NR5GC test case 6.2.1.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200650](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200650.zip) | 0924 | - | B | Addition of EN-DC RRC test case 8.2.2.6.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200651](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200651.zip) | 0925 | - | B | Addition of EN-DC RRC test case 8.2.2.6.1 in FR2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200657](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200657.zip) | 0929 | - | B | Addition of NR5GC test case 6.4.1.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200659](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200659.zip) | 0930 | - | B | Addition of NR5GC test case 6.2.1.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200661](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200661.zip) | 0931 | - | F | Correction to multiPDN in EN-DC tests | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200662](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200662.zip) | 0932 | - | F | Correction to test case 9.1.7.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200663](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200663.zip) | 0933 | - | B | Addition of NR5GC test case 6.3.1.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200666](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200666.zip) | 0935 | - | B | EN-DC FR1 : Addition of RRC test case 8.2.6.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200672](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200672.zip) | 0939 | - | B | Addition of NR5GC test case 6.3.1.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200676](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200676.zip) | 0942 | - | F | Correction to template cas\_NR\_SRB\_NasPdu\_REQ | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200677](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200677.zip) | 0943 | - | F | Correction to NR5GC test case 9.1.7.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200680](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200680.zip) | 0945 | - | B | Addition of NR5GC test case 6.3.1.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200682](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200682.zip) | 0946 | - | B | Addition of NR5GC test case 6.3.1.4 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200684](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200684.zip) | 0947 | - | B | ENDC FR2: Addition of EN-DC RRC measurement test case 8.2.3.6.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200686](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200686.zip) | 0948 | - | B | ENDC FR2: Addition of EN-DC RRC measurement test case 8.2.3.7.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200688](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200688.zip) | 0949 | - | B | ENDC FR2: Addition of EN-DC RRC measurement test case 8.2.3.8.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200690](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200690.zip) | 0950 | - | B | NR5GC FR1: Addition of NR PDCP test case 7.1.3.4.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200696](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200696.zip) | 0953 | - | F | Correction to the function f\_NR\_ENDC\_ReConfigAM\_UM | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200697](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200697.zip) | 0954 | - | F | Correction to NR5GC test case 10.1.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200701](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200701.zip) | 0956 | - | F | Correction to the template cs\_NR\_PDCP\_Config\_UlPath | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200703](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200703.zip) | 0958 | - | B | NR5GC FR1 : Addition of NR5GC PWS test case 8.1.5.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200705](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200705.zip) | 0959 | - | B | NR5GC FR1 : Addition of NR5GC PWS test case 8.1.5.3.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200707](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200707.zip) | 0960 | - | B | NR5GC FR1 : Addition of NR5GC PWS test case 8.1.5.3.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200709](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200709.zip) | 0961 | - | F | Correction to NR5GC test case 6.1.1.8 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200710](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200710.zip) | 0962 | - | F | Correction to NR5GC/ENDC test case 7.1.2.3.8 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200715](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200715.zip) | 0966 | - | F | Correction for SDAP test case 7.1.4.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200716](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200716.zip) | 0967 | - | F | Correction to 5GMM test case 9.1.7.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200717](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200717.zip) | 0968 | - | B | NR5GC FR1 : Addition of RRC CA test case 8.1.3.1.17.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200719](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200719.zip) | 0969 | - | B | NR5GC FR1 : Addition of RRC CA test case 8.1.3.1.17.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200721](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200721.zip) | 0970 | - | B | Addition of NR5GC IRAT test case 6.2.3.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200723](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200723.zip) | 0971 | - | B | Addition of NR5GC IRAT test case 6.2.3.4 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200725](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200725.zip) | 0972 | - | B | Addition of NR5GC IRAT test case 8.1.3.2.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200727](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200727.zip) | 0973 | - | B | Addition of NR5GC IRAT test case 8.1.3.2.4 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200729](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200729.zip) | 0974 | - | B | Addition of NR5GC test case 11.3.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200731](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200731.zip) | 0975 | - | F | Correction to NR5GC test case 6.1.2.7 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200732](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200732.zip) | 0976 | - | F | Correction to f\_EUTRA38\_IRAT\_NAS\_Init | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200733](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200733.zip) | 0977 | - | F | Correction to NR5GC RRC test case 8.1.5.4.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200734](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200734.zip) | 0978 | - | B | NR5GC FR1 : Addition of RRC CA test case 8.1.3.1.18.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200736](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200736.zip) | 0979 | - | B | NR5GC FR1 : Addition of RRC CA test case 8.1.3.1.18.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200738](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200738.zip) | 0980 | - | F | Correction to NR5GC test case 10.1.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200744](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200744.zip) | 0983 | - | F | Correction to NR5GC test case 8.2.3.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200747](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200747.zip) | 0985 | - | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.3.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200750](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200750.zip) | 0987 | - | F | Correction to 5GSM test case 9.1.7.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200752](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200752.zip) | 0989 | - | F | Correction to the NR5GC testcase 6.1.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200753](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200753.zip) | 0990 | - | F | Correction to the ENDC testcase 7.1.1.3.7 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200754](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200754.zip) | 0991 | - | F | Correction to NR5GC function f\_NR5GC\_508RRC\_IntraNR\_HO\_IntraCell\_Step1\_8 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200755](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200755.zip) | 0992 | - | F | Correction to NR RLC testcase 7.1.2.2.6 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200756](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200756.zip) | 0993 | - | F | Correction to the NR5GC testcase 9.1.5.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200757](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200757.zip) | 0994 | - | F | Correction to the NR5GC testcase 9.1.7.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200758](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200758.zip) | 0995 | - | B | Addition of NR5GC test case 9.1.5.1.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200762](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200762.zip) | 0515 | 1 | B | Addition of NR5GC IRAT test case 6.2.3.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200763](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200763.zip) | 0641 | 1 | F | Correction to NR5GC RRC test case 8.1.1.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200764](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200764.zip) | 0688 | 1 | B | Addition of NR5GC test case 8.1.2.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200765](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200765.zip) | 0699 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.14 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200766](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200766.zip) | 0702 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.4.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200769](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200769.zip) | 0708 | 1 | B | EN-DC FR2 : Addition of EN-DC RRC test case 8.2.3.8.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200770](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200770.zip) | 0711 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200772](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200772.zip) | 0999 |  | B | Addition of NR5GC test case 6.2.1.4 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200774](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200774.zip) | 0714 | 1 | F | Correction of function fl\_Check\_featureSetsUplinkPerCC | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200775](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200775.zip) | 0715 | 1 | F | Correction for NR PDCP test case 7.1.3.5.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200776](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200776.zip) | 0716 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.3a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200777](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200777.zip) | 0717 | 1 | F | Correction to NR5GC RRC test case 8.1.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200778](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200778.zip) | 0718 | 1 | F | Correction to ENDC RRC test case 8.2.3.13.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200779](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200779.zip) | 0719 | 1 | B | Addition of NR5GC test case 6.1.1.8 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200780](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200780.zip) | 0725 | 1 | B | Addition of NR5GC IRAT test case 6.2.3.5 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200781](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200781.zip) | 0726 | 1 | B | Addition of NR5GC IRAT test case 6.2.3.6 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200784](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200784.zip) | 0730 | 1 | B | Addition of NR5GC test case 6.1.2.22 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200785](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200785.zip) | 0731 | 1 | F | Correction to function fl\_NR\_InitSIB4\_FreqInfoList() | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200786](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200786.zip) | 0732 | 1 | F | Correction to function f\_EUTRA38\_NR\_Capability() | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200787](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200787.zip) | 0733 | 1 | F | Correction to NR Idle Mode test case 6.1.2.7 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200788](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200788.zip) | 0734 | 1 | F | Correction to NR5GC RRC test case 8.1.1.2.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200789](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200789.zip) | 0736 | 1 | B | Addition of NR5GC test case 9.1.1.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200790](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200790.zip) | 0737 | 1 | B | Addition of NR5GC IRAT test case 6.2.3.8 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200791](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200791.zip) | 0738 | 1 | B | Addition of NR5GC test case 6.4.2.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200792](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200792.zip) | 0739 | 1 | B | Addition of NR5GC IRAT test case 9.3.1.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200793](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200793.zip) | 0742 | 1 | B | Addition of NR5GC test case 10.1.1.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200794](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200794.zip) | 0743 | 1 | B | Addition of NR5GC test case 10.1.1.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200795](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200795.zip) | 0753 | 1 | F | Correction for NR5GC common function f\_BuildRRCReconfigParamsNewDRBs() | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200796](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200796.zip) | 0757 | 1 | F | Corrections for EUTRA registration procedure | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200798](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200798.zip) | 1001 | - | F | Correction to NR5GC testcase 9.3.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200799](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200799.zip) | 0759 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC measurement test case 8.2.3.8.1a | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200800](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200800.zip) | 0760 | 1 | B | EN-DC FR1 : Addition of EN-DC RRC measurement test case 8.2.3.8.1b | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200801](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200801.zip) | 0767 | 1 | F | Correction for 5GC registration | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200802](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200802.zip) | 0768 | 1 | F | Correction for NR5GC Idle Mode test cases using SIB3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200803](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200803.zip) | 0771 | 1 | F | Correction for NR grant assignment | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200804](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200804.zip) | 0776 | 1 | B | NR5GC FR1 : Addition of 5GMM test case 9.1.1.6 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200805](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200805.zip) | 0781 | 1 | F | Correction for common ENDC handover function | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200806](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200806.zip) | 0786 | 1 | F | Corrections to test frequencies for Intra-band Contiguous NR CA | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200807](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200807.zip) | 0789 | 1 | F | Correction for NR5GC authentication function | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200808](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200808.zip) | 0792 | 1 | F | Correction for common NR5GC configuration function() | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200809](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200809.zip) | 0797 | 1 | F | Correction to function f\_GetLastConfiguredInternetPDUSessionID | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200817](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200817.zip) | 1006 | - | F | Correction to NR5GC test case 6.4.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200818](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200818.zip) | 1007 | - | F | Update to Configuration and Activation of VNG | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200819](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200819.zip) | 1008 | - | F | Correction to NR5GC test case 9.1.6.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200823](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200823.zip) | 1009 | - | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.1.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200839](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200839.zip) | 0706 | 1 | B | Addition of EN-DC RRC test case 8.2.2.8.1 in FR2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200841](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200841.zip) | 0721 | 1 | B | Addition of NR5GC test case 8.1.3.3.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200842](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200842.zip) | 0723 | 1 | B | Addition of NR5GC test case 9.1.6.1.3 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200844](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200844.zip) | 0740 | 1 | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.1.2.5 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200845](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200845.zip) | 0744 | 1 | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.4.2.2 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200846](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200846.zip) | 0748 | 1 | F | Correction to EN-DC RRC Measurement tests 8.2.3.1.1 and 8.2.3.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200847](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200847.zip) | 0755 | 1 | B | EN-DC FR1 : Addition of RRC test case 8.2.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200848](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200848.zip) | 0758 | 1 | B | EN-DC FR2 : Addition of RRC test case 8.2.2.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200849](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200849.zip) | 0787 | 1 | B | ENDC FR2: Addition of Intra-band Contiguous CA RRC test case 8.2.4.1.1.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200850](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200850.zip) | 0793 | 1 | F | Correction for common NR rounding function() | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200851](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200851.zip) | 0796 | 1 | B | Addition of NR5GC test case 8.1.3.1.16 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200911](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200911.zip) | 0691 | 1 | B | Addition of NR5GC test case 8.1.1.3.2 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200912](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200912.zip) | 0703 | 1 | B | NR5GC FR1 : Addition of 5GMM SMS over NAS test case 9.1.8.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200913](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200913.zip) | 0749 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.3.1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200915](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200915.zip) | 1057 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200918](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200918.zip) | 0516 | 1 | B | Addition of NR5GC test case 6.4.3.1 in FR1 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200919](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200919.zip) | 0534 | 1 | B | NR5GC FR1 : Addition of NR5GC inter-RAT test case 6.2.3.3 | 15.8.0 |
| 2020-06 | RAN#88 | [R5s200920](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s200920.zip) | 0541 | 1 | B | NR5GC FR1: Addition of NR RLC test case 7.1.2.3.11 | 15.8.0 |
| 2020-09 | RAN#89 | [R5s201000](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201000.zip) | 1125 | - | F | Correction for NR5GC idle mode test case 6.4.2.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201004](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201004.zip) | 1129 | - | F | Corrections for NR5GC IRAT Idle mde test cases | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201007](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201007.zip) | 1132 | - | F | Correction to NR MAC test case 7.1.1.3.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201010](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201010.zip) | 1135 | - | F | Correction for NR RLC test cases 7.1.2.3.6 and 7.1.2.3.8 in EN-DC operation | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201011](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201011.zip) | 1136 | - | F | Corrections for NR5GC idle mode test case 6.4.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201012](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201012.zip) | 1137 | - | F | Correction to NR MAC test case 7.1.1.3.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201013](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201013.zip) | 1138 | - | F | Correction to ENDC testcase 8.2.3.2.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201015](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201015.zip) | 1139 | - | F | NR5GC FR1 : Re-verification of NR Idle Mode test case 6.1.2.11 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201017](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201017.zip) | 1140 | - | F | Correction to ENDC testcase 8.2.3.12.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201018](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201018.zip) | 1141 | - | F | Correction to NR5GC IRAT test case 8.1.3.2.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201019](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201019.zip) | 1142 | - | F | Correction to NR PDCP test case 7.1.3.4.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201020](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201020.zip) | 1143 | - | F | Correction to function f\_ExtendedEAPAKA\_PRF | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201021](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201021.zip) | 1144 | - | B | Addition of NR5GC test case 9.1.1.1 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201022](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201022.zip) | 1145 | - | F | Correction to NR MAC test case 7.1.1.1.1a | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201023](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201023.zip) | 1146 | - | F | Correction to EN-DC RRC test case 8.2.3.3.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201025](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201025.zip) | 1147 | - | B | Addition of NR5GC test case 9.1.1.2 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201028](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201028.zip) | 1149 | - | B | Addition of NR5GC test case 10.1.4.1 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201030](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201030.zip) | 1150 | - | F | Correction to NR5GC test case 11.3.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201031](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201031.zip) | 1151 | - | F | Correction to NR5GC test case 6.1.2.14 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201032](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201032.zip) | 1152 | - | F | Correction to NR5GC test case 9.1.5.2.9 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201034](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201034.zip) | 1154 | - | F | Correction to NR5GC test case 9.1.5.2.6 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201035](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201035.zip) | 1155 | - | F | Correction to NR5GC testcase 8.1.1.3.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201036](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201036.zip) | 1156 | - | F | Correction to NR MAC test case 7.1.1.4.2.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201037](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201037.zip) | 1157 | - | F | Correction to NR idle mode test case 6.1.2.19 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201038](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201038.zip) | 1158 | - | F | Correction to NR MAC test case 7.1.1.2.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201039](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201039.zip) | 1159 | - | F | EN-DC FR1 : Re-verification of NR MAC test case 7.1.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201041](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201041.zip) | 1160 | - | F | EN-DC FR2 : Re-verification of NR MAC test case 7.1.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201043](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201043.zip) | 1161 | - | F | Correction to NR5GC test case 6.3.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201044](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201044.zip) | 1162 | - | F | Correction to NR5GC test case 6.3.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201045](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201045.zip) | 1163 | - | F | Correction to NR5GC test case 6.2.1.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201046](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201046.zip) | 1164 | - | F | Correction to NR5GC test case 6.2.3.9 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201047](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201047.zip) | 1165 | - | F | Correction to NR5GC test case 6.4.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201049](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201049.zip) | 1167 | - | F | Correction to NR5GC test case 9.1.2.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201052](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201052.zip) | 1170 | - | F | Correction to the NR5GC testcase 9.1.7.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201053](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201053.zip) | 1171 | - | F | Correction to the NR5GC testcase 7.1.1.5.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201054](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201054.zip) | 1172 | - | B | NR5GC FR1 : Addition of NR5GC IRAT test case 6.2.1.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201060](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201060.zip) | 1175 | - | F | Correction to NR5GC IRAT test case 8.1.5.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201061](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201061.zip) | 1176 | - | F | Correction to 5GMM test case 9.1.2.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201062](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201062.zip) | 1177 | - | F | Correction to NR5GC IRAT test case 8.1.1.3.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201063](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201063.zip) | 1178 | - | F | Correction to 5GSM test case 10.1.6.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201065](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201065.zip) | 1180 | - | F | Correction to the ENDC testcase 7.1.1.3.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201066](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201066.zip) | 1181 | - | F | Correction to NR5GC testcase 9.1.4.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201067](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201067.zip) | 1182 | - | F | Correction to NR5GC testcase 6.2.1.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201072](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201072.zip) | 1186 | - | F | Correction for NR MAC test case 7.1.1.5.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201076](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201076.zip) | 1189 | - | F | Correction to NR5GC IRAT test case 8.1.4.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201077](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201077.zip) | 1190 | - | F | Corrections for NR5GC RRC test case 8.1.5.3.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201079](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201079.zip) | 1192 | - | F | Correction for NR5GC IRAT measurement test cases | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201080](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201080.zip) | 1193 | - | B | EN-DC FR1 : Addition of EN-DC RRC test case 8.2.3.16.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201082](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201082.zip) | 1194 | - | F | Correction to NR5GC idle mode test case 6.1.1.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201085](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201085.zip) | 1196 | - | B | EN-DC FR2 : Addition of EN-DC RRC test case 8.2.3.16.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201090](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201090.zip) | 1198 | - | B | NR5GC FR1: Addition of NR5GC CA test case 8.1.3.1.17.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201091](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201091.zip) | 1199 | - | B | NR5GC FR1: Addition of NR5GC CA test case 8.1.5.6.5.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201096](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201096.zip) | 1202 | - | F | Correction for NR idle mode test case 6.2.1.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201098](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201098.zip) | 1204 | - | F | Correction for RRCResume in NR5GC test cases | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201099](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201099.zip) | 1205 | - | F | Corrections for NR5GC RRC test case 8.1.3.1.16 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201102](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201102.zip) | 1208 | - | F | Correction to NR5GC function f\_EUTRA38\_NR\_AdditionalProtocolConfigOptions | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201103](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201103.zip) | 1209 | - | F | Correction for PDCP test case 7.1.3.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201106](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201106.zip) | 1212 | - | F | Correction for NR inter-frequency test cases | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201111](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201111.zip) | 1215 | - | F | Correction for NR5GC IRAT test case 8.1.3.2.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201112](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201112.zip) | 1216 | - | F | Correction to NR5GC testcase 6.4.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201113](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201113.zip) | 1217 | - | F | Correction to NR5GC testcase 9.1.5.1.8 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201115](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201115.zip) | 1219 | - | F | Correction to ENDC test case 8.2.2.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201118](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201118.zip) | 1222 | - | F | Correction to NR Idle Mode test case 6.4.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201120](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201120.zip) | 1224 | - | F | Correction for NR Idle mode test case 6.1.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201121](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201121.zip) | 1225 | - | F | Correction for PDU SESSION AUTHENTICATION COMMAND | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201124](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201124.zip) | 1227 | - | F | Correction to NR5GC test case 8.1.3.1.11 and 8.1.3.1.12 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201125](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201125.zip) | 1228 | - | F | Correction to NR5GC IRAT test case 8.1.3.2.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201127](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201127.zip) | 1230 | - | F | Correction to the ENDC testcases 8.2.2.x.1 and 8.2.3.13.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201128](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201128.zip) | 1231 | - | F | Correction to NR5GC test case 9.1.1.6 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201129](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201129.zip) | 1232 | - | F | Correction to NR5GC test case 9.1.7.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201132](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201132.zip) | 1236 | - | F | Correction to function f\_NR\_UE\_DeRegisterOnSwitchOff | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201134](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201134.zip) | 1238 | - | F | Correction to NR5GC test case 9.1.5.1.9 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201136](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201136.zip) | 1240 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.5.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201138](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201138.zip) | 1241 | - | F | Correction to NR5GC test case 9.1.5.1.9 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201139](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201139.zip) | 1242 | - | B | Addition of NR5GC test case 6.1.2.21 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201141](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201141.zip) | 1243 | - | F | Correction to NR5GC test case 9.1.4.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201142](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201142.zip) | 1244 | - | F | Correction to NR5GC testcase 9.1.5.1.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201143](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201143.zip) | 1245 | - | F | Correction to NR5GC test case 9.1.7.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201144](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201144.zip) | 1246 | - | B | NR5GC FR1 : Addition of NR MAC test case 7.1.1.4.2.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201146](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201146.zip) | 1247 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.2.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201148](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201148.zip) | 1248 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.2.1.5.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201150](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201150.zip) | 1249 | - | F | Correction to NR5GC test case 7.1.1.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201158](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201158.zip) | 0901 | 1 | F | Correction to NR5GC RRC test case 8.1.3.1.10 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201159](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201159.zip) | 0964 | 1 | F | Correction to NR5GC IRAT test case 8.1.3.3.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201160](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201160.zip) | 0981 | 1 | B | Addition of NR5GC test case 6.3.1.8 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201161](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201161.zip) | 0982 | 1 | B | Addition of NR5GC test case 11.3.4 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201162](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201162.zip) | 0984 | 1 | B | Addition of NR5GC test case 6.3.1.9 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201163](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201163.zip) | 0988 | 1 | F | Corrections for some NR5GC test cases when pc\_NoOf\_PDUs = 0 and pc\_noOf\_PDUsNewConnection > 0 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201164](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201164.zip) | 1011 | 1 | B | Addition of NR5GC test case 6.1.2.23 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201165](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201165.zip) | 1013 | 1 | F | Correction to 5GMM test case 9.1.5.1.11 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201166](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201166.zip) | 1022 | 1 | F | Correction to NR5GC test case 6.2.3.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201167](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201167.zip) | 1023 | 1 | F | Correction to function f\_EUTRA38\_NR\_InitialRegistration | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201168](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201168.zip) | 1025 | 1 | B | Addition of NR5GC test case 7.1.1.5.3 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201169](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201169.zip) | 1026 | 1 | B | Addition of ENDC test case 7.1.1.5.3 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201170](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201170.zip) | 1030 | 1 | B | Addition of NR5GC test case 8.1.3.1.11 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201171](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201171.zip) | 1031 | 1 | F | Correction for AT command format for S-NSSAI | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201173](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201173.zip) | 1033 | 1 | B | Addition of NR5GC IRAT test case 8.1.1.3.4 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201174](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201174.zip) | 1255 | - | F | Correction to ENDC testcase 8.2.2.9.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201180](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201180.zip) | 1034 | 1 | F | Correction to NR Idle Mode test case 6.1.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201181](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201181.zip) | 1035 | 1 | F | Correction to NR5GC testcase 6.2.3.6 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201182](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201182.zip) | 1039 | 1 | B | Addition of NR5GC IRAT test case 8.1.4.2.2.1 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201183](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201183.zip) | 1041 | 1 | F | Correction to NR MAC test case 7.1.1.1.1a | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201187](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201187.zip) | 1260 | - | F | Correction to ENDC RLC Testcase 7.1.2.2.6 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201188](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201188.zip) | 1042 | 1 | F | Correction to NR Idle mode test case 6.4.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201189](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201189.zip) | 1045 | 1 | F | Correction to search space config | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201190](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201190.zip) | 1048 | 1 | F | Correction to selection expression | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201191](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201191.zip) | 1049 | 1 | F | Correction to 5GMM test case 9.1.4.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201192](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201192.zip) | 1050 | 1 | F | Correction for 5GMM test case 9.1.5.1.10 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201193](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201193.zip) | 1055 | 1 | F | Correction to EN-DC RRC test cases 8.2.2.8.1 and 8.2.3.13.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201194](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201194.zip) | 1058 | 1 | F | Correction to NR5GC test case 10.1.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201195](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201195.zip) | 1059 | 1 | F | Correction to NR5GC testcase 10.1.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201196](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201196.zip) | 1064 | 1 | F | Correction to NR MAC test case 7.1.1.3.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201197](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201197.zip) | 1065 | 1 | F | Correction for NR MAC test case 7.1.1.3.5 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201198](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201198.zip) | 1070 | 1 | F | Correction to NR5GC test case 9.1.6.1.3 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201199](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201199.zip) | 1071 | 1 | F | Correction to NR5GC IRAT test case 8.1.4.2.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201200](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201200.zip) | 1072 | 1 | F | Correction to NR5GC IRAT test case 6.4.3.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201201](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201201.zip) | 1074 | 1 | F | Correction to the NR5GC test case 6.1.2.7 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201202](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201202.zip) | 1075 | 1 | F | Correction to the NR5GC test case 9.1.5.2.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201203](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201203.zip) | 1076 | 1 | F | Correction to the NR5GC test case 9.1.5.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201204](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201204.zip) | 1077 | 1 | F | Correction to the NR5GC test case 6.1.2.8 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201205](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201205.zip) | 1084 | 1 | F | Correction to NR5GC test case 9.1.5.2.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201206](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201206.zip) | 1086 | 1 | F | Correction to function f\_TC\_9\_1\_2\_x\_Common | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201207](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201207.zip) | 1093 | 1 | F | Corrections for 5GMM test case 9.1.5.1.14 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201208](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201208.zip) | 1095 | 1 | F | Correction to 5GMM test case 9.1.5.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201209](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201209.zip) | 1096 | 1 | F | Correction to NR5GC test case 9.1.2.x | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201210](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201210.zip) | 1097 | 1 | F | Correction to NR5GC test case 9.1.6.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201211](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201211.zip) | 1098 | 1 | F | Correction to NR5GC test case 8.1.4.2.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201212](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201212.zip) | 1099 | 1 | F | Correction to the NR5GC testcase 6.1.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201213](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201213.zip) | 1101 | 1 | F | Correction to the definition of NR\_FrequencyBand\_Type | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201214](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201214.zip) | 1102 | 1 | F | Correction to the function f\_NR5GC\_RRC\_Idle\_Steps5\_9\_AKA | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201215](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201215.zip) | 1103 | 1 | F | Correction to NR5GC test case 6.1.1.7 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201216](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201216.zip) | 1104 | 1 | F | Correction to NR5GC test case 6.2.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201217](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201217.zip) | 1105 | 1 | F | Correction to NR5GC test case 6.2.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201219](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201219.zip) | 1111 | 1 | B | Addition of NR5GC IRAT test case 8.1.5.5.1 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201221](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201221.zip) | 1262 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.4.1.6 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201264](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201264.zip) | 0996 | 1 | F | Corrections for NR5GC IRAT test case 8.1.4.2.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201265](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201265.zip) | 1014 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201266](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201266.zip) | 1015 | 1 | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201267](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201267.zip) | 1107 | 1 | F | Correction to NR Idle mode test case 6.4.2.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201268](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201268.zip) | 1108 | 1 | F | Correction to NR5GC RRC test case 8.1.5.4.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201269](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201269.zip) | 1118 | 1 | F | Correction to NR5GC testcase 10.1.6.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201270](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201270.zip) | 1119 | 1 | F | Correction to NR5GC testcase 10.1.6.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201271](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201271.zip) | 1121 | 1 | F | Correction to NR5GC test case 6.4.3.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201272](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201272.zip) | 1122 | 1 | B | NR5GC FR1 : Addition of NR MAC test case 7.1.1.5.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201274](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201274.zip) | 1123 | 1 | F | Correction to the function f\_NR\_ENDC\_ReConfigAM\_UM | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201275](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201275.zip) | 0926 | 1 | F | Corrections for NR5GC IRAT common functions | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201276](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201276.zip) | 0944 | 1 | B | NR5GC FR1 : Addition of NR Idle Mode test case 6.1.2.11 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201277](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201277.zip) | 1005 | 1 | B | Addition of NR5GC test case 8.1.3.1.20 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201279](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201279.zip) | 1018 | 1 | F | Correction for NR MAC test case 7.1.1.2.1 in NR5GC operation | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201280](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201280.zip) | 1019 | 1 | F | Correction to NR Idle Mode test case 6.1.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201281](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201281.zip) | 1029 | 1 | B | Addition of NR5GC test case 9.1.5.1.9 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201283](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201283.zip) | 1036 | 1 | F | Correction to NR5GC testcase 7.1.1.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201284](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201284.zip) | 1037 | 1 | B | Addition of NR5GC test case 8.1.3.1.12 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201285](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201285.zip) | 1040 | 1 | B | Addition of NR5GC test case 6.2.1.5 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201289](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201289.zip) | 1046 | 1 | B | Addition of ENDC test case 7.1.1.5.2 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201290](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201290.zip) | 1052 | 1 | F | Correction for NR5GC IRAT test cases 8.1.3.2.3 and 8.1.3.2.4 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201291](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201291.zip) | 1060 | 1 | B | Addition of NR5GC test case 7.1.1.5.2 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201292](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201292.zip) | 1061 | 1 | B | Addition of NR5GC test case 7.1.1.5.4 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201293](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201293.zip) | 1062 | 1 | B | Addition of ENDC test case 7.1.1.5.4 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201294](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201294.zip) | 1066 | 1 | F | Correction to NR5GC RRC test case 8.1.5.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201295](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201295.zip) | 1081 | 1 | B | Addition of NR5GC test case 6.2.2.1 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201296](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201296.zip) | 1082 | 1 | B | Addition of NR5GC test case 6.2.2.2 in FR1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201297](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201297.zip) | 1085 | 1 | F | Correction to NR5GC test case 9.1.5.1.1 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201298](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201298.zip) | 1087 | 1 | F | Correction to NR5GC testcase 10.1.1.2 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201299](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201299.zip) | 1100 | 1 | F | Correction to NR5GC test case 6.1.2.9 | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201300](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201300.zip) | 1109 | 1 | F | Corrections for NR5GC IRAT test cases | 15.9.0 |
| 2020-09 | RAN#89 | [R5s201301](http://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201301.zip) | 1284 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.9.0 |
| 2020-09 | RAN#89 | R5-204475 | 1233 | 1 | F | 5G Test Models updates | 15.9.0 |
| 2020-12 | RAN#90 | [R5s201346](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201346.zip) | 1304 | - | B | ENDC FR2: Addition of NR MAC test case 7.1.1.5.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201350](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201350.zip) | 1306 | - | F | Correction for NR PDCP test cases in EN-DC | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201351](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201351.zip) | 1307 | - | F | Correction for NR band N257 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201354](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201354.zip) | 1308 | - | F | Correction to the NR function f\_EUTRA38\_IRAT\_Init | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201355](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201355.zip) | 1309 | - | F | Correction to the NR function f\_NR\_GetSSB\_ToMeasureSIB2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201356](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201356.zip) | 1310 | - | F | Correction to NR5GC test case 9.1.5.1.3 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201357](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201357.zip) | 1311 | - | F | Correction to NR5GC test case 9.1.1.3 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201358](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201358.zip) | 1312 | - | F | Correction to multiple NR functions | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201359](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201359.zip) | 1313 | - | F | Correction to NR5GC common function f\_NR\_GetSCGConfigResume | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201361](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201361.zip) | 1315 | - | F | Correction to NR5GC Test cases related to Multiple QoS | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201362](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201362.zip) | 1316 | - | F | Correction to NR5GC testcase 10.1.6.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201363](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201363.zip) | 1317 | - | F | Correction to function f\_EUTRA38\_TAUReqFromN1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201366](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201366.zip) | 1318 | - | F | Correction to function f\_NR\_ReceiveMeasurementReports | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201367](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201367.zip) | 1319 | - | F | Correction to NR SDAP testcases 7.1.4.1 and 7.1.4.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201368](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201368.zip) | 1320 | - | F | Correction to NR Idle mode testcases | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201370](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201370.zip) | 1322 | - | F | Correction to test case applicability | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201371](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201371.zip) | 1323 | - | F | Corrections for 5GSM test case 10.1.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201373](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201373.zip) | 1325 | - | F | Corrections for EN-DC test cases with data path check | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201379](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201379.zip) | 1327 | - | F | Correction to NR5GC testcase 10.1.6.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201380](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201380.zip) | 1328 | - | F | Correction to NR5GC Inter-RAT testcase 6.4.3.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201381](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201381.zip) | 1329 | - | F | Correction to the NR5GC testcase 9.1.5.1.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201382](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201382.zip) | 1330 | - | F | Correction to function f\_Get\_PDUSessionAuthenticationCmd | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201383](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201383.zip) | 1331 | - | F | Correction to NR5GC testcase 9.3.1.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201384](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201384.zip) | 1332 | - | F | Correction to function f\_NG\_SMS\_AT\_Config\_WithPowering\_EnterState\_0B | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201385](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201385.zip) | 1333 | - | F | Correction to NR testcases 8.1.3.1.11, 8.1.3.1.12 and 8.1.3.1.15A | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201389](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201389.zip) | 1335 | - | F | Correction to the NR5GC testcase 6.2.3.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201390](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201390.zip) | 1336 | - | F | Correction to the NR5GC testcase 8.1.4.2.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201410](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201410.zip) | 1337 | - | F | Correction to NR5GC testcase 9.1.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201411](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201411.zip) | 1338 | - | F | Correction to the NR5GC testcase 9.1.5.1.3a | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201412](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201412.zip) | 1339 | - | F | Correction to NR5GC testcase 10.1.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201416](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201416.zip) | 1341 | - | F | Correction to NR5GC testcase 9.1.5.2.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201418](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201418.zip) | 1343 | - | F | Correction to NR5GC test case 6.3.1.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201419](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201419.zip) | 1344 | - | F | Correction to NR5GC IRAT test case 6.2.3.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201420](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201420.zip) | 1345 | - | F | Correction to EN-DC RRC test case 8.2.3.3.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201421](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201421.zip) | 1346 | - | F | Correction to OffsetCarrierCORESET#0 for several NR bands for frequencies in mid-range | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201422](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201422.zip) | 1347 | - | F | Correction to NR5GC test case 6.1.2.13 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201423](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201423.zip) | 1348 | - | F | Correction to NR5GC test case 6.1.2.19 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201424](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201424.zip) | 1349 | - | F | Correction to NR5GC test case 9.1.4.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201434](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201434.zip) | 1351 | - | F | Correction to NR RLC testcase 7.1.2.3.8 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201435](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201435.zip) | 1352 | - | F | Correction to EN-DC RRC test case 8.2.2.6.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201436](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201436.zip) | 1353 | - | F | Correction to NR MAC test case 7.1.1.5.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201437](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201437.zip) | 1354 | - | F | Correction to NR MAC test case 7.1.1.5.4 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201442](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201442.zip) | 1355 | - | F | Correction to NR5GC test case 6.3.1.5 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201443](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201443.zip) | 1356 | - | F | Correction to NR5GC test case 9.1.5.2.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201444](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201444.zip) | 1357 | - | F | Correction to NR5GC test case 6.1.1.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201450](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201450.zip) | 1360 | - | B | Addition of NR5GC test case 8.1.3.1.23 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201453](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201453.zip) | 1365 | - | F | Correction to function fl\_NR\_ENDC\_UECapabilityTransfer | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201454](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201454.zip) | 1366 | - | F | Correction to NR5GC test case 7.1.1.1.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201457](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201457.zip) | 1368 | - | B | Addition of NR5GC test case 7.1.1.9.1 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201461](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201461.zip) | 1370 | - | F | Correction to NR5GC RRC test case 8.1.1.4.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201463](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201463.zip) | 1372 | - | F | Corrections for NR5GC CA test cases | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201464](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201464.zip) | 1373 | - | F | Correction for EN-DC RRC test case 8.2.2.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201469](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201469.zip) | 1378 | - | F | Correction to NR MAC test case 7.1.1.1.1a | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201472](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201472.zip) | 1381 | - | F | Correction to NR5GC idle mode test case 6.1.2.14 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201474](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201474.zip) | 1383 | - | F | Corrections to NR5GC RRC test cases 8.1.3.1.x | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201475](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201475.zip) | 1384 | - | F | Correction to NR5GC RRC test case 8.1.1.3.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201477](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201477.zip) | 1386 | - | F | Correction to EN-DC RRC test case 8.2.2.8.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201479](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201479.zip) | 1388 | - | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.4.2.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201481](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201481.zip) | 1390 | - | F | Correction to NR MAC test case 7.1.1.5.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201512](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201512.zip) | 1408 | - | F | Correction to NR5GC test case 7.1.1.2.4 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201513](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201513.zip) | 1409 | - | F | Correction to NR5GC testcase 6.1.2.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201515](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201515.zip) | 1411 | - | B | ENDC FR1: Addition of Inter band CA RRC test case 8.2.4.3.1.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201526](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201526.zip) | 1417 | - | F | Summary of regression errors for NR5GC ATS in 20wk43 IWD | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201527](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201527.zip) | 1418 | - | F | Correction to NR5GC test case 6.2.3.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201528](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201528.zip) | 1419 | - | F | Correction to function f\_NR5GC\_RRC\_Idle\_Steps16\_20 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201530](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201530.zip) | 1420 | - | F | Correction to NR5GC testcase 7.1.2.3.5 and 7.1.2.3.5a | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201531](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201531.zip) | 1421 | - | F | Correction to template cr\_NG\_GMM\_CapAny for 20wk43 IWD | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201532](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201532.zip) | 1422 | - | F | Correction to f\_NR5GC\_PDUSessionEstablishment\_InnerLoop for 20wk43 IWD | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201546](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201546.zip) | 1435 | - | F | Correction for EN-DC test cases in postamble | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201555](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201555.zip) | 1043 | 1 | F | Correction to NR5GC testcase 9.1.5.1.10 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201556](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201556.zip) | 1051 | 1 | F | Correction to 5GMM test case 9.1.5.1.13 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201557](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201557.zip) | 1130 | 1 | F | Correction to 5GMM test case 9.3.1.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201558](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201558.zip) | 1148 | 1 | F | Correction to NR5GC test case 8.1.1.3.4 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201559](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201559.zip) | 1166 | 1 | F | Correction to NR5GC test case 9.1.5.1.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201560](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201560.zip) | 1173 | 1 | B | Addition of NR5GC test case 6.3.1.5 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201561](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201561.zip) | 1184 | 1 | F | Corrections for EN-DC RRC test case 8.2.2.6.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201562](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201562.zip) | 1188 | 1 | F | Correction to 5GMM test case 9.1.8.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201563](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201563.zip) | 1191 | 1 | F | Corrections for NR5GC IRAT test case 8.1.4.2.2.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201564](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201564.zip) | 1200 | 1 | F | Correction for NR5GC IRAT test cases | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201566](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201566.zip) | 1201 | 1 | F | Correction for NR5GC IRAT test cases | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201567](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201567.zip) | 1207 | 1 | F | Correction for 5GMM test case 9.1.5.1.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201568](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201568.zip) | 1210 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.5.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201569](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201569.zip) | 1211 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.5.4 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201570](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201570.zip) | 1237 | 1 | F | Correction to the PDU Session Establishment Accept message | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201571](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201571.zip) | 1239 | 1 | F | Correction to ENDC test case 8.2.2.6.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201572](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201572.zip) | 1251 | 1 | F | Corrections to NR5GC SoR test case 6.3.1.9 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201573](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201573.zip) | 1252 | 1 | F | Correction to the NR5GC testcase 8.1.3.1.12 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201574](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201574.zip) | 1253 | 1 | B | NR5GC FR1: Addition of Intra-band non Contiguous NR RRC CA test case 8.1.3.1.18.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201575](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201575.zip) | 1258 | 1 | B | Addition of NR5GC test case 9.1.8.2 in FR1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201577](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201577.zip) | 1261 | 1 | F | Correction to the ENDC Test cases 8.2.3.16.1 and 8.2.2.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201578](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201578.zip) | 1263 | 1 | F | Correction to the NR5GC EAP common part | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201579](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201579.zip) | 1264 | 1 | F | Correction to NR5GC testcase 9.1.5.1.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201580](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201580.zip) | 1266 | 1 | F | Correction to NR5GC testcase 9.1.3.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201581](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201581.zip) | 1267 | 1 | F | Correction to the NR5GC testcase 10.1.4.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201582](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201582.zip) | 1269 | 1 | B | ENDC FR2: Addition of NR RRC test case 8.2.6.2.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201584](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201584.zip) | 1276 | 1 | F | Correction to NR5GC testcase 9.1.8.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201592](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201592.zip) | 1283 | 1 | F | Correction to the NR5GC testcase 7.1.1.2.3 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201593](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201593.zip) | 1285 | 1 | F | Correction to common functions for ENDC RRC test case 8.2.1.1.1 and NR5GC test case 8.1.5.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201594](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201594.zip) | 1286 | 1 | F | Correction to the NR5GC testcase 8.1.4.1.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201595](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201595.zip) | 1287 | 1 | F | Correction to 5GSM test case 10.1.4.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201596](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201596.zip) | 1288 | 1 | F | Correction to NR5GC idle mode test case 6.1.2.23 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201597](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201597.zip) | 1289 | 1 | F | Correction to NR5GC idle mode test case 6.4.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201601](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201601.zip) | 1293 | 1 | F | Correction ENDC MAC testcase 7.1.1.1.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201603](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201603.zip) | 1294 | 1 | F | Correction to the UE capability transfer testcases 8.2.1.1.1 and 8.1.5.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201604](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201604.zip) | 1297 | 1 | F | Correction to the NR5GC CA testcase 8.1.2.1.5.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201605](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201605.zip) | 1298 | 1 | F | Correction to the NR function f\_Get\_NG\_PDUSessionEstablishmentAccept | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201606](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201606.zip) | 1301 | 1 | F | Correction to ENDC testcase 7.1.2.3.11 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201623](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201623.zip) | 1278 | 1 | B | NR5GC FR1 : Addition of NR RRC CA test case 8.1.4.1.7.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201624](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201624.zip) | 1279 | 1 | B | NR5GC FR1 : Addition of NR RRC CA test case 8.1.4.1.7.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201625](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201625.zip) | 1280 | 1 | F | Correction to ENDC testcase 8.2.6.2.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201627](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201627.zip) | 1292 | 1 | B | EN-DC FR1 :Addition of RRC test case 8.2.4.3.1.1 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201628](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201628.zip) | 1299 | 1 | F | Correction to NR RLC testcases 7.1.2.3.7 and 7.1.2.3.8 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201636](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201636.zip) | 1235 | 1 | F | Correction to NR5GC testcase 10.1.3.2 | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201646](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201646.zip) | 1452 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 15.10.0 |
| 2020-12 | RAN#90 | R5-206369 | 1362 | 1 | - | 5G Test Models updates | 15.10.0 |
| 2020-12 | RAN#90 | [R5s201387](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2020/Docs/R5s201387.zip) | 1334 | - | F | Rel-16 Sep'20 baseline upgrade for 5GS Test Suites | 16.0.0 |
| 2021-03 | RAN#91 | R5-210355 | 1570 | - | F | Guidelines on test execution for bands n14 and n53 | 16.1.0 |
| 2021-03 | RAN#91 | R5-211417 | 1568 | 1 | F | 5G Test Models updates | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210042](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210042.zip) | 1484 | - | F | Correction for NR5GC idle mode test case 6.4.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210043](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210043.zip) | 1485 | - | F | Correction for NR5GC IRAT test cases 6.2.2.1 and 6.2.3.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210044](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210044.zip) | 1486 | - | F | Correction for NR5GC RRC test case 8.1.3.3.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210049](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210049.zip) | 1491 | - | F | Correction for NR5GC idle mode test case 6.3.1.7 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210051](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210051.zip) | 1493 | - | F | Correction for NR RRC test case 8.1.1.2.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210057](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210057.zip) | 1497 | - | F | Correction for NR5GC idle mode test case 6.2.1.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210058](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210058.zip) | 1498 | - | F | Correction for NR5GC RRC test case 8.1.4.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210059](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210059.zip) | 1499 | - | F | Correction for NR RRC Deregistration test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210065](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210065.zip) | 1502 | - | F | Correction to ENDC testcase 7.1.3.5.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210066](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210066.zip) | 1503 | - | B | Addition of NR5GC test case 7.1.1.7.1.1 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210068](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210068.zip) | 1504 | - | B | Addition of NR5GC test case 7.1.1.7.1.2 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210070](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210070.zip) | 1505 | - | B | Addition of ENDC test case 7.1.1.7.1.1 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210072](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210072.zip) | 1506 | - | F | Correction to NR5GC test case 6.1.2.19 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210073](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210073.zip) | 1507 | - | F | Correction to function f\_NR5GC\_ModifyPDUSession\_AddVoice | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210074](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210074.zip) | 1508 | - | F | Correction to f\_BuildDefaultQoSRules | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210075](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210075.zip) | 1509 | - | F | Correction to CA configurations for CA\_n260G | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210077](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210077.zip) | 1511 | - | F | Correction for NR5GC IRAT test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210078](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210078.zip) | 1512 | - | F | Correction for 5GMM test case 9.3.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210079](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210079.zip) | 1513 | - | F | Correction for NR5GC RRC CA test cases 8.1.4.1.7.1 and 8.1.4.1.7.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210082](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210082.zip) | 1516 | - | F | Correction to NR PDCP test case 7.1.3.5.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210083](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210083.zip) | 1517 | - | F | Corrections for ENDC RRC test case 8.2.2.3.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210084](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210084.zip) | 1518 | - | F | Correction for NR5GC idle extension procedure | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210085](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210085.zip) | 1519 | - | F | Corrections for NR5GC idle mode test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210087](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210087.zip) | 1521 | - | F | Correction to NR MAC test case 7.1.1.3.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210088](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210088.zip) | 1522 | - | F | Correction to NR MAC test case 7.1.1.1.1a | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210089](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210089.zip) | 1523 | - | F | Correction to ENDC RRC test case 8.2.4.3.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210092](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210092.zip) | 1526 | - | F | Correction to NR5GC idle mode test case 6.4.2.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210093](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210093.zip) | 1527 | - | F | Corrections to NR RLC test case 7.1.2.3.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210094](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210094.zip) | 1528 | - | F | Correction to NR idle mode test case 6.4.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210103](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210103.zip) | 1531 | - | F | Correction to f\_EUTRA38\_TAUReqFromN1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210104](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210104.zip) | 1532 | - | F | Correction to function f\_NR\_GetHighestBandwidthFrequency | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210110](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210110.zip) | 1538 | - | F | Correction for 5GSM test case 10.1.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210111](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210111.zip) | 1539 | - | F | Correction to NR5GC testcase 9.1.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210116](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210116.zip) | 1543 | - | F | Correction for NR5GC multilayer test case 11.3.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210123](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210123.zip) | 1545 | - | F | Correction to NR5GC test case 9.1.5.1.8 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210128](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210128.zip) | 1546 | - | F | Correction to ENDC test case 8.2.2.3.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210129](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210129.zip) | 1547 | - | F | Correction to function f\_NR\_GetSSB\_ToMeasure | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210130](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210130.zip) | 1548 | - | F | Correction function f\_NG\_GetDNN | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210134](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210134.zip) | 1550 | - | F | Correction to NR5GC testcase 9.1.5.1.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210135](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210135.zip) | 1551 | - | F | Correction to NR5GC test case 8.1.4.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210138](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210138.zip) | 1552 | - | F | Correction to NR5GC test case 7.1.1.9.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210143](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210143.zip) | 1554 | - | F | Correction for NR5GC RRC PWS test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210145](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210145.zip) | 1555 | - | F | Correction to NR5GC test case 9.1.5.1.9 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210147](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210147.zip) | 1557 | - | F | Correction to NR5GC test case 7.1.1.2.1 and 7.1.1.3.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210148](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210148.zip) | 1558 | - | F | Correction to function f\_NR5GC\_PDUSessionEstablishment\_InnerLoop | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210153](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210153.zip) | 1560 | - | F | Correction to EAP authentication calculation | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210157](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210157.zip) | 1564 | - | F | Correction for NR5GC IRAT test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210159](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210159.zip) | 1565 | - | F | Correction to NR5GC testcase 9.1.7.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210160](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210160.zip) | 1566 | - | F | Correction to ENDC test case 8.2.4.3.1.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210161](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210161.zip) | 1567 | - | F | Correction function f\_EUTRA38\_MultiPDN\_GetAPN | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210162](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210162.zip) | 1569 | - | B | Addition of NR5GC test case 8.1.4.1.5 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210164](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210164.zip) | 1571 | - | F | Correction to function f\_NR5GC\_RRC\_Idle\_Steps5\_9\_AKA | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210166](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210166.zip) | 1572 | - | F | Correction to NR5GC testcase 9.1.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210167](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210167.zip) | 1573 | - | F | Correction to NR5GC test case 8.1.1.3.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210168](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210168.zip) | 1574 | - | F | Correction to NR5GC test case 6.1.1.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210171](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210171.zip) | 1223 | 1 | F | Correction to NR testcase 7.1.2.3.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210172](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210172.zip) | 1277 | 1 | F | Correction to function f\_NR\_RRCReconfigExistingDRBs | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210173](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210173.zip) | 1305 | 1 | B | EN-DC FR1 : Addition of RRC test case 8.2.2.3.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210175](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210175.zip) | 1321 | 2 | F | Correction to function f\_NR5GC\_PDUSessionEstablishment | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210176](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210176.zip) | 1340 | 1 | F | Correction to NR5GC testcase 9.3.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210178](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210178.zip) | 1367 | 1 | B | Addition of NR5GC test case 6.3.1.7 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210179](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210179.zip) | 1374 | 1 | F | Correction for NR5GC IRAT test cases 8.1.1.3.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210180](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210180.zip) | 1375 | 1 | F | Correction to NR5GC IRAT test case 6.2.3.9 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210181](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210181.zip) | 1376 | 1 | F | Corrections for NR5GC IRAT test case 8.1.4.2.2.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210182](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210182.zip) | 1379 | 1 | F | Correction to NR5GC IRAT test case 6.2.1.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210183](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210183.zip) | 1380 | 1 | F | Correction to EN-DC RRC test case 8.2.4.1.1.x | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210184](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210184.zip) | 1392 | 1 | F | Correction to 5GMM test case 9.1.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210185](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210185.zip) | 1393 | 1 | F | Correction to NR PDCP test case 7.1.3.4.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210186](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210186.zip) | 1395 | 1 | F | Correction to 5GMM test case 9.1.5.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210187](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210187.zip) | 1577 | - | F | Correction to ENDC testcase 8.2.2.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210188](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210188.zip) | 1396 | 1 | F | Correction to NR RLC test case 7.1.2.3.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210190](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210190.zip) | 1398 | 1 | F | Correction to 5GMM test case 9.1.7.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210191](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210191.zip) | 1399 | 1 | F | Correction for NR MAC test case 7.1.1.5.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210192](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210192.zip) | 1401 | 1 | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.5.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210193](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210193.zip) | 1403 | 1 | B | EN-DC FR2 : Addition of NR MAC test case 7.1.1.5.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210194](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210194.zip) | 1405 | 1 | F | Correction to NR5GC SDAP test cases and RRC test case 8.1.5.4.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210195](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210195.zip) | 1406 | 1 | F | Correction to NR5GC idle more test case 6.3.1.7 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210196](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210196.zip) | 1410 | 1 | F | Correction to ENDC RLC testcase 7.1.2.3.6 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210197](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210197.zip) | 1412 | 1 | F | Correction to NR MAC test case 7.1.1.5.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210198](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210198.zip) | 1413 | 1 | F | Correction for template cs\_NR\_SS\_SpCellConfig | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210199](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210199.zip) | 1415 | 1 | B | Addition of NR5GC test case 7.1.1.10.1 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210200](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210200.zip) | 1423 | 1 | F | Correction for NR5GC IRAT test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210201](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210201.zip) | 1425 | 1 | F | Correction for NR MAC test case 7.1.1.5.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210202](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210202.zip) | 1426 | 1 | F | Correction for 5GMM test case 9.1.4.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210203](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210203.zip) | 1434 | 1 | F | Corrections for NR PDCP integrity and ciphering test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210204](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210204.zip) | 1438 | 1 | F | Correction to f\_Check\_NG\_PDUSessionModificationReq in 20wk43 IWD | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210205](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210205.zip) | 1439 | 1 | F | Correction to NR5GC testcases 10.1.6.1 and 10.1.6.2 for 20wk43 IWD | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210206](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210206.zip) | 1441 | 1 | F | Correction to function f\_NR\_InitAS\_KeyChaining\_SKgNB | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210209](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210209.zip) | 1442 | 1 | F | Correction to NR5GC test case 9.1.5.1.9 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210210](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210210.zip) | 1445 | 1 | F | Correction to NR5GC test case 9.1.5.1.12 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210211](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210211.zip) | 1446 | 1 | F | Correction to NR MAC test case 7.1.1.3.3 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210221](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210221.zip) | 1449 | 1 | B | Addition of NR5GC test case 7.1.1.5.5 in FR1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210222](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210222.zip) | 1451 | 1 | F | Correction to NR PDCP integrity test cases | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210226](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210226.zip) | 1453 | 1 | F | Correction to NR5GC test case 8.1.4.2.2.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210230](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210230.zip) | 1454 | 1 | F | Correction to NR5GC test case 10.1.3.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210234](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210234.zip) | 1580 | - | F | Correction to function f\_Get\_NG\_DLNASTransport | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210235](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210235.zip) | 1581 | - | F | Correction to function fl\_TC\_9\_1\_1\_3\_6\_Body | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210238](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210238.zip) | 1583 | - | F | Correction to ENDC test case 10.2.2.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210243](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210243.zip) | 1588 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.1.2.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210253](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210253.zip) | 1589 | - | F | Correction to function f\_NR5GC\_CellInfo\_SetSIB3\_start | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210254](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210254.zip) | 1459 | 1 | F | Correction to function f\_NR\_TestcaseIsL2Testcase in 20wk50 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210255](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210255.zip) | 1460 | 1 | F | Correction to function f\_GetPDN\_DNNTypeFromAPN in 20wk50 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210256](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210256.zip) | 1461 | 1 | F | Correction to NR5GC IRAT test case 6.2.1.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210257](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210257.zip) | 1472 | 1 | F | Correction to NR5GC idle mode test case 6.3.1.9 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210258](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210258.zip) | 1475 | 1 | F | Correction to NR MAC testcase 7.1.1.1.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210259](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210259.zip) | 1476 | 1 | F | Correction for NR RLC test case 7.1.2.3.8 in EN-DC | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210260](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210260.zip) | 1477 | 1 | F | Correction to ENDC Integrity protection test cases 7.1.3.2.x | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210261](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210261.zip) | 1478 | 1 | F | Correction for NR PDCP test case 7.1.3.4.1 in EN-DC | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210263](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210263.zip) | 1590 | - | F | Correction to cads\_NR\_CellConfig\_C\_RNTI\_REQ | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210265](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210265.zip) | 1591 | - | F | Correction to f\_EUTRA38\_BuildEUTRA\_RadioResourceConfigDedicated | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210267](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210267.zip) | 1592 | - | F | Correction to f\_NG\_GetPDNAddress | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210271](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210271.zip) | 1594 | - | F | Correction to NR5GC test case 8.1.3.1.23 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210275](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210275.zip) | 1595 | - | F | Correction to NR PDCP test 7.1.3.5.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210276](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210276.zip) | 1596 | - | F | Correction to NR5GC testcase 6.2.3.4 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210277](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210277.zip) | 1597 | - | F | Correction to the function f\_ReconfigureDRBs | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210282](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210282.zip) | 1598 | - | F | Correction to NR5GC test case 7.1.3.4.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210283](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210283.zip) | 1599 | - | B | EN-DC FR1 : Addition of EN-DC RRC test case 8.2.2.2.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210312](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210312.zip) | 1443 | 1 | F | Correction to NR5GC test case 8.1.3.2.2 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210314](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210314.zip) | 1462 | 1 | F | Correction to NR5GC IRAT test case 8.1.4.2.1.1 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210316](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210316.zip) | 1457 | 1 | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.4.2.5 | 16.1.0 |
| 2021-03 | RAN#91 | [R5s210319](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210319.zip) | 1614 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 16.1.0 |
| 2021-06 | RAN#92 | R5-213516 | 1717 | 1 | F | 5G Test Models updates | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210389](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210389.zip) | 1646 | - | F | Correction for NR5GC CA inter-cell handover procedure | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210390](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210390.zip) | 1647 | - | B | Addition of NR5GC Idle mode test case 6.1.1.6 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210395](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210395.zip) | 1648 | - | F | Correction to the function f\_NR\_PDCP\_SDU\_GetList | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210396](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210396.zip) | 1649 | - | F | Correction to cads\_NR\_UplinkBWP\_ConfigCommon\_REQ | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210402](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210402.zip) | 1650 | - | F | Correction for NR5GC IRAT test case 8.1.4.2.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210403](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210403.zip) | 1651 | - | F | Correction for NR 5GC IRAT test case 6.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210404](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210404.zip) | 1652 | - | F | Correction for NR system information modification functions | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210405](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210405.zip) | 1653 | - | F | Correction for NR idle mode test case 6.3.1.9 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210406](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210406.zip) | 1654 | - | F | Correction for NR5GC RRC test case 8.1.1.3.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210407](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210407.zip) | 1655 | - | F | Correction for NR5GC common function | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210408](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210408.zip) | 1656 | - | F | Corrections for NR5GC IRAT test cases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210409](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210409.zip) | 1657 | - | F | Correction for NR idle mode test case 6.4.3.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210410](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210410.zip) | 1658 | - | F | Correction for NR5GC IRAT test case 6.2.1.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210412](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210412.zip) | 1660 | - | F | Correction for NR5GC IRAT test case 8.1.4.2.2.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210414](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210414.zip) | 1661 | - | F | Re-verification of NR5GC IRAT test case 11.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210417](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210417.zip) | 1663 | - | F | Correction to function f\_GetPDN\_DNNTypeFromAPN | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210422](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210422.zip) | 1664 | - | F | Correction to a\_ApplicationCtrl | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210426](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210426.zip) | 1666 | - | F | Correction for NR MAC test case 7.1.1.2.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210427](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210427.zip) | 1667 | - | F | Correction for NR MAC test case 7.1.1.2.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210428](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210428.zip) | 1668 | - | F | Correction for NR idle mode test case 6.1.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210431](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210431.zip) | 1670 | - | F | Correction for 5GMM test case 9.1.5.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210432](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210432.zip) | 1671 | - | F | Correction for 5GMMtest cases 9.1.8.1 and 9.1.8.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210433](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210433.zip) | 1672 | - | F | Correction for NR idle mode test case 6.2.3.11 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210434](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210434.zip) | 1673 | - | F | Correction for NR MAC test cases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210435](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210435.zip) | 1674 | - | F | Correction for NR5GC measurement test cases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210438](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210438.zip) | 1676 | - | F | Correction for NR MAC test case 7.1.1.10.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210439](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210439.zip) | 1677 | - | F | Correction for EN-DC RRC test case 8.2.2.3.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210440](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210440.zip) | 1678 | - | F | Correction for NR idle mode test case 6.1.2.8 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210444](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210444.zip) | 1679 | - | F | Rel-16 Mar'21 partial baseline upgrade for 5GS TTCN-3 Test Suites | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210445](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210445.zip) | 1680 | - | F | Correction for NR idle mode test case 6.2.3.6 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210446](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210446.zip) | 1681 | - | F | Correction for 5GMM test case 9.3.1.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210449](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210449.zip) | 1684 | - | F | Correction to NR idle mode test case 6.1.1.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210453](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210453.zip) | 1686 | - | F | Corrections for EN-DC RRC test case 8.2.4.3.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210454](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210454.zip) | 1687 | - | F | Correction for NR idle mode test case 6.4.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210456](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210456.zip) | 1689 | - | B | Addition of NR5GC test case 8.1.5.6.1 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210463](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210463.zip) | 1692 | - | F | Correction to NR5GC testcase 7.1.4.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210471](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210471.zip) | 1694 | - | F | Correction to function fl\_QoS\_MaximumBitRateExtd\_2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210475](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210475.zip) | 1696 | - | F | Re-verification of NR5GC IRAT test case 11.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210476](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210476.zip) | 1697 | - | F | Correction to NR testcases 7.1.3.1.2.NR5GC and 7.1.3.1.2.ENDC | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210478](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210478.zip) | 1699 | - | B | Addition of NR5GC EPS fall back test case 11.1.4 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210480](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210480.zip) | 1700 | - | F | Correction to functions f\_NR5GC\_ModifyPDUSession\_AddVoice and f\_NR5GC\_ModifyPDUSession\_RemoveIMSVoice | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210483](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210483.zip) | 1702 | - | F | Correction to function f\_TC\_7\_1\_1\_3\_3\_NR5GC | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210485](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210485.zip) | 1704 | - | F | Correction to NR5GC testcase 6.3.1.5 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210501](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210501.zip) | 1707 | - | F | Correction to the NR5GC Testcase 6.4.2.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210503](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210503.zip) | 1708 | - | B | NR5GC FR1 : Addition of 5GMM test case 9.1.5.1.15 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210509](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210509.zip) | 1710 | - | F | Correction to the UE capability transfer testcases 8.2.1.1.1 and 8.1.5.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210520](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210520.zip) | 1715 | - | F | Correction to NR5GC testcase 6.2.3.8 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210523](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210523.zip) | 1718 | - | F | Correction to NR5GC RRC test case 8.1.3.1.18.x | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210524](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210524.zip) | 1719 | - | F | Correction to NR idle mode test case 6.1.2.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210528](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210528.zip) | 1088 | 1 | B | EN-DC FR1 : Addition of NR RLC test case 7.1.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210529](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210529.zip) | 1259 | 1 | B | EN-DC FR2 : Addition of NR RLC test case 7.1.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210530](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210530.zip) | 1295 | 1 | B | Addition of NR5GC test case 7.1.2.3.4 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210531](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210531.zip) | 1456 | 1 | F | Correction to NR5GC test case 9.1.5.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210532](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210532.zip) | 1488 | 1 | F | Correction to NR MAC test case 7.1.1.1.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210533](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210533.zip) | 1494 | 1 | F | EN-DC FR1 : Re-verification of NR RLC test case 7.1.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210534](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210534.zip) | 1495 | 1 | F | EN-DC FR2 : Re-verification of NR RLC test case 7.1.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210535](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210535.zip) | 1524 | 1 | F | Correction to NR MAC test case 7.1.1.10.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210536](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210536.zip) | 1525 | 1 | F | Correction to NR MAC test case 7.1.1.1.6 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210537](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210537.zip) | 1536 | 1 | F | Corrections for NR MAC test cases 7.1.1.2.3 and 7.1.1.2.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210538](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210538.zip) | 1544 | 1 | F | NR5GC FR1 : Re-verification of NR RLC test case 7.1.2.3.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210539](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210539.zip) | 1578 | 1 | F | Correction NR5GC test case 6.1.2.14 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210540](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210540.zip) | 1582 | 1 | F | Correction to NR5GC testcase 6.3.1.7 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210541](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210541.zip) | 1587 | 1 | F | Correction for NR common function f\_NR\_InitDL\_BWPs() | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210543](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210543.zip) | 1593 | 1 | F | Encoding enhancement for better TTCN logging | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210547](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210547.zip) | 1604 | 1 | F | Correction to function f\_MTC\_IMS\_CreateMapAndConnectPTCs\_NR5GC | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210548](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210548.zip) | 1607 | 1 | F | Correction to the Mapped EPS Parameter | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210550](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210550.zip) | 1611 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.3.9 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210551](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210551.zip) | 1612 | 1 | F | Correction to NR5GC test case 8.1.1.4.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210552](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210552.zip) | 1613 | 1 | F | Correction to function f\_NR\_RRC\_SetupRequest\_Common | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210556](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210556.zip) | 1619 | 1 | B | Addition of NR5GC test case 7.1.1.3.8.1 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210557](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210557.zip) | 1620 | 1 | B | Addition of NR5GC test case 7.1.1.3.8.2 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210558](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210558.zip) | 1621 | 1 | F | Correction to NR5GC test case 6.3.1.5 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210560](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210560.zip) | 1624 | 1 | B | Addition of NR5GC test case 8.1.2.1.4 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210561](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210561.zip) | 1625 | 1 | B | Addition of NR5GC CA test case 8.1.4.1.8.1 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210562](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210562.zip) | 1626 | 1 | B | Addition of NR5GC CA test case 8.1.4.1.8.2 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210564](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210564.zip) | 1629 | 1 | B | NR5GC FR1 : Addition of NR IRAT test case 6.2.3.11 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210565](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210565.zip) | 1631 | 1 | F | Correction for 5GMM test case 9.3.1.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210566](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210566.zip) | 1633 | 1 | F | Correction to function fl\_NR\_InitialiseSiScheduling | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210567](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210567.zip) | 1634 | 1 | F | Correction to NR5GC testcase 9.1.5.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210568](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210568.zip) | 1635 | 2 | F | Correction for function f\_NR5GC\_ModifyPDUSession\_AddVoice() | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210570](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210570.zip) | 1638 | 1 | F | Summary of regression errors in 21wk12 TTCN for NR testcases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210571](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210571.zip) | 1639 | 1 | F | Correction to Multiple ENDC Measurement testcases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210572](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210572.zip) | 1640 | 1 | F | Correction to NR5GC testcase 9.1.5.2.8 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210574](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210574.zip) | 1724 | - | F | Correction for NR5GC RRC test case 8.1.4.1.8.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210575](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210575.zip) | 1725 | - | F | Correction to NR Idle Mode test case 6.4.2.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210576](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210576.zip) | 1726 | - | F | Correction to the NR5GC Testcase 6.3.1.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210577](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210577.zip) | 1727 | - | F | Correction to NR5GC testcase 9.1.5.1.3 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210578](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210578.zip) | 1729 | - | F | Correction to the function f\_NR\_SendRRCResume\_Def | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210581](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210581.zip) | 1732 | - | F | Correction to f\_TC\_6\_4\_2\_1\_NR5GC\_TestBody | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210582](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210582.zip) | 1733 | - | F | Correction to function f\_TC\_7\_1\_1\_5\_5\_NR\_TestBody | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210594](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210594.zip) | 1738 | - | F | Correction to NR5GC MAC DRX test cases | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210595](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210595.zip) | 1739 | - | F | Correction to NR5GC RRC test case 8.1.1.2.4 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210598](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210598.zip) | 1742 | - | F | Correction to the function f\_GetTestcaseAttrib\_EarlyContentionResolution | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210602](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210602.zip) | 1745 | - | F | Correction for NR5GC RRC test case 8.1.3.3.2 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210605](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210605.zip) | 1747 | - | F | Correction to the testcase 6.4.2.2.NR5GC | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210638](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210638.zip) | 1559 | 1 | B | Addition of NR5GC EPS fall back test case 11.1.1 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210639](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210639.zip) | 1609 | 1 | B | Addition of NR5GC EPS fall back test case 11.1.3 in FR1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210640](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210640.zip) | 1623 | 1 | F | Correction to ENDC test case 10.2.2.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210641](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210641.zip) | 1636 | 1 | F | Correction to NR5GC testcase 8.1.5.4.1 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210643](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210643.zip) | 1605 | 1 | F | Correction to the function f\_NR\_CheckDataPath\_CA | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210646](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210646.zip) | 1628 | 1 | B | NR5GC FR1 : Addition of NR IRAT test case 6.2.3.10 | 16.2.0 |
| 2021-06 | RAN#92 | [R5s210648](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210648.zip) | 1764 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 16.2.0 |
| 2021-09 | RAN#93 | R5-214620 | 1856 | - | F | 5G Rel-15 Test Models updates | 16.3.0 |
| 2021-09 | RAN#93 | R5-214621 | 1857 | - | F | Addition of NR/UTRAN Inter-RAT Test Model | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210716](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210716.zip) | 1790 | - | B | Addition of NR-DC test case 8.2.2.4.2 in FR1+FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210719](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210719.zip) | 1792 | - | F | Correction for NR PDCP test case 7.1.3.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210722](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210722.zip) | 1794 | - | F | Correction for NR5GC multilayer test case 11.1.4 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210725](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210725.zip) | 1797 | - | F | Correction for NR MAC test case 7.1.1.2.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210727](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210727.zip) | 1798 | - | F | Correction for NR MAC CA test cases 7.1.1.7.1.x | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210729](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210729.zip) | 1800 | - | F | Correction for some NR5GC test cases with IMS enabled | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210730](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210730.zip) | 1801 | - | F | Correction for EN-DC RRC test case 8.2.2.2.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210731](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210731.zip) | 1802 | - | F | Correction for NR5GC multilayer test case 11.3.7 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210735](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210735.zip) | 1803 | - | F | Correction for ENDC RRC test case 8.2.6.2.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210736](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210736.zip) | 1804 | - | F | Correction for NR idle mode test case 6.1.2.8 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210737](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210737.zip) | 1805 | - | B | Addition of NR5GC test case 9.1.2.1 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210739](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210739.zip) | 1806 | - | B | Addition of NR5GC test case 9.1.2.2 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210741](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210741.zip) | 1807 | - | B | Addition of NR5GC test case 9.1.2.3 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210743](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210743.zip) | 1808 | - | B | Addition of NR5GC test case 9.1.2.4 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210745](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210745.zip) | 1809 | - | B | Addition of NR5GC test case 9.1.2.5 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210747](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210747.zip) | 1810 | - | B | Addition of NR5GC test case 9.1.2.6 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210749](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210749.zip) | 1811 | - | B | Addition of NR5GC test case 9.1.2.7 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210751](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210751.zip) | 1812 | - | B | Addition of NR5GC test case 9.1.2.8 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210753](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210753.zip) | 1813 | - | B | Addition of NR5GC test case 9.1.3.1 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210757](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210757.zip) | 1815 | - | F | Correction to NR5GC multilayer test case 11.3.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210758](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210758.zip) | 1816 | - | F | Correction to EN-DC RRC CA test case 8.2.4.3.1.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210760](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210760.zip) | 1817 | - | B | Addition of NR CA test case 8.1.2.1.5.3 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210763](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210763.zip) | 1818 | - | B | Addition of NR5GC test case 9.1.1.1 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210765](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210765.zip) | 1819 | - | B | Addition of NR5GC test case 9.1.1.2 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210770](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210770.zip) | 1822 | - | F | Correction to NR5GC testcase 11.4.6 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210771](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210771.zip) | 1823 | - | F | Correction to function f\_NR5GC\_EmergencyCallPDUSession | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210774](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210774.zip) | 1825 | - | B | Addition of NR-DC test case 8.2.5.1.2 in FR1+FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210776](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210776.zip) | 1826 | - | B | Addition of NR-DC test case 8.2.5.2.2 in FR1+FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210778](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210778.zip) | 1827 | - | F | Correction to NR RLC test case 7.1.2.3.5 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210786](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210786.zip) | 1830 | - | F | Correction to NG NAS template | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210787](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210787.zip) | 1831 | - | F | Correction for NR PDCP test case 7.1.3.5.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210797](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210797.zip) | 1834 | - | F | Correction to NR test cases 9.1.5.2.2, 9.1.5.1.1 and 11.3.9 for guard timer extension | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210804](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210804.zip) | 1838 | - | F | Correction to NR5GC testcase 11.3.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210808](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210808.zip) | 1841 | - | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.4 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210810](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210810.zip) | 1842 | - | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.8 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210816](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210816.zip) | 1844 | - | B | Addition of NR5GC testcase 9.1.5.2.8 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210818](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210818.zip) | 1845 | - | B | Addition of NR5GC testcase 9.1.5.2.7 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210820](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210820.zip) | 1846 | - | F | Correction to NR5GC testcase 9.1.5.1.10 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210821](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210821.zip) | 1847 | - | B | Addition of NR5GC testcase 9.1.5.2.2 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210823](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210823.zip) | 1848 | - | B | Addition of NR5GC testcase 9.1.1.4 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210826](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210826.zip) | 1849 | - | B | Addition of NR5GC testcase 9.1.5.1.5 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210828](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210828.zip) | 1850 | - | B | Addition of NR5GC testcase 10.1.1.1 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210830](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210830.zip) | 1851 | - | B | Addition of NR5GC testcase 6.1.2.15 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210832](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210832.zip) | 1852 | - | B | Addition of NR5GC testcase 9.1.5.1.6 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210836](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210836.zip) | 1854 | - | B | Addition of NR5GC testcase 9.1.5.1.15 in FR2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210838](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210838.zip) | 1855 | - | F | Correction to NR test case 7.1.3.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210842](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210842.zip) | 1860 | - | B | Addition of NR5GC test case 8.1.5.8.2.1 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210844](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210844.zip) | 1861 | - | B | Addition of NR5GC test case 8.1.5.8.2.2 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210846](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210846.zip) | 1862 | - | F | Correction to ENDC testcases 8.2.4.3.1.1 and 8.2.4.3.1.3 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210847](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210847.zip) | 1863 | - | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210855](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210855.zip) | 1864 | - | B | ENDC FR2 : Addition of ENDC NR MAC test case 7.1.1.7.1.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210857](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210857.zip) | 1865 | - | B | ENDC FR1 : Addition of ENDC NR MAC test case 7.1.1.7.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210860](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210860.zip) | 1867 | - | F | Correction to NR testcase 7.1.1.3.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210862](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210862.zip) | 1869 | - | F | Correction to NR5GC testcase 7.1.1.3.5 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210865](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210865.zip) | 1871 | - | F | Correction to NR5GC testcase 7.1.1.7.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210872](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210872.zip) | 1877 | - | F | Correction to NR testcase 8.1.5.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210873](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210873.zip) | 1878 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.6.1.4.4 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210883](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210883.zip) | 1881 | - | F | Correction to ENDC MAC testcase 7.1.1.3.7 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210886](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210886.zip) | 1884 | - | F | Correction to NR testcases 7.1.2.3.5 and 7.1.2.3.5a | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210891](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210891.zip) | 1886 | - | F | Corrections for NR-DC test cases | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210892](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210892.zip) | 1887 | - | F | Correction of NR5GC test case 6.4.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210893](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210893.zip) | 1888 | - | F | Correction to NR5GC testcase 7.1.1.7.1.1 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210894](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210894.zip) | 1889 | - | B | EN-DC FR1 : Addition of NR MAC test case 7.1.1.3.8.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210896](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210896.zip) | 1890 | - | F | Correction to NR5GC testcase 7.1.1.9.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210898](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210898.zip) | 1644 | 1 | F | Correction for IMS voice call procedures | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210900](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210900.zip) | 1675 | 1 | F | Correction for 5GSM test case 10.1.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210901](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210901.zip) | 1714 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.3 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210902](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210902.zip) | 1721 | 1 | F | Correction to NR handover function | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210903](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210903.zip) | 1730 | 1 | F | Correction to NR testcase 7.1.3.1.2 (ENDC and NR5GC) | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210904](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210904.zip) | 1731 | 1 | F | Correction for NR idle mode test case 6.2.3.5 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210905](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210905.zip) | 1740 | 1 | F | Correction for NR idle mode test case 6.1.1.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210906](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210906.zip) | 1746 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.7 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210908](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210908.zip) | 1748 | 1 | F | Correction to NR5GC testcase 11.3.4 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210909](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210909.zip) | 1749 | 1 | F | Correction to NR5GC testcase 9.1.5.1.3 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210911](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210911.zip) | 1751 | 1 | F | Correction to NR5GC testcase 7.1.1.5.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210912](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210912.zip) | 1752 | 1 | F | Correction to ENDC test case 8.2.2.6.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210913](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210913.zip) | 1753 | 1 | F | Correction to the NR5GC Testcase 6.3.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210914](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210914.zip) | 1754 | 1 | F | Corrections for NR MAC testcase 7.1.1.1.1a | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210916](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210916.zip) | 1755 | 1 | B | Addition of NR5GC test case 11.1.7 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210917](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210917.zip) | 1756 | 1 | B | Addition of NR5GC test case 11.3.2 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210921](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210921.zip) | 1759 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.3.8 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210924](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210924.zip) | 1761 | 1 | B | Addition of NR5GC multilayer test case 11.4.6 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210925](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210925.zip) | 1763 | 1 | F | Corrections for ENDC testcase 8.2.2.2.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210929](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210929.zip) | 1767 | 1 | F | Corrections for NR5GC SOR TCs | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210930](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210930.zip) | 1771 | 1 | F | Corrections for NR MAC testcase 7.1.1.7.1.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210931](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210931.zip) | 1773 | 1 | F | Correction to function fl\_NR5GC\_QoSFlowsLength | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210932](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210932.zip) | 1775 | 1 | F | Correction to NR test cases 7.1.3.5.1 and 7.1.3.5.4 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210933](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210933.zip) | 1776 | 1 | F | Correction to NR test cases 7.1.2.3.3, 7.1.2.3.4 ,7.1.3.1.1 and 7.1.3.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210936](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210936.zip) | 1777 | 1 | F | Correction to function f\_TC\_7\_1\_1\_5\_5\_NR\_TestBody | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210938](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210938.zip) | 1778 | 1 | F | Correction to function f\_NR\_CheckDataPath\_CA | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210939](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210939.zip) | 1781 | 1 | F | Correction for NR5GC IRAT test cases | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210941](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210941.zip) | 1784 | 1 | F | Corrections for NR MAC testcase 7.1.1.1.2 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210946](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210946.zip) | 1787 | 1 | F | Correction for NR5GC RRC test cases 8.1.4.1.8.x | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210954](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210954.zip) | 1665 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.3.7 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210958](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210958.zip) | 1783 | 1 | F | Correction for NR5GC RRC test case 8.1.1.4.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s210960](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s210960.zip) | 1789 | 1 | F | Correction for NR5GC RRC test case 8.1.1.2.1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s211172](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211172.zip) | 1765 | 1 | F | Correction to NR5GC testcase 11.3.9 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s211173](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211173.zip) | 1772 | 1 | B | Addition of NR5GC test case 11.3.6 in FR1 | 16.3.0 |
| 2021-09 | RAN#93 | [R5s211174](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211174.zip) | 1774 | 1 | F | Correction to NR5GC IRAT functions | 16.3.0 |
| 2021-09 | RAN#93 | [R5s211175](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211175.zip) | 2003 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 16.3.0 |
| 2021-09 | RAN#93 | R5-215725 | 1866 | 1 | B | Introduction of n24 | 17.0.0 |
| 2021-12 | RAN#94 | R5-217830 | 2164 | 1 | F | 5G Rel-15 Test Models updates | 17.1.0 |
| 2021-12 | RAN#94 | R5-217831 | 2167 | 1 | F | Correction to Switch/Power off procedure after EMERGENCY CALL RELEASED in RRC\_CONNECTED | 17.1.0 |
| 2021-12 | RAN#94 | R5-217896 | 2165 | 1 | F | 5G V2X: Initial Test Model | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211262](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211262.zip) | 2026 | - | F | Correction to function f\_NR\_UE\_DeRegisterOnSwitchOff | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211263](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211263.zip) | 2027 | - | F | Correction to NR testcase 9.1.5.1.15 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211280](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211280.zip) | 2042 | - | F | Correction to function f\_NR5GC\_IRAT\_S1ToN1\_SessionModification | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211281](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211281.zip) | 2043 | - | F | Correction to NR test case 8.1.6.1.4.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211298](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211298.zip) | 2059 | - | F | Correction for NR idle mode test case 6.3.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211299](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211299.zip) | 2060 | - | F | Correction for some NR5GC test cases with IMS enabled | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211301](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211301.zip) | 2062 | - | F | Correction for EN-DC RRC test case 8.2.3.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211302](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211302.zip) | 2063 | - | F | Correction for MAC test cases 7.1.1.7.1.x | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211303](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211303.zip) | 2064 | - | F | Correction for NR5GC RRC PWS test cases | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211306](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211306.zip) | 2067 | - | F | Correction to NR testcase 11.4.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211308](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211308.zip) | 2068 | - | F | Correction to NR testcase 8.1.2.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211309](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211309.zip) | 2069 | - | B | Addition of EPS Fallback test case 11.1.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211312](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211312.zip) | 2071 | - | B | NR5GC FR2: Addition of NR5GC test case 9.1.5.1.3a | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211314](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211314.zip) | 2072 | - | B | NR5GC FR2: Addition of NR5GC test case 9.1.5.1.9 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211316](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211316.zip) | 2073 | - | B | NR5GC FR2: Addition of NR5GC test case 9.1.6.1.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211318](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211318.zip) | 2074 | - | B | NR5GC FR2: Addition of NR5GC test case 9.1.7.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211321](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211321.zip) | 2076 | - | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211323](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211323.zip) | 2077 | - | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.9 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211326](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211326.zip) | 2079 | - | F | Correction to NR idle mode test case 6.3.1.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211328](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211328.zip) | 2081 | - | F | Correction for NR5GC multilayer test case 11.4.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211329](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211329.zip) | 2082 | - | F | Correction for 5GMM test case 9.1.5.1.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211330](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211330.zip) | 2083 | - | F | Correction for NRDC test case 8.2.2.5.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211333](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211333.zip) | 2086 | - | F | Correction for NR5GC RRC test case 8.1.4.1.7.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211335](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211335.zip) | 2088 | - | F | Correction to f\_NR\_RRCReconfig\_AddSCG\_DRBs\_NRDC | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211336](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211336.zip) | 2089 | - | F | Correction to function f\_NR5GC\_ModifyPDUSession\_AddVideo | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211341](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211341.zip) | 2091 | - | F | Correction to f\_NR\_SendRRCReconfiguration\_NRDC | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211342](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211342.zip) | 2092 | - | F | Correction for 5GMM test case 9.3.1.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211343](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211343.zip) | 2093 | - | F | Correction for NR5GC multilayer test case 11.4.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211344](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211344.zip) | 2094 | - | F | Correction for NR5GC multilayer test case 11.4.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211349](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211349.zip) | 2099 | - | F | Correction to NR5GC testcase 8.1.2.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211350](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211350.zip) | 2100 | - | F | Correction to f\_IMS\_EPS\_Fallback\_Part2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211351](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211351.zip) | 2101 | - | F | Correction to EPS FB TC 11.1.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211353](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211353.zip) | 2102 | - | F | Corrections for NR5GC multilayer test case 11.1.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211354](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211354.zip) | 2103 | - | F | Corrections for NR5GC multilayer test case 11.4.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211357](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211357.zip) | 2105 | - | F | Correction to NR testcase 11.1.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211358](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211358.zip) | 2106 | - | F | Correction to function f\_NR5GC\_RegistrationReject | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211385](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211385.zip) | 1637 | 1 | B | EN-DC FR1 : Addition of NR PDCP test case 7.1.3.5.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211386](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211386.zip) | 1769 | 1 | B | Addition of NR5GC test case 11.1.2 in FR1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211387](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211387.zip) | 1814 | 1 | B | Addition of NR-DC test case 8.2.2.5.2 in FR1+FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211388](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211388.zip) | 1820 | 1 | F | Correction for 5GMM test case 9.1.5.1.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211389](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211389.zip) | 1824 | 1 | B | Addition of NR-DC test case 8.2.2.9.2 in FR1+FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211390](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211390.zip) | 1828 | 1 | F | EN-DC FR1 : Re-verification of NR PDCP test case 7.1.3.5.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211391](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211391.zip) | 1832 | 1 | B | Addition of NR-DC test case 8.2.5.3.2 in FR1+FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211392](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211392.zip) | 1833 | 1 | B | Addition of NR-DC test case 8.2.5.4.2 in FR1+FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211393](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211393.zip) | 1858 | 1 | F | Correction to NR5GC testcase 9.1.7.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211394](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211394.zip) | 1870 | 1 | B | Addition of NR5GC test case 7.1.1.3.2b in FR1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211395](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211395.zip) | 1873 | 1 | F | Correction for NR5GC RRC test case 8.1.3.1.16 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211397](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211397.zip) | 1874 | 1 | F | Correction for EN-DC RRC test case 8.2.2.7.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211399](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211399.zip) | 2107 | - | F | Correction for EN-DC MAC test case 7.1.3.5.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211402](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211402.zip) | 1882 | 1 | F | Correction to NR test cases 7.1.1.4.2.x | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211403](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211403.zip) | 1883 | 1 | F | Correction to NR testcase 7.1.1.4.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211404](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211404.zip) | 1885 | 1 | B | Addition of NR-DC test case 7.1.3.5.2 in FR1+FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211405](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211405.zip) | 1893 | 1 | F | Correction to NR5GC testcase 7.1.1.9.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211406](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211406.zip) | 1894 | 1 | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.1.3.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211407](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211407.zip) | 1895 | 1 | F | Correction to NR5GC testcase 7.1.1.3.8.2 in FR1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211408](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211408.zip) | 1947 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.1.1a | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211410](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211410.zip) | 1948 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.2.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211411](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211411.zip) | 1949 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211412](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211412.zip) | 1950 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211413](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211413.zip) | 1951 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211414](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211414.zip) | 1952 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211415](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211415.zip) | 1953 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211416](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211416.zip) | 1954 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211417](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211417.zip) | 1955 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.1.3.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211418](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211418.zip) | 1956 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211419](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211419.zip) | 1957 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211420](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211420.zip) | 1958 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211421](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211421.zip) | 1959 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211422](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211422.zip) | 1960 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211423](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211423.zip) | 1961 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.2.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211424](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211424.zip) | 1962 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211425](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211425.zip) | 1963 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211426](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211426.zip) | 1964 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211427](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211427.zip) | 1965 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211428](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211428.zip) | 1966 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211429](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211429.zip) | 1967 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.9 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211430](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211430.zip) | 1968 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.2.3.10 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211431](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211431.zip) | 1969 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211432](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211432.zip) | 1970 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.2.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211433](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211433.zip) | 1971 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.2.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211434](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211434.zip) | 1972 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.3.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211435](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211435.zip) | 1973 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.3.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211436](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211436.zip) | 1974 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.3.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211437](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211437.zip) | 1975 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.3.4.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211438](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211438.zip) | 1976 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.4.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211439](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211439.zip) | 1977 | 1 | B | NR5GC FR2: Addition of NR5GC test case 7.1.4.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211440](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211440.zip) | 1978 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.1.1.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211441](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211441.zip) | 1979 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.1.2.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211442](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211442.zip) | 1980 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.2.1.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211443](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211443.zip) | 1981 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.5.3.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211444](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211444.zip) | 1982 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.5.3.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211445](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211445.zip) | 1983 | 1 | B | NR5GC FR2: Addition of NR5GC test case 8.1.5.3.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211446](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211446.zip) | 1984 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.1.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211447](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211447.zip) | 1985 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.6.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211448](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211448.zip) | 1986 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.6.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211449](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211449.zip) | 1987 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.6.2.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211450](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211450.zip) | 1988 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.7.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211451](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211451.zip) | 1989 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.8.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211452](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211452.zip) | 1990 | 1 | B | NR5GC FR2: Addition of NR5GC test case 9.1.8.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211453](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211453.zip) | 1991 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.1.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211454](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211454.zip) | 1992 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211455](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211455.zip) | 1993 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.2.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211456](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211456.zip) | 1994 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.4.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211457](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211457.zip) | 1995 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.5.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211458](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211458.zip) | 1996 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.6.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211459](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211459.zip) | 1997 | 1 | B | NR5GC FR2: Addition of NR5GC test case 10.1.6.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211460](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211460.zip) | 1999 | 1 | F | Correction to NR test case 8.2.2.3.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211461](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211461.zip) | 2000 | 1 | F | Correction to NR testcases 7.1.3.2.x. | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211462](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211462.zip) | 2008 | 1 | B | NR5GC FR2 : Addition of NR MAC test case 7.1.1.1.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211464](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211464.zip) | 2009 | 1 | F | Correction to NR5GC testcase 7.1.1.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211465](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211465.zip) | 2011 | 1 | F | Correction to NR5GC NAS TC 9.1.5.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211466](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211466.zip) | 2013 | 1 | F | Correction to the UE capability transfer testcases 8.2.1.1.1 and 8.1.5.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211467](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211467.zip) | 2015 | 1 | F | Correction to NRDC functions | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211470](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211470.zip) | 2109 | - | F | Correction to NR-DC test case 8.2.2.9.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211471](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211471.zip) | 2110 | - | F | Correction to NR5GC test case 7.1.3.5.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211479](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211479.zip) | 2115 | - | F | Corrections for NR idle more test case 6.3.1.7 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211480](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211480.zip) | 2116 | - | F | Correction for NG NAS template | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211482](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211482.zip) | 2117 | - | F | Correction for EN-DC RRC test case 8.2.1.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211483](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211483.zip) | 2118 | - | F | Correction to NR RRC test cases 8.1.3.1.12 and 8.1.3.1.11 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211486](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211486.zip) | 2121 | - | F | Correction for NR5GC multilayer test case 11.4.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211487](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211487.zip) | 2122 | - | F | Correction for SDAP test case 7.1.4.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211488](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211488.zip) | 2123 | - | F | Correction for 5GSM test case 10.1.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211489](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211489.zip) | 2124 | - | F | Corrections for NR5GC multilayer test cases 11.4.x | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211496](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211496.zip) | 2130 | - | B | Addition of NR5GC testcase 8.1.5.4.1 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211498](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211498.zip) | 2131 | - | B | Addition of NR5GC testcase 7.1.3.5.4 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211500](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211500.zip) | 2132 | - | B | Addition of NR5GC testcase 7.1.3.5.1 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211502](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211502.zip) | 2133 | - | B | Addition of NR5GC testcase 7.1.3.1.1 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211504](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211504.zip) | 2134 | - | B | Addition of NR5GC testcase 7.1.3.1.2 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211506](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211506.zip) | 2135 | - | F | Correction to NR5GC testcase 9.3.1.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211508](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211508.zip) | 2137 | - | F | Correction for 5GSM test case 10.1.4.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211509](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211509.zip) | 2138 | - | F | Correction for 5GSM test case 10.1.2.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211510](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211510.zip) | 2139 | - | F | Correction to NR5GC testcase 11.4.9 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211511](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211511.zip) | 2140 | - | B | Addition of NR5GC testcase 7.1.3.4.1 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211513](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211513.zip) | 2141 | - | B | Addition of NR5GC testcase 8.1.5.1.1 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211516](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211516.zip) | 2142 | - | B | Addition of NR5GC testcase 10.1.3.2 in FR2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211524](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211524.zip) | 2146 | - | F | Correction to NR5GC testcase 11.4.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211526](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211526.zip) | 2147 | - | F | Rel-16 Sep'21 partial baseline upgrade for 5GS TTCN-3 Test Suites | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211528](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211528.zip) | 2149 | - | F | Correction to f\_NR\_Postamble | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211536](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211536.zip) | 2152 | - | B | Addition of EPS Fallback test case 11.1.9 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211538](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211538.zip) | 2153 | - | F | Re-verification of EPS Fallback test case 11.1.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211556](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211556.zip) | 2154 | - | B | NR5GC FR2 : Addition of NR idle mode test case 6.1.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211557](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211557.zip) | 2155 | - | B | NR5GC FR2 : Addition of NR idle mode test case 6.1.2.17 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211559](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211559.zip) | 2157 | - | B | NR5GC FR2 : Addition of NR RLC test case 7.1.2.3.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211560](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211560.zip) | 2158 | - | B | NR5GC FR2 : Addition of NR RLC test case 7.1.2.3.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211562](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211562.zip) | 2160 | - | B | NR5GC FR2 : Addition of 5GMM test case 9.1.1.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211563](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211563.zip) | 2161 | - | B | NR5GC FR2 : Addition of 5GMM test case 9.1.1.6 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211579](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211579.zip) | 2170 | - | B | NR5GC FR2 : Addition of RRC test case 8.1.1.4.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211581](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211581.zip) | 2171 | - | F | Correction for NR bands n38 and n40 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211586](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211586.zip) | 2173 | - | B | Addition of NR5GC Power Saving test case 8.1.5.10.1 in FR1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211588](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211588.zip) | 2174 | - | F | Correction for NR5GC Idle mode test case 6.2.1.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211591](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211591.zip) | 2177 | - | F | Correction for NR5GC RRC test case 8.1.2.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211593](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211593.zip) | 2178 | - | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.4.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211595](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211595.zip) | 2179 | - | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211603](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211603.zip) | 2184 | - | F | Correction for CA band combination N257G | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211609](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211609.zip) | 2187 | - | F | Correction for 5GMM test case 9.1.5.1.8 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211611](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211611.zip) | 1876 | 1 | F | Correction for NR MAC test case 7.1.1.5.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211612](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211612.zip) | 1892 | 1 | F | Correction for NR capability functions | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211613](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211613.zip) | 2004 | 1 | B | NR5GC FR2 : Addition of NR5GC RRC test case 8.1.1.1.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211614](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211614.zip) | 2005 | 1 | B | NR5GC FR2 : Addition of NR5GC RRC test case 8.1.1.2.3 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211615](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211615.zip) | 2006 | 1 | B | NR5GC FR2 : Addition of NR5GC RRC test case 8.1.1.4.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211616](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211616.zip) | 2007 | 1 | B | NR5GC FR2 : Addition of NR5GC RRC test case 8.1.5.3.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211636](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211636.zip) | 2022 | 1 | F | Correction to NR5GC testcase 7.1.1.3.8.2 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211682](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211682.zip) | 1839 | 1 | F | Correction for NR5GC RRC test case 8.1.1.2.1 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211686](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211686.zip) | 1998 | 1 | F | Correction to NR5GC testcase 8.1.2.1.4 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211687](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211687.zip) | 2001 | 1 | F | Correction to the reestablishment procedure related functions | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211692](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211692.zip) | 1879 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.4.5 | 17.1.0 |
| 2021-12 | RAN#94 | [R5s211693](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2021/Docs/R5s211693.zip) | 2217 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 17.1.0 |
| 2022-03 | RAN#95 | R5-221403 | 2369 | 1 | F | Addition of NR/WLAN Inter-RAT test model | 17.2.0 |
| 2022-03 | RAN#95 | R5-221467 | 2367 | 1 | F | 5G Rel-15: Test Models updates | 17.2.0 |
| 2022-03 | RAN#95 | R5-221529 | 2368 | 1 | F | 5G V2X: Test Model updates | 17.2.0 |
| 2022-03 | RAN#95 | R5-221596 | 2371 | 1 | F | Addition of new PIXIT parameter for NR EIEI | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220071](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220071.zip) | 2285 | - | F | Correction to EPS Fallback test case 11.1.8 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220072](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220072.zip) | 2286 | - | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220073](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220073.zip) | 2287 | - | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220074](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220074.zip) | 2288 | - | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.8 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220078](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220078.zip) | 2289 | - | B | Addition of NR CA test case 8.1.4.1.9.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220080](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220080.zip) | 2290 | - | B | Addition of NR CA test case 8.1.4.1.9.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220082](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220082.zip) | 2291 | - | B | Addition of NR5GC testcase 7.1.1.5.3 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220084](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220084.zip) | 2292 | - | B | Addition of NR5GC testcase 8.1.2.1.4 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220086](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220086.zip) | 2293 | - | B | Addition of NR5GC testcase 7.1.1.5.5 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220089](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220089.zip) | 2294 | - | B | Addition of NR5GC Logged MDT FR1 test case 8.1.6.1.2.11 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220091](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220091.zip) | 2295 | - | F | Correction to NR5GC testcase 11.1.7 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220094](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220094.zip) | 2296 | - | B | NR5GC FR1:Addition of NR5GC Logged MDT FR1 test case 8.1.6.1.2.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220095](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220095.zip) | 2297 | - | F | Correction for NR MAC test cases 7.1.1.4.2.x | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220098](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220098.zip) | 2300 | - | F | Correction for NR MAC test case 7.1.1.4.2.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220105](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220105.zip) | 2307 | - | F | Correction for SDAP test case 7.1.4.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220106](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220106.zip) | 2308 | - | F | Correction for TCP functions | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220107](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220107.zip) | 2309 | - | F | Correction for functionf\_MultipleQoSPreamble\_Part1() | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220109](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220109.zip) | 2311 | - | F | Correction for 5GMM test case 9.1.6.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220115](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220115.zip) | 2316 | - | F | Correction to NR testcase 7.1.1.3.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220116](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220116.zip) | 2317 | - | F | Correction to f\_NR\_GetCA\_IntraBandFrequency | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220117](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220117.zip) | 2318 | - | F | Correction for TCP function | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220118](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220118.zip) | 2319 | - | F | Correction for NR5GC RRC test case 8.1.2.1.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220119](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220119.zip) | 2320 | - | B | Addition of NR5GC MDT test case 8.1.6.1.2.13 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220121](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220121.zip) | 2321 | - | F | Correction to NR MDT test case 8.1.6.1.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220123](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220123.zip) | 2323 | - | F | Correction to function f\_NR5GC\_508RRC\_IntraNR\_HO\_IntraCell\_Step1\_8 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220124](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220124.zip) | 2324 | - | F | Correction to NR5GC testcase 7.1.3.4.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220125](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220125.zip) | 2325 | - | F | Correction to NR test case 8.1.1.4.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220126](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220126.zip) | 2002 | 1 | B | Addition of NR5GC RACS test case 9.1.9.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220127](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220127.zip) | 2078 | 1 | F | Correction to 7.1.1.4.2.x test cases | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220128](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220128.zip) | 2104 | 1 | B | NR5GC FR1 : Addition of 5GMM Rel-16 test case 9.1.9.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220145](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220145.zip) | 2112 | 1 | F | Correction to NR5GC testcase 11.3.7 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220146](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220146.zip) | 2143 | 1 | B | Addition of NR5GC testcase 8.1.5.6.3 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220147](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220147.zip) | 2144 | 1 | B | Addition of NR5GC testcase 8.1.1.3.1 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220148](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220148.zip) | 2145 | 1 | B | Addition of NR5GC testcase 7.1.1.1.6 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220149](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220149.zip) | 2156 | 1 | B | NR5GC FR2 : Addition of NR MAC test case 7.1.1.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220150](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220150.zip) | 2159 | 1 | B | NR5GC FR2 : Addition of NR RLC test case 7.1.2.3.11 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220151](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220151.zip) | 2162 | 1 | B | Addition of NR5GC test case 7.1.1.4.2.4 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220152](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220152.zip) | 2163 | 1 | B | Addition of ENDC test case 7.1.1.4.2.4 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220153](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220153.zip) | 2175 | 1 | F | Correction for NR MAC test case 7.1.1.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220154](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220154.zip) | 2176 | 1 | B | NR5GC FR2 : Addition of NR MAC test case 7.1.1.1.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220155](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220155.zip) | 2180 | 1 | F | Correction to NR testcases 7.1.1.5.1, 7.1.1.5.2 and 7.1.1.5.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220156](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220156.zip) | 2182 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.3.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220157](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220157.zip) | 2191 | 1 | F | Correction of NR5GC test case 9.1.1.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220158](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220158.zip) | 2193 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.3.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220159](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220159.zip) | 2194 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.3.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220160](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220160.zip) | 2195 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220161](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220161.zip) | 2196 | 1 | B | NR5GC FR2 : Addition of NR5GC test case 8.1.2.1.5.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220162](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220162.zip) | 2197 | 1 | B | NR5GC FR2 : Addition of NR5GC test case 8.1.5.6.5.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220163](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220163.zip) | 2198 | 1 | B | NR5GC FR2 : Addition of NR5GC test case 8.1.2.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220164](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220164.zip) | 2199 | 1 | B | NR5GC FR2 : Addition of NR5GC test case 8.1.5.2.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220166](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220166.zip) | 2206 | 1 | F | Correction for 5GMM test case 9.1.5.1.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220167](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220167.zip) | 2207 | 1 | F | Corrections for NR MAC test cases 7.1.1.5.x | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220169](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220169.zip) | 2208 | 1 | F | Correction to the function f\_ReconfigureDRBs | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220171](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220171.zip) | 2209 | 1 | F | Correction to NR test case 7.1.1.1.1a | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220174](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220174.zip) | 2326 | - | F | Correction to 5GMM Emergency Services TCs | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220175](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220175.zip) | 2327 | - | F | Correction to function f\_NR5GC\_MappedContextFromS1\_InitNAS | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220176](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220176.zip) | 2328 | - | F | Correction to NR5GC testcase 8.1.4.1.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220177](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220177.zip) | 2329 | - | F | Correction to NR5GC testcase 11.1.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220178](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220178.zip) | 2330 | - | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.3 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220180](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220180.zip) | 2331 | - | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.12 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220183](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220183.zip) | 2333 | - | F | Correction for 5GMM test cases 9.1.5.2.7 and 9.1.5.2.8 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220185](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220185.zip) | 2335 | - | F | Correction for NRDC test case 8.2.2.9.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220188](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220188.zip) | 2337 | - | F | Correction to MAC test case 7.1.1.3.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220191](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220191.zip) | 2339 | - | F | Correction for NR5GC MAC test cases 7.1.1.5.2 and 7.1.1.5.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220194](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220194.zip) | 2340 | - | F | Correction to NR test case 7.1.3.5.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220195](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220195.zip) | 2341 | - | B | Addition of ENDC testcase 8.2.2.3.1 in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220197](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220197.zip) | 2342 | - | F | Correction to NR test case 8.1.4.1.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220198](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220198.zip) | 2343 | - | F | Correction to Reestablisment procedure (add SRB1) | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220199](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220199.zip) | 2344 | - | B | Addition of ENDC testcase 7.1.1.3.2b in FR2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220201](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220201.zip) | 2345 | - | F | Correction to NR test case 8.1.4.1.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220207](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220207.zip) | 2347 | - | F | Correction to NR5GC testcase 11.1.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220208](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220208.zip) | 2348 | - | F | Correction for EN-DC RRC test case 8.2.2.2.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220211](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220211.zip) | 2351 | - | F | Correction for EN-DC RRC test case 8.2.1.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220213](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220213.zip) | 2353 | - | F | Correction to function f\_NR\_GetSCGConfig\_SCellAdd | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220214](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220214.zip) | 2354 | - | F | Correction to function fl\_TC\_8\_2\_4\_1\_1\_x\_ENDC\_NR\_TestBody | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220217](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220217.zip) | 2355 | - | F | Correction to NR testcase 8.1.6.1.2.7 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220218](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220218.zip) | 2356 | - | B | Addition of NR5GC test case 7.1.1.7.1.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220224](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220224.zip) | 2358 | - | F | Update to function f\_NR\_InitLocationAndBandwidth | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220225](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220225.zip) | 2359 | - | B | NR5GC FR1 : Addition of RRC test case 8.1.1.3.7a | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220227](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220227.zip) | 2360 | - | F | Correction to NAS 5GMM test case 9.1.5.1.15 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220241](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220241.zip) | 2226 | 1 | F | Correction for NR MAC test case 7.1.1.3.2b | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220242](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220242.zip) | 2232 | 1 | B | Addition of NR5GC MDT test case 8.1.6.1.4.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220243](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220243.zip) | 2246 | 1 | F | Correction for NR5GC IRAT test case 8.1.1.3.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220247](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220247.zip) | 2249 | 1 | F | Correction to test case 7.1.1.9.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220248](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220248.zip) | 2250 | 1 | F | Correction to NR5GC MDT template cr\_NR\_RLF\_Report\_r16 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220249](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220249.zip) | 2251 | 1 | F | Correction for Rel-16 SON-MDT test cases 8.1.6.1.3.1 and 8.1.6.1.3.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220250](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220250.zip) | 2256 | 1 | F | Correction for NR5GC postamble function | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220252](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220252.zip) | 2259 | 1 | F | Correction to NR testcase 7.1.3.5.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220253](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220253.zip) | 2260 | 1 | F | Correction to NR test case 8.1.2.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220254](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220254.zip) | 2261 | 1 | F | Correction to NR testcase 8.1.3.2.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220258](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220258.zip) | 2262 | 1 | B | Addition of eNS NR5GC test case 9.1.10.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220259](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220259.zip) | 2263 | 1 | F | Correction to function f\_NR5GC\_EmergencyCallRelease | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220260](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220260.zip) | 2264 | 1 | F | Correction to function f\_NR5GC\_EmergencyCallWithRegistration | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220261](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220261.zip) | 2265 | 1 | F | Correction to function f\_NR\_UE\_DeRegisterOnSwitchOff | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220262](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220262.zip) | 2266 | 1 | F | Correction to NR5GC testcase 11.4.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220263](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220263.zip) | 2267 | 1 | F | Correction to NR testcase 7.1.1.4.2.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220264](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220264.zip) | 2268 | 1 | F | Correction to NR test case 7.1.1.5.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220265](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220265.zip) | 2269 | 1 | F | Correction to NR5GC MAC testcase 7.1.1.3.2b | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220267](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220267.zip) | 2270 | 1 | F | Correction to the function f\_ReconfigureDRBs | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220268](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220268.zip) | 2280 | 1 | F | Correction to NR testcase 7.1.1.11.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220269](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220269.zip) | 2282 | 1 | F | Correction to f\_EUTRA38\_MultiPDN\_EstablishAdditionalPDN\_Step2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220280](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220280.zip) | 2372 | - | F | Correction to NR testcase 8.1.5.2.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220281](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220281.zip) | 2373 | - | B | NR5GC FR2 : Addition of test case 6.1.1.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220283](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220283.zip) | 2374 | - | B | NR5GC FR2 : Addition of test case 7.1.1.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220285](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220285.zip) | 2375 | - | B | NR5GC FR2 : Addition of test case 7.1.1.10.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220287](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220287.zip) | 2376 | - | B | NR5GC FR2 : Addition of test case 7.1.1.2.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220289](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220289.zip) | 2377 | - | B | NR5GC FR2 : Addition of test case 7.1.1.5.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220291](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220291.zip) | 2378 | - | B | NR5GC FR2 : Addition of test case 7.1.1.5.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220293](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220293.zip) | 2379 | - | B | NR5GC FR2 : Addition of test case 7.1.1.5.4 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220295](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220295.zip) | 2380 | - | B | NR5GC FR2 : Addition of test case 7.1.1.7.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220297](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220297.zip) | 2381 | - | B | NR5GC FR2 : Addition of test case 7.1.2.3.5 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220299](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220299.zip) | 2382 | - | B | NR5GC FR2 : Addition of test case 8.1.1.3.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220303](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220303.zip) | 2384 | - | B | NR5GC FR2 : Addition of test case 8.1.5.6.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220309](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220309.zip) | 2387 | - | B | NR5GC FR2 : Addition of test case 9.3.1.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220311](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220311.zip) | 2388 | - | B | NR5GC FR2 : Addition of test case 9.3.1.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220321](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220321.zip) | 2393 | - | F | Correction to test case 7.1.2.2.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220332](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220332.zip) | 2400 | - | B | Addition of NR5GC test case 7.1.1.3.9 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220334](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220334.zip) | 2401 | - | B | Addition of ENDC test case 7.1.1.3.9 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220338](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220338.zip) | 2402 | - | B | NR5GC FR1 : Addition of NR5GC RRC test case 8.1.1.3.7b | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220347](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220347.zip) | 2404 | - | B | NR/5GC FR1 : Addition of NR test case 8.1.4.1.8.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220353](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220353.zip) | 2405 | - | F | Correction to the template cs\_RadioBearer\_Reconfig\_DRBwithNRPDCPonEUTRA | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220354](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220354.zip) | 2406 | - | F | Correction to the NR5GC testcases 8.1.4.1.9.1, 8.1.4.1.9.2 and 8.1.4.1.9.3 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220365](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220365.zip) | 2407 | - | F | Correction to NR5GC testcases 8.1.5.8.2.x | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220372](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220372.zip) | 2411 | - | F | Correction to the reestablishment functions | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220398](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220398.zip) | 2065 | 1 | F | Correction for NR MAC test case 7.1.1.1.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220399](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220399.zip) | 2169 | 1 | F | Correction for NR5GC 5GMM test case 9.1.1.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220400](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220400.zip) | 2181 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.4.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220401](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220401.zip) | 2185 | 1 | B | NR5GC FR1+FR2 : Addition of NR5GC RRC test case 8.2.3.14.2 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220402](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220402.zip) | 2210 | 1 | F | Correction to NAS 5GMM test case 9.1.5.1.15 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220403](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220403.zip) | 2211 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.2.9 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220404](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220404.zip) | 2212 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.2.7 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220405](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220405.zip) | 2219 | 1 | B | Addition of NR-DC test case 7.1.1.11.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220407](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220407.zip) | 2224 | 1 | F | Corrections to NR MAC test case 7.1.1.9.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220408](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220408.zip) | 2227 | 1 | F | Correction for NR5GC UAC test case 11.3.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220409](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220409.zip) | 2230 | 1 | B | Addition of eNS NR5GC test case 9.1.10.1 in FR1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220410](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220410.zip) | 2247 | 1 | B | NR5GC FR1 : Addition of Rel-16 SON-MDT test case 8.1.6.1.4.6 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220411](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220411.zip) | 2271 | 1 | B | Addition of EN-DC MAC test case 7.1.1.3.2b | 17.2.0 |
| 2022-03 | RAN#95 | [R5s220429](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220429.zip) | 2216 | 1 | F | Correction of NR5GC test case 9.1.4.1 | 17.2.0 |
| 2022-03 | RAN#95 | [R5s2204](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220429.zip)38 | 2428 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 17.2.0 |
| 2022-06 | RAN#96 | R5-222377 | 2513 | - | F | NR Positioning: addition of posSIBs support | 17.3.0 |
| 2022-06 | RAN#96 | R5-223378 | 2514 | 1 | F | 5G V2X: Test Model updates | 17.3.0 |
| 2022-06 | RAN#96 | R5-223443 | 2515 | 1 | F | 5G Rel-15: Test Models updates | 17.3.0 |
| 2022-06 | RAN#96 | R5-223444 | 2521 | 1 | F | NR IIoT: Test Model updates | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220471](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220471.zip) | 2447 | - | F | Correction to function f\_Get\_NG\_PDUSessionEstablishmentAccept | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220472](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220472.zip) | 2448 | - | F | Correction to NR5GC testcase 8.1.6.1.2.8 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220473](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220473.zip) | 2449 | - | F | Correction for NR5GC RRC CA test cases 8.1.4.1.9.x | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220474](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220474.zip) | 2450 | - | F | Correction for NR MAC test case 7.1.1.1.1a | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220476](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220476.zip) | 2452 | - | F | Correction for NR MAC test case 7.1.1.1.6 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220477](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220477.zip) | 2453 | - | F | Correction to the function f\_NR\_SetCellPowerList | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220478](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220478.zip) | 2454 | - | F | Correction to the function f\_EUTRA38\_MultiPDN\_InitialRegistration\_Step5\_16 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220479](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220479.zip) | 2455 | - | F | Correction for NR5GC emergency calling test cases | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220480](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220480.zip) | 2456 | - | F | Correction for NR MAC test case 7.1.1.3.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220481](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220481.zip) | 2457 | - | F | Correction for NR5GC idle mode test case 6.4.1.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220482](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220482.zip) | 2458 | - | F | Correction for NR5GC IRAT test case 9.3.1.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220483](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220483.zip) | 2459 | - | F | Correction to ENDC test case 7.1.1.3.9 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220484](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220484.zip) | 2460 | - | F | Correction to ENDC test case 7.1.1.3.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220486](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220486.zip) | 2461 | - | F | Correction to function f\_NR\_RRC\_CipherActTime\_GetCurrent | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220489](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220489.zip) | 2463 | - | F | Correction to NR5GC testcase 8.1.6.1.3.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220490](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220490.zip) | 2464 | - | F | Correction to NR5GC testcase 8.1.6.1.4.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220491](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220491.zip) | 2465 | - | F | Correction to NR5GC testcase 11.1.5 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220492](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220492.zip) | 2466 | - | F | Correction to NR5GC testcase 11.1.6 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220493](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220493.zip) | 2467 | - | F | Correction to NR5GC test case 7.1.3.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220495](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220495.zip) | 2468 | - | F | Correction for NR5GC postamble function | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220498](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220498.zip) | 2471 | - | F | Correction for NR RLC test case 7.1.2.3.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220501](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220501.zip) | 2473 | - | F | Correction for NR5GC eNS test cases | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220502](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220502.zip) | 2474 | - | F | Correction for 5GMM test case 9.1.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220503](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220503.zip) | 2475 | - | F | Correction for NR PDCP test case 7.1.3.4.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220506](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220506.zip) | 2476 | - | F | Correction to NR5GC testcase 7.1.1.9.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220508](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220508.zip) | 2477 | - | F | Re-verification of NR5GC R16 SON-MDT test case 8.1.6.1.3.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220509](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220509.zip) | 2478 | - | F | Correction to function f\_UT\_RequestIMSCall | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220524](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220524.zip) | 2479 | - | F | Correction to function f\_NR5GC\_EmergencyCallRelease | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220534](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220534.zip) | 2480 | - | F | Correction for NR PDCP test case 7.1.3.5.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220537](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220537.zip) | 2482 | - | F | Re-verification of NR5GC Rel-16 Mobility Enhancement test case 8.1.4.4.3 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220547](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220547.zip) | 2486 | - | F | Correction for NR PDCP test case 7.1.3.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220548](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220548.zip) | 2487 | - | F | Correction for NR5GC ENDC test case 8.2.2.8.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220550](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220550.zip) | 2489 | - | F | Correction for SDAP test case 7.1.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220551](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220551.zip) | 2490 | - | F | Correction for 5GMM test case 9.1.7.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220553](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220553.zip) | 2492 | - | F | Correction for NR5GC NRDC test case 8.2.3.14.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220554](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220554.zip) | 2493 | - | F | Correction for NR5GC idle mode test case 6.2.1.5 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220558](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220558.zip) | 2494 | - | F | Correction for NR MAC test cases 7.1.1.4.2.x | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220560](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220560.zip) | 2495 | - | F | Correction to function fl\_ReleaseCallWithOptionalDeregister | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220561](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220561.zip) | 2496 | - | F | Correction to NR5GC testcase 7.1.1.3.9 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220567](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220567.zip) | 2502 | - | F | Correction for NR PDCP test case 7.1.3.5.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220569](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220569.zip) | 2503 | - | B | Addition of NR5GC testcase 6.3.1.4 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220571](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220571.zip) | 2504 | - | B | Addition of NR5GC testcase 6.3.1.9 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220573](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220573.zip) | 2505 | - | B | Addition of NR5GC testcase 11.3.3 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220577](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220577.zip) | 2506 | - | F | Corrections for NR5GC IRAT test cases | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220579](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220579.zip) | 2507 | - | B | Addition of NR5GC UAC test case 11.3.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220582](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220582.zip) | 2509 | - | B | Addition of NR5GC testcase 11.3.7 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220585](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220585.zip) | 2511 | - | B | Addition of NR5GC testcase 6.1.2.9 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220587](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220587.zip) | 2512 | - | B | Addition of NR5GC testcase 6.3.1.7 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220590](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220590.zip) | 2516 | - | F | Correction to NR testcases 8.1.4.1.7.x | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220591](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220591.zip) | 2517 | - | F | Correction to the function f\_TC\_7\_1\_1\_3\_8\_EUTRA\_Common | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220596](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220596.zip) | 2519 | - | B | Addition of NR5GC test case 6.3.1.10 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220613](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220613.zip) | 2523 | - | F | Correction for EN-DC NR PDCP test case 7.1.3.5.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220614](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220614.zip) | 2524 | - | F | Correction for NR5GC emergency call test case 11.4.4 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220618](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220618.zip) | 2526 | - | B | Addition of NR5GC testcase 8.1.1.2.1 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220622](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220622.zip) | 2201 | 1 | F | Correction to NR MAC testcases 7.1.1.7.1.x | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220623](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220623.zip) | 2222 | 1 | B | Addition of NR5GC test case 11.1.5 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220624](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220624.zip) | 2223 | 1 | B | Addition of NR5GC test case 11.1.6 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220625](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220625.zip) | 2248 | 1 | B | NR5GC FR1 : Addition of Rel-16 SON-MDT test case 8.1.6.1.4.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220626](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220626.zip) | 2283 | 1 | B | Addition of EN-DC CA test case 8.2.4.2.1.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220627](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220627.zip) | 2284 | 1 | B | Addition of EN-DC CA test case 8.2.4.2.1.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220628](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220628.zip) | 2322 | 1 | F | Correction to NR test case 7.1.1.3.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220630](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220630.zip) | 2346 | 1 | B | NR5GC FR1 : Addition of 5GMM Rel-16 test case 9.1.9.5 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220631](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220631.zip) | 2349 | 1 | F | Correction for Rel-16 SON-MDT test case 8.1.6.1.2.9 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220633](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220633.zip) | 2357 | 1 | B | NR5GC FR1 : Addition of R16 eNS test case 9.1.10.6 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220634](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220634.zip) | 2363 | 1 | F | Correction for NR5GC emergency call test case 11.4.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220635](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220635.zip) | 2364 | 1 | B | Addition of NR5GC MDT test case 8.1.6.1.3.5 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220636](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220636.zip) | 2365 | 1 | B | Addition of NR5GC Rel-16 Mobility Enhancement test case 8.1.4.4.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220637](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220637.zip) | 2383 | 1 | B | NR5GC FR2 : Addition of test case 8.1.4.2.2.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220638](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220638.zip) | 2385 | 1 | B | NR5GC FR2 : Addition of test case 9.1.5.1.11 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220639](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220639.zip) | 2386 | 1 | B | NR5GC FR2 : Addition of test case 9.1.5.1.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220640](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220640.zip) | 2389 | 1 | B | NR5GC FR1 : Addition of NR5GC multilayer test case 11.3.1a | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220641](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220641.zip) | 2390 | 1 | B | NR5GC FR2 : Addition of NR5GC multilayer test case 11.3.1a | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220642](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220642.zip) | 2391 | 1 | B | NR5GC FR1 : Addition of NR5GC Rel-16 RRC test case 8.1.4.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220644](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220644.zip) | 2395 | 1 | F | Correction to NR5GC idle mode test case 6.1.2.9 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220645](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220645.zip) | 2399 | 1 | B | Addition of NR5GC test case 8.1.5.9.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220646](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220646.zip) | 2408 | 1 | B | Addition of NR5GC test case 8.1.5.8.1 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220647](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220647.zip) | 2409 | 1 | B | Addition of NR5GC test case 8.1.4.1.9.3 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220649](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220649.zip) | 2413 | 1 | B | Addition of NR5GC testcase 9.1.5.1.10 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220652](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220652.zip) | 2414 | 1 | B | Addition of NR5GC testcase 7.1.1.3.2b in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220654](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220654.zip) | 2417 | 1 | F | Correction for 5GMM test case 9.1.4.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220655](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220655.zip) | 2418 | 1 | F | Correction for NR5GC RRC test case 8.1.1.2.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220656](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220656.zip) | 2419 | 1 | F | Correction for NR5GC postamble function | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220657](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220657.zip) | 2420 | 1 | F | Correction for NR5GC UAC test case 11.3.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220658](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220658.zip) | 2422 | 1 | B | Addition of NR5GC MDT testcase 8.1.6.1.3.4 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220659](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220659.zip) | 2423 | 1 | F | Correction for NR5GC RRC test case 8.1.1.3.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220660](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220660.zip) | 2424 | 1 | B | Addition of NR5GC testcase 11.6.2 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220661](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220661.zip) | 2427 | 1 | B | Addition of NR5GC test case 8.1.4.1.7.3 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220662](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220662.zip) | 2429 | 1 | F | Re-verification of NR5GC test case 11.1.5 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220663](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220663.zip) | 2430 | 1 | F | Re-verification of NR5GC test case 11.1.6 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220664](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220664.zip) | 2432 | 1 | F | Correction for NR5GC EPS fallback test cases 11.1.1 and 11.1.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220665](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220665.zip) | 2437 | 1 | F | Correction to f\_NR5GC\_RRC\_Idle\_Extension | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220666](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220666.zip) | 2438 | 1 | B | Addition of NR5GC testcase 9.1.5.2.4 in FR2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220667](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220667.zip) | 2441 | 1 | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.2 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220668](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220668.zip) | 2446 | 1 | B | Addition of NR5GC Logged MDT test case 8.1.6.1.2.10 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220669](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220669.zip) | 2529 | - | F | Correction to NR5GC testcase 7.1.1.9.1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220674](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220674.zip) | 2532 | - | F | Correction to NR testcase 6.1.1.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220676](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220676.zip) | 2534 | - | F | Correction to NR testcase 7.1.1.3.4 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220677](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220677.zip) | 2366 | 1 | B | NR5GC FR1 : Addition of NR5GC R16 SON-MDT test case 8.1.6.1.3.7 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220678](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220678.zip) | 2535 | - | F | Correction to template cads\_NR\_TDD\_UL\_DL\_ConfigCommon\_REQ | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220713](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220713.zip) | 2412 | 1 | B | Addition of NR5GC Rel-16 Mobility Enhancement test case 8.1.4.4.3 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220722](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220722.zip) | 2425 | 1 | B | Addition of NR5GC testcase 8.1.4.4.4 in FR1 | 17.3.0 |
| 2022-06 | RAN#96 | [R5s220724](https://www.3gpp.org/ftp/TSG_RAN/WG5_Test_ex-T1/TTCN/TTCN_CRs/2022/Docs/R5s220724.zip) | 2560 | - | F | Add new verified and e-mail agreed TTCN test cases in the TC lists in 38.523-3 (prose), Annex A | 17.3.0 |
| 2022-09 | RAN#97 | R5-223932 | 2669 | - | F | NR URLLC enhancements: addition of PUSCH Repetition Type B support | 17.4.0 |
| 2022-09 | RAN#97 | R5-223933 | 2670 | - | F | NR Positioning: updates for posSIBs support | 17.4.0 |
| 2022-09 | RAN#97 | R5-223934 | 2671 | - | F | NR IMS eCall: addition of NR/GERAN Inter-RAT support | 17.4.0 |
| 2022-09 | RAN#97 | R5-225418 | 2672 | 1 | F | Routine maintenance for TS 38.523-3 | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
| 2022-09 | RAN#97 |  |  |  |  |  | 17.4.0 |
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