**3GPP TSG-RAN WG4 Meeting #98-e *R4-2103533***

**Electronic Meeting, January 25 − February 5, 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **DraftCR** | **rev** | **1** | **Current version:** | **16.6.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | NR-U test cases structure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_unlic-Perf | | | | |  | ***Date:*** | | | 2021-01-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Based on the endorsed CR R4-2017092.  There are no test cases for NR-U which RAN4 plans to develop, further details of the specification structure need to be agreed for NR-U test cases | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | A specification structure for NR-U test cases is added | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | There is no specification structure for NR-U test cases | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | New clauses:  A.9, A.9.1, A.9.2, A.9.3;  A.10, A.10.1, A.10.2, A.10.3, A.10.4, A.10.5;  A.11, A.11.1, A.11.2, A.11.3, A.11.4, A.11.5, A.11.6;  A.12, A.12.1, A.12.2, A.12.3, A.12.4, A.12.5.  <…> | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## A.3.19 Test Cases with at Least One Cell on a Carrier Frequency with CCA

*Editor’s note: This clause will include applicability rules for the corresponding test cases.*

### A.3.19.1 Introduction

### A.3.19.2 NR Standalone Tests with NR SCell under CCA and All Other NR Cells in FR1

*Editor’s note: This clause will include applicability rules for the corresponding test cases.*

### A.3.19.3 EN-DC Tests with NR PSCell under CCA and Other NR Cells in FR1

*Editor’s note: This clause will include applicability rules for the corresponding test cases.*

### A.3.19.4 NR Standalone Tests with NR PCell under CCA and Other NR Cells in FR1

*Editor’s note: This clause will include applicability rules for the corresponding test cases.*

### A.3.19.5 E-UTRA Standalone Tests with at Least One NR Cell under CCA

*Editor’s note: This clause will include applicability rules for the corresponding test cases.*

## A.3.20 CCA model

### A.3.20.1 Introduction

### A.3.20.2 CCA model for operation on a carrier frequency with CCA in FR1

#### A.3.20.2.1 DL CCA model

#### A.3.20.2.2 UL CCA model

# A.9 NR Standalone Tests with NR SCell under CCA and All Other NR Cells in FR1

## A.9.1 Timing

## A.9.1.1 UE transmit timing

## A.9.1.2 Timing advance

## A.9.2 Signalling characteristics

### A.9.2.1 Interruption

### A.9.2.2 SCell activation and deactivation delay

### A.9.2.3 Active TCI state switching delay

## A.9.3 Measurement procedure

### A.9.3.1 Intra-frequency measurements

### A.9.3.2 Inter-frequency measurements

### A.9.3.3 L1-RSRP measurements for beam reporting

## A.9.4 Measurement performance

### A.9.4.1 SS-RSRP

### A.9.4.2 SS-RSRQ

### A.9.4.3 SS-SINR

### A.9.4.4 L1-RSRP measurements for beam reporting

### A.9.4.5 RSSI

### A.9.4.6 Channel occupancy

# A.10 EN-DC Tests with NR PSCell under CCA and Other NR Cells in FR1

*Editor’s note: Test cases for EN-DC with NR PSCell under CCA and SCell under CCA are also included here.*

## A.10.1 RRC\_CONNECTED state mobility

### A.10.1.1 RRC connection mobility control

#### A.10.1.1.1 Random Access

##### A.10.1.1.1.1 Contention-based random access for NR PSCell

##### A.10.1.1.1.2 Non-contention based random access for NR PSCell

## A.10.2 Timing

### A.10.2.1 UE transmit timing

### A.10.2.2 UE timing advance

## A.10.3 Signalling characteristics

### A.10.3.1 Radio link monitoring

### A.10.3.2 Interruption

### A.10.3.3 SCell activation and deactivation delay

### A.10.3.4 Beam failure detection and link recovery procedures

### A.10.3.5 Active BWP switching

### A.10.3.6 PSCell addition and release delay

### A.10.3.7 Active TCI state switching delay

## A.10.4 Measurement procedure

### A.10.4.1 Intra-frequency measurements

### A.10.4.2 Inter-frequency measurements

### A.10.4.3 L1-RSRP measurements for beam reporting

## A.10.5 Measurement performance

### A.10.5.1 SS-RSRP

### A.10.5.2 SS-RSRQ

### A.10.5.3 SS-SINR

### A.10.5.4 L1-RSRP measurements for beam reporting

### A.10.5.5 RSSI

### A.10.5.6 Channel occupancy

A.11 NR Standalone Tests with NR PCell under CCA and Other NR Cells in FR1*Editor’s note: Test cases for NR SA with NR PCell under CCA and SCell under CCA are also included here.*

## A.11.1 RRC\_IDLE state mobility

### A.11.1.1 Cell re-selection with both source and target NR carrier frequencies under CCA

### A.11.1.2 Cell re-selection to NR with source NR carrier frequency under CCA

### A.11.1.3 Cell re-selection from NR carrier with target NR carrier frequency under CCA

### A.11.1.4 Inter-RAT cell re-selection to E-UTRAN with source NR carrier frequency under CCA

## A.11.2 RRC\_CONNECTED state mobility

### A.11.2.1 Handover

### A.11.2.2 RRC connection mobility control

#### A.11.2.2.1 RRC re-establishment

#### A.11.2.2.2 Random Access

##### A.11.2.2.2.1 Contention-based random access for NR PSCell

##### A.11.2.2.2.2 Non-contention based random access for NR PSCell

#### A.11.2.2.3 RRC connection release with redirection

## A.11.3 Timing

### A.11.3.1 UE transmit timing

### A.11.3.2 UE timing advance

## A.11.4 Signalling characteristics

### A.11.4.1 Radio link monitoring

### A.11.4.2 Interruption

### A.11.4.3 SCell activation and deactivation delay

### A.11.4.4 Beam failure detection and link recovery procedures

### A.11.4.5 Active BWP switching

### A.11.4.6 Active TCI state switching delay

## A.11.5 Measurement procedure

### A.11.5.1 Intra-frequency measurements

### A.11.5.2 Inter-frequency measurements

### A.11.5.3 Inter-RAT E-UTRAN measurements

### A.11.5.4 L1-RSRP measurements for beam reporting

## A.11.6 Measurement performance

### A.11.6.1 SS-RSRP

### A.11.6.2 SS-RSRQ

### A.11.6.3 SS-SINR

### A.11.6.4 L1-RSRP measurements for beam reporting

### A.11.6.5 RSSI

### A.11.6.6 Channel occupancy

### A.11.6.7 E-UTRAN RSRP

### A.11.6.8 E-UTRAN RSRQ

# A.11.6.9 E-UTRAN SINRA.12 E-UTRA Standalone Tests with at Least One NR Cell under CCA

## A.12.1 RRC\_IDLE state mobility

### A.12.1.1 Inter-RAT cell re-selection to NR on a carrier frequency with CCA

## A.12.2 RRC\_CONNECTED state mobility

### A.12.2.1 Handover

## A.12.3 Signalling characteristics

### A.12.3.1 Interruptions

## A.12.4 Measurement procedure

### A.12.4.1 E-UTRAN−NR inter-RAT SFTD measurements

### A.12.4.2 E-UTRAN−NR inter-RAT measurements

## A.12.5 Measurement performance

### A.12.5.1 E-UTRAN−NR SFTD

### A.12.5.2 E-UTRAN−NR SS-RSRP

### A.12.5.3 E-UTRAN−NR SS-RSRQ

### A.12.5.4 E-UTRAN−NR SS-SINR

### A.12.5.5 E-UTRAN−NR RSSI

### A.12.5.6 E-UTRAN−NR channel occupancy