**3GPP TSG-RAN WG4 Meeting # 98-bis-e R4-2105719**

**Electronic Meeting, Apr. 12-20, 2021**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **Draft** | **rev** |  | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Draft CR on test cases for RRC release with redirection for NR-U | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_unlic-Perf | | | | |  | ***Date:*** | | | 2021-03-01 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | The Draft CR is based on the endorsed CR R4-2103532. The new changes are using “additional changes for RAN4#98-bis-e”   * Some configurations shall be added or updated according to the new configurations introduced for NR-U. * The TSI\_NR value shall be replaced. * Exceeding Lmax shall be avoided. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Add and update some configurations according to the agreements in RAN4#98e meeting. * Change the TSI\_NR value to TBD * Add a note that the test shall not be considered in statistics when exceeding Lmax. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The test cases are incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.11.2.2.3.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

### <Start of Change 1>

##### A.11.2.2.3.1 Redirection from NR FR1 carrier under CCA to NR FR1 carrier under CCA

A.11.2.2.3.1.1 Test Purpose and Environment

This test is to verify RRC connection release with redirection from NR FR1 carrier under CCA to NR FR1 carrier under CCA specified in clause 6.2.3.2.3.

A.11.2.2.3.1.2 Test Parameters

Supported test configurations are shown in table A.11.2.2.3.1.2-1. The time delay is tested by using the parameters in table A.11.2.2.3.1.2-2, and A.11.2.2.3.1.2-3.

The test consists of two successive time periods, with time duration of T1, and T2 respectively. The *RRCRelease* message shall be sent to the UE during period T1 and the start of T2 is the instant when the last TTI containing the RRC message is sent to the UE. Prior to time duration T2, the UE shall not have any timing information of Cell 2. Cell 2 is powered up at the beginning of the T2.

Table A.11.2.2.3.1.2-1: Redirection from NR to NR test configurations

|  |  |
| --- | --- |
| Config | Description |
| 1 | Source cell: NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode  Target cell: NR 30 kHz SSB SCS, 40 MHz bandwidth, TDD duplex mode |

Table A.11.2.2.3.1.2-2: General test parameters for Redirection from NR to NR test case

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | | Unit | Value | Comment |
| Initial conditions | Active cell |  | Cell 1 | On the carrier under CCA |
|  | Neighbouring cell |  | Cell 2 | On the carrier under CCA |
| Final condition | Active cell |  | Cell 2 | On the carrier under CCA |
| Filter coefficient | |  | 0 | L3 filtering is not used |
| Access Barring Information | | - | Not Sent | No additional delays in random access procedure. |
| Time offset between cells | |  | 3 μs | Synchronous cells |
| T1 | | s | 5 |  |
| T2 | | s | ≥ Tconnection\_release\_redirect\_NR\_CCA | Tconnection\_release\_redirect\_NR\_CCA ­is defined in clause 6.2.3.2.3 |

Table A.11.2.2.3.1.2-3: Cell specific test parameters for Redirection from NR to NR test case

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | | Unit | Cell 1 | | | | Cell 2 | | |
|  | | |  | T1 | | T2 | | T1 | | T2 |
| NR RF Channel Number | | |  | 1 | | | | 2 | | |
| CCA model | | |  | TBD | | | | TBD | | |
| PCCA\_DL | | |  | [TBD] | | | | [TBD] | | |
| PCCA\_UL | | |  | [TBD] | | | | [TBD] | | |
| TDD configuration | | Config 1 |  | TDDConf.1.1 CCA | | | | | | |
| BWchannel | | Config 1 |  | 40: NRB,c = 106 | | | | | | |
| BWP BW | | Config 1 |  | 40: NRB,c = 106 | | | | | | |
| DRX Cycle | | | ms | Not Applicable | | | | | | |
| PDSCH Reference | | Config 1 |  | SR.1.1 CCA | | | | | | |
| CORESET Reference Channel | | Config 1 |  | CR.1.1 CCA | | | | | | |
| TRS configuration | | Config 1 |  | TRS.1.2 TDD | | | | | | |
| OCNG Patterns | | |  | OP.1 | | | | | | |
| SMTC Configuration | | |  | SMTC.1 | | | | | | |
| DBT configuration | | |  | DBT.1 | | | | | | |
| SSB configuration for semi-static channel access | | Config 1 |  | SSB.1 CCA | | | | | | |
| SSB configuration for dynamic channel access | | Config 1 |  | SSB.2 CCA | | | | | | |
| ssb-PositionQCL | | Config 1 |  | [1] | | | | | | |
| PDSCH/PDCCH subcarrier spacing | | Config 1 | kHz | 30 kHz | | | | | | |
| PUCCH/PUSCH subcarrier spacing | | Config 1 | kHz | 30 kHz | | | | | | |
| PRACH configuration | | |  | FR1 PRACH configuration 1 | | | | | | |
| BWP configuration | | Initial DL BWP |  | DLBWP.0.1 | | | | | | |
|  | | Dedicated DL BWP |  | DLBWP.1.1 | | | | | | |
|  | | Initial UL BWP |  | ULBWP.0.1 | | | | | | |
|  | | Dedicated UL BWP |  | ULBWP.1.1 | | | | | | |
| EPRE ratio of PSS to SSS | | | dB | 0 | | | | | | |
| EPRE ratio of PBCH DMRS to SSS | | |
| EPRE ratio of PBCH to PBCH DMRS | | |
| EPRE ratio of PDCCH DMRS to SSS | | |
| EPRE ratio of PDCCH to PDCCH DMRS | | |
| EPRE ratio of PDSCH DMRS to SSS | | |
| EPRE ratio of PDSCH to PDSCH | | |
| EPRE ratio of OCNG DMRS to SSS(Note 1) | | |
| EPRE ratio of OCNG to OCNG DMRS (Note 1) | | |
| Note2 | | | dBm/15kHz | -98 | | | | | | |
| Note2 | Config 1 | | dBm/SCS | -95 | | | | | | |
|  | | | dB | 4 | 4 | | -infinity | | 4 | |
|  | | | dB | 4 | 4 | | -infinity | | 4 | |
| IoNote3 | Config 1 | | dBm/  38.16MHz | -58.49 | -58.49 | | -63.94 | | -58.49 | |
| Propagation condition | | | - | AWGN | | | AWGN | | | |
| Note 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.  Note 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for  to be fulfilled.  Note 3: Io levels have been derived from other parameters for information purposes. They are not settable parameters themselves. | | | | | | | | | | |

A.11.2.2.3.1.3 Test Requirements

The UE shall start to transmit the PRACH to Cell 2 less than Tconnection\_release\_redirect\_NR\_CCA ms from the beginning of time period T2, where Tconnection\_release\_redirect\_NR\_CCA is defined in clause 6.2.3.2.3.

The rate of correct RRC connection release redirection to NR observed during repeated tests shall be at least 90%.

NOTE: The redirection delay can be expressed as:

Tconnection\_release\_redirect\_NR\_CCA = TRRC\_procedure\_delay + Tidentify-NR\_CCA + TSI-NR\_CCA + TRACH\_CCA,

where:

TRRC\_procedure\_delay = 110 ms in the test.

Tidentify-NR = MAX (680 ms, (L1+11) × 20 ms) in the test.

TSI-NR = ms, it is the time required for receiving all the relevant system information as defined in TS 38.331 for the target NR cell.

TRACH is the delay uncertainty in acquiring the first available PRACH occasion in the target NR cell.

L1 is the number of SMTC occasions not available at the UE due to DL CCA failures.

### <End of Change 1>