**3GPP TSG- Meeting # *R4-2409808***

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **-** | **rev** | 1 | **Current version:** |  |  |
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| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network |  |

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| ***Title:*** | (NR\_netcon\_repeater-Perf) draft CR to TS 38.114 | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_netcon\_repeater-Perf | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | * According to the worksplit outlined in the approved WF (R4-2405992), write draft CR to introduce NCR to TS 38.114. | | | | | | | | |
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| ***Summary of change:*** | | * The concept of NCR has been incorporated in the clauses on general test conditions and performance assessment. | | | | | | | | |
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| ***Consequences if not approved:*** | | * NCR is not included in TS 38.114. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.1, 5.1, 5.2 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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# 4 Test conditions

## 4.1 General

Requirements throughout the EMC specifications are in some cases defined separately for different frequency ranges (FR). The frequency ranges FR1 and FR2 are defined in clause 5.1 of TS 38.106 [2]. NR Repeater and NCR are designed to operate in FR1 and FR2-1.

The equipment shall be tested in normal test environment defined in the corresponding NR Repeater conformance testing specification TS 38.115-1 [3] for *NR Repeater type 1-C, NCR type 1-C, NCR type 1-H* or TS 38.115-2 [4] for *NR Repeater type 2-O, NCR type 2-O.* The test conditions shall be recorded in the test report.

For Repeater capable of multi-band operation, the requirements in the present document apply for each supported *operating band* unless otherwise stated. *Operating bands* shall be activated according to the test configuration in clause 4.5. Tests shall be performed relating to each type of port and all *operating bands* shall be assessed during the tests.

The manufacturer shall declare the supported *operating band(s)* according to the list of NR repeater *operating bands* defined in TS 38.106 [2].

NOTE 1: NR *operating bands* for *NR repeater type 1-C*, *NCR type 1-C* and *NCR type 1-H*, are declared by the manufacturer according to the declaration D.2 specified in TS 38.115-1 [3], table 4.6-1.

NOTE 2: NR *operating bands* for *NR repeater type 2-O* and *NCR type 2-O,* are declared by the manufacturer according to the declaration D.4 specified in TS 38.115-2 [4], table 4.6-1.

## 4.2 Arrangements for establishing a communication link

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# 5 Performance assessment

## 5.1 General

The following information shall be recorded in or annexed to the test report:

- The primary functions of the radio equipment to be tested during and after the EMC testing;

- The intended functions of the radio equipment which shall be in accordance with the documentation accompanying the equipment;

- The method to be used to verify that a communications link is established and maintained;

- The user-control functions and stored data that are required for normal operation and the method to be used to assess whether these have been lost after EMC stress;

- The *ancillary equipment* to be combined with the radio equipment for testing (where applicable);

- The information about *ancillary equipment* intended to be used with the radio equipment;

- Information about the common and/or band-specific active RF components and other hardware blocks for a communication link in EUT capable of multi-band operation;

- An exhaustive list of ports (or RIBs), classified as either power or signal/control. Power ports shall further be classified as AC or DC power.

Performance assessment of a NR repeater or NCR with multiple enclosures may be done separately, according to the manufacturer's choice.

A communication link used by more than one *operating band*, shall be assessed on all *operating band*s. Communication link(s) and/or radio performance parameters for the *operating band*s can during the test be assessed simultaneously or separately for each band, depending on the test environment capability.

## 5.2 NR repeaters and NCR

The parameter used for assessment of performance of a NR repeater and NCR-fwd is the power accuracy within the operating band.

For downlink assessment of the NCR-MT, a communication link shall be established between the transmitter (via port for the *NCR type 1-C* and *NCR type 1-H*, or via RIB for the *NCR type 2-O*) and the test equipment. Test equipment shall meet the requirements for the throughput assessment defined in TS 38.106 [2] for the bearer used in the immunity tests. The level of the signal supplied to the equipment should be within the range for which the assessment of throughput is not impaired. Power control shall be OFF during the immunity testing.

For uplink assessment of the NCR-MT, the value of the throughput at the output of the receiver shall be monitored at NG interface by using suitable test equipment.

## 5.3 Ancillary equipment

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