3GPP TSG-RAN WG4 Meeting #111 R4-240xxxx

**Fukuoka, Japan, 20 May – 24 May 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.133** | **CR** | **-** | **rev** | **-** | **Current version:** | **18.5.1** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Draft CR for AoA set up for multi-rx and TC for GBBR measurement accuracy | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, Samsung | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_FR2\_multiRX\_DL-Perf | | | | |  | ***Date:*** | | | 2024-05-10 |
|  |  | | | |  | |  | | |  |
| ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | New AoA setup are needed for defining the TC for UE supporitng multi-rx Dl simultaneous reception in the TS 38.133 | | | | | | | | |
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| ***Summary of change:*** | | New AoA setup for UE supporitng multi-rx Dl simultaneous reception is introduced | | | | | | | | |
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| ***Consequences if not approved:*** | | The multi-rx feature is not complete. | | | | | | | | |
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| ***Clauses affected:*** | | (new) A.3.15.X1, (new) A.3.15.X2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **Y** |  | Test specifications | | | | TS 38.533 | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of Change #1>

### A.3.15.X1 Setup X1: 2 AoAs for simultaneous reception with QCL Type-D

There are 2 active probes in the test. The DL signals, and noise if applicable, transmitted from the two active probes. The 2 AoAs (AoA1 and AoA2) for simultaneous reception with different QCL-typeD is from the set of [qualified AoA pairs] according to the spherical coverage requirement for simultaneous reception from multiple directions as defined in clause 7.3K.3 of TS 38.101-2 for power class 3 supporting simultaneous reception from multiple directions, the angular separation between the directions (AoAs) of the 2 active probes is declared from Table 7.3K.3-1 in clause 7.3K.3 of TS 38.101-2 [19] and shall not be changed for each test iteration.

[The relative angular offset between the directions of the AoA pair is based on the UE’s declared [AoA separation and UE] orientation as defined in clause 7.3K.3 of TS 38.101-2.]

One of the AoAs (AoA1) needs to satisfy the spherical coverage requirement in Table 7.3.4.3-1 of TS 38.101-2.

Editor’s note: FFS how single AoA RF test and 2 AoA RF test could ensure this.

### A.3.15.X2 Setup X2: 3 AoAs for simultaneous reception with different QCL Type-D

There are 3 active probes in the test and at any time point in the test, UE needs to receive at most from two active probes simultaneously. The DL signals, and noise are transmitted from the three active probes.

Out of the three AoA, one AoA (AoA1) is aligned to a direction which is from the set of directions corresponding to the EIS spherical coverage percentile of the DUT as defined in clause 7.3.4 of TS 38.101-2 [19] for UE power class 3 and other 2 AoAs (AoA2, AoA3) are from the set of [qualified AoA pairs] according to the spherical coverage requirement for simultaneous reception from multiple directions as defined in clause 7.3K.3 of TS 38.101-2 for power class 3 supporting simultaneous reception from multiple directions, the angular separation between the directions (AoAs) of the 2 active probes is declared from Table 7.3K.3-1 in clause 7.3K.3 of TS 38.101-2 [19] and shall not be changed for each test iteration.

[The relative angular offset between the directions of the AoA pair is based on the UE’s declared [AoA separation and UE] orientation as defined in clause 7.3K.3 of TS 38.101-2.]

<End of Change #1>