**3GPP TSG-SA5 Meeting #132-e *S5-204346***

**Online, 17th Aug 2020 - 28th Aug 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **28.552** | **CR** | **0259** | **rev** | **-** | **Current version:** | **16.6.0** |  |
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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:***  |  |
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| ***Source to WG:*** | China Telecom Corporation Ltd., ZTE |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | ePM\_KPI\_5G |  | ***Date:*** | 2020-08-07 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-17 |
|  | *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 canbe 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | The distribution of the PDSCH and PUSCH RBs of MU-MIMO used in different spatial layer can be used to calculate the average scheduled RBs per layer, and help to analyse user-pairing and RB scheduling strategies and the performance of the network who is using MU-MIMO. |
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| ***Summary of change:*** | Add PDSCH/PUSCH RB distribution per layer of MU-MIMO |
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| ***Consequences if not approved:*** |  |
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| ***Clauses affected:*** | 5.1.1.X(new), 5.1.1.X.1(new), 5.1.1.X.2(new), A.X(new) |
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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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| **1st change** |

##### 5.1.1.X MU-MIMO related measurements

##### 5.1.1.X.1 Scheduled PDSCH RBs per layer of MU-MIMO

a) This measurement provides the distribution of the scheduled PDSCH RBs per MU-MIMO layer by NG-RAN in MU-MIMO scenario.

b) CC

c) This measurement is obtained by incrementing the appropriate measurement bin with the number of the PDSCH RBs according to the DL MU-MIMO layer. (For example, if two layers multiplex one RB, add one to CARR.MUPDSCHRB.BIN2.) The retransmitted RBs should be included, and the RBs used for broadcast should be excluded.

d) Each measurement is a single integer value.

e) CARR.MUPDSCHRB.BINX, where X represents the MU-MIMO layer value (2 to n).

f) NRCellDU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.X.2 Scheduled PUSCH RBs per layer of MU-MIMO

a) This measurement provides the distribution of the scheduled PUSCH RBs per MU-MIMO layer by NG-RAN in MU-MIMO scenario.

b) CC.

c) This measurement is obtained by incrementing the appropriate measurement bin with the number of the PUSCH RBs according to the MU-MIMO layer. (For example, if two layers multiplex one RB, add one to CARR.MUPUSCHRB.BIN2.) The retransmitted RBs should be included.

d) Each measurement is a single integer value.

e) CARR.MUPUSCHRB.BINX, where X represents the MU-MIMO layer value (2 to n).

f) NRCellDU.

g) Valid for packet switching.

h) 5GS.

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| **Next change** |

# A.X Use case of MU-MIMO measurements

The application of MU-MIMO greatly improves the network capacity. Whether MU-MIMO getting the most out of itself will impact the improvement of network capacity and performance. MU-MIMO related statistics can reflect the disparity between the actual effect of MU-MIMO and the maximum layers supported by the network, and help to fix and improve the MU-MIMO algorithm.

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| **End of changes** |