**3GPP TSG SA WG5 (Telecom Management) Meeting #130e *S5-202208***

**20-28 April 2020, E-meeting**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **28.552** | **CR** | **0221** | **rev** | **1** | **Current version:** | **16.5.0** |  |
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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:*** | Add DSS PRB usage measurements | | | | | | | | | |
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| ***Source to WG:*** | ZTE, China Telecom | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_SLICE\_ePA | | | | |  | ***Date:*** | | | 2020/4/10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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-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:*** | | Dynamic spectrum sharing (DSS) provides a very useful migration path from LTE to NR by allowing LTE and NR to share the same carrier. DSS was included already in Rel-15 and further enhanced in Rel-16. (see RP-193260). | | | | | | | | |
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| ***Summary of change:*** | | Add DSS PRB usage measurements | | | | | | | | |
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| ***Consequences if not approved:*** | | Dynamic spectrum sharing PRB usage is missed. | | | | | | | | |
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| ***Clauses affected:*** | | 5.1.1.2.X(new), 5.1.1.2.Z(new), 5.1.1.2.B(new), 5.1.1.2.D(new), A.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **1st modified section** |

##### 5.1.1.2.X UL PRB used by NR Dynamic Spectrum Sharing

a) This measurement provides the number of physical resource blocks (PRBs) in total used by NR cell in uplink Dynamic Spectrum Sharing from LTE Spectrum.

b) CC.

c) Each measurement is obtained as the all PRBs used for UL transmission used in uplink Dynamic Spectrum Sharing.

d) Each measurement is a single integer value.

e) RRU.PrbUsedUlDSS.

f) NRCELLDU

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this measurement is for monitoring the UL PRB load of the radio physical layer at Dynamic Spectrum Sharing scenario.

##### 5.1.1.2.D UL total available NR PRB for Dynamic Spectrum Sharing

a) This measurement provides the total number of available UL physical resource blocks (PRBs) in NR cell at Dynamic Spectrum Sharing from LTE Spectrum.

b) CC.

c) The measurement is obtained total available count of PRBs available for NR cell uplink Dynamic Spectrum Sharing*.*

d) Each measurement is a single integer value.

e) RRU.PrbAvailUlDSS*.*

f) NRCELLDU.

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this measurement is for monitoring the total number of available PRBs in uplink at Dynamic Spectrum Sharing scenario.

##### 5.1.1.2.Z DL PRB used by NR for Dynamic Spectrum Sharing

a) This measurement provides the number of physical resource blocks (PRBs) in total used by NR cell in downlink Dynamic Spectrum Sharing from LTE Spectrum.

b) CC.

c) Each measurement is obtained as the all PRBs used for DL data traffic transmission used by NR cell in downlink Dynamic Spectrum Sharing.



d) Each measurement is a single integer value.

e) RRU.PrbUsedDlDSS.

f) NRCELLDU

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this measurement is for monitoring the DL PRB load of the radio physical layer at Dynamic Spectrum Sharing scenario.

##### 5.1.1.2.B DL total available NR PRB for Dynamic Spectrum Sharing

a) This measurement provides the total available number of physical resource blocks (PRBs) in NR cell downlink Dynamic Spectrum Sharing from LTE Spectrum.

b) CC.

c) The measurement is obtained total available PRBs available for NR cell when downlink Dynamic Spectrum Sharing*.*

d) Each measurement is a single integer value.

e) RRU.PrbAvailDlDSS*.*

f) NRCELLDU.

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this measurement is for monitoring the total number of available PRBs in downlink at Dynamic Spectrum Sharing scenario.

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| **Next modified section** |

# A.6 Monitoring of physical radio resource utilization

The physical radio resource utilization measurements could provide operators the load information of the radio network during the measurement time period. The physical radio resource utilization measurements should reflect the average usage and the usage distribution of the radio resource of the physical layer. The measurements can make the operator to be aware of whether a cell has ever experienced high load or not in the monitoring period, and is a key input to network capacity planning and load balancing.

Monitoring physical radio resource utilization of NR dynamic spectrum sharing from LTE spectrum is helpful for operators to be aware of the load.

Network slicing is an important feature in 5GS, monitoring physical radio resource utilization per S-NSSAI is helpful for opeators to be aware of the load.

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| **End of modifications** |