**3GPP TSG-SA5 Meeting #129-e *S5-201325***

**Online, 24th Feb 2020 - 4th Mar 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **28.552** | **CR** | **0194** | **rev** | **-** | **Current version:** | **16.4.0** |  |
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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 Telecommunications, ZTE |
| ***Source to TSG:*** | S5 |
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| ***Work item code:*** | 5G\_SLICE\_ePA |  | ***Date:*** | 2020-02-12 |
|  |  |  |  |  |
| ***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 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:*** | Measurement of SS-RSRP (see TS 38.215 5.1.1) is useful to monitor the quality of the coverage. NRCell can update the strongest RSRP of SSB beam by tracking UE’s measurements. Performance measurements for SSB beam switch is necessary to improve the accuracy and efficient of network optimization. |
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| ***Summary of change:*** | Adding measurements for beam switch. |
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| ***Consequences if not approved:*** | Imcomplete measurements potentially affects the implementations of network optimization. |
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| ***Clauses affected:*** | 2, 3.4, 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** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 32.401: "Telecommunication management; Performance Management (PM); Concept and requirements".

[3] 3GPP TS 32.404: "Performance Management (PM); Performance measurements - Definitions and template".

[4] 3GPP TS 23.501: "System Architecture for the 5G System".

[5] IETF RFC 5136: "Defining Network Capacity".

[6] 3GPP TS 38.473: "NG-RAN; F1 Application Protocol (F1AP)".

[7] 3GPP TS 23.502: "Procedures for the 5G System".

[8] 3GPP TS 28.554: "Management and orchestration; 5G end to end Key Performance Indicators (KPI)".

[9] 3GPP TS 32.425: "Performance Management (PM); Performance measurements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN)".

[10] 3GPP TS 32.451: "Key Performance Indicators (KPI) for Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Requirements".

[11] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[12] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[13] 3GPP TS 38.423: "NG-RAN; Xn Application Protocol (XnAP)".[14] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[15] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".

[16] 3GPP TS 29.244: "Technical Specification Group Core Network and Terminals; Interface between the Control Plane and the User Plane Nodes; Stage 3".

[17] ETSI GS NFV-IFA027 v2.4.1: "Network Functions Virtualisation (NFV); Management and Orchestration; Performance Measurements Specification".

[18] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[X] 3GPP TS 38.321: "NR MAC protocol specification".

[Y] 3GPP TS 38.321: "NR; Radio Resource Control (RRC) protocol specification"

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| **Next change** |

## 3.4 Measurement family

The measurement names defined in the present document are all beginning with a prefix containing the measurement family name. This family name identifies all measurements which relate to a given functionality and it may be used for measurement administration.

The list of families currently used in the present document is as follows:

- DRB (measurements related to Data Radio Bearer)

- RRC (measurements related to Radio Resource Control)

- UECNTX (measurements related to UE Context)

- RRU (measurements related to Radio Resource Utilization)

- RM (measurements related to Registration Management)

- SM (measurements related to Session Management)

- GTP (measurements related to GTP Management)

- IP (measurements related to IP Management)

- PA (measurements related to Policy Association)

- MR (measurements related to Measurement Report)

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| **Next change** |

#### 5.1.1.X Intra-NRCell SSB Beam switch Measurement

##### 5.1.1.X.1 Number of requested Intra-NRCell SSB Beam switch executions

a) This measurement provides the number of outgoing intra-NRCell SSB Beam switch executions requested by the source SSB Beam in an NRCell in case the beam switch function is enabled (see 3GPP TS 38.331[Y]).

b) CC.

c) On transmission of ***tci-StatesPDCCH-ToAddList*** in MAC CE to the UE triggering the switch from the source SSB Beam to the target SSB Beam, indicating the attempt of an outgoing intra-NRCell SSB Beam switch (see 3GPP TS 38.321 [X]), the counter is stepped by 1.

d) A single integer value.

e) MR.IntraCellSSBSwitchReq

f) Beam

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for performance assurance. This measurement is only applicable when the beam switch function is activated.

###### 5.1.1.X.2 Number of successful Intra-NRCell SSB Beam switch executions

a) This measurement provides the number of successful intra-NRcell SSB Beam switch executions received by the source SSB Beam in case the beam switch function is enabled (see 3GPP TS 38.331[Y]).

b) CC

c) On reception of *HARQ ACK in MAC CE* from the UE to the target SSB Beam indicating a successful intra-NRCell SSB Beam switch (see 3GPP TS 38.321 [X]), the counter is stepped by 1.

d) A single integer value.

e) MR.IntrCellSuccSSBSwitch

f) Beam

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for performance assurance. This measurement is only applicable when the beam switch function is activated.

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| **Next change** |

# A.X Monitoring of beam switches

Beam is an important feature in 5G network. In case the intra-beam switch function is enabled (see 3GPP TS 38.331), due to the complexity of the radio environment, especially when UE moves quickly and frequently, it is possible to have problems such as pointing deviation, which can lead to switch failure. The success rate of beam switch can help to reflect whether there is a problem in beam related parameter configuration. Furthermore, low beam switch success rate will impact user experience. Therefore, it is essential in network operations to monitor the success rate of beam switch and to define the related measurements.

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| **End of changes** |