**3GPP TSG-SA5 Meeting #155 *S5-243268***

Jeju, Korea, 27 May - 31 May 2024

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** | **18.6.0** |  |
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| *For* [***HELP***](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:***  | New performance measurements for Number of UE Capability enquiry and information messages |
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| ***Source to WG:*** | Apple, Intel, Verizon, AT&T |
| ***Source to TSG:*** | SA5 |
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| ***Work item code:*** | PM\_KPI\_5G\_Ph4 |  | ***Date:*** | 2024-27-05 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* *Rel-19 (Release 19)* |
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| ***Reason for change:*** | Currently there is no performance measure defined in TS 28.552 quantifying the number of UE Capability enquiry or UE capability information messages broken down by whether such enquiry messages request or not the UE to report its ENDC and/or NRDC related capabilities, and whether the UE capability information messages as sent by that UE, contain or not ENDC and/or NRDC support. In this CR, it is proposed to define new performance measurements for the number of UE Capability Enquiry Requests, Number of UE Capability Enquiry omitting ENDC information, Number of UE Capability Enquiry requesting NRDC information, Number of UE Capability information omitting ENDC feature support information and Number of UE Capability information including NRDC feature support. One usage of these performance measurements is how best the gNB resources are used to best serve these UEs by proactively scaling up or down the gNB side used resources (in terms of used bandwidth and dual connectivity/carrier aggregation capabilities), i.e. do a context aware resource load balancing. |
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| ***Summary of change:*** | Adding new performance measures capturing the number of UE Capability Enquiry Requests, Number of UE Capability Enquiry omitting ENDC information, Number of UE Capability Enquiry requesting NRDC information, Number of UE Capability information omitting ENDC feature support information and Number of UE Capability information including NRDC feature support. |
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| ***Consequences if not approved:*** | Without these performance measures, percentage of UE Capability Enquiry information messages that request/contain ENDC or NRDC UE capabilities, cannot be derived. |
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| ***Clauses affected:*** | 5.1.1.v (new), 5.1.1.w (new), 5.1.1.x (new), 5.1.1.y (new), 5.1.1.z (new), A.x (new) |
|  |  |
|  | **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:*** | Revision of S5-242631 |

>>>>BEGINNING OF CHANGES<<<<

###### 5.1.1.v Number of UE Capability Enquiry Requests

a) This measurement provides the number of UE Capability enquiry messages, the gNB sends to UEs being served by it.

b) CC

c) On transmission of UE Capability enquiry message (see TS 38.331 [20]) from the gNB to a given UE, this counter is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.UECapEnquiry

f) NRCellCU

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for assessing how many UE capability Enquiry procedures are triggered

>>>>NEXT CHANGE<<<<

###### 5.1.1.w Number of UE Capability Enquiry omitting ENDC information

a) This measurement provides the number of UE Capability enquiry messages, that omit requesting band combinations and feature set combinations which are only applicable to (NG)EN-DC, i.e that contain omitEN-DC IE set to True (see TS 38.331 [20]), the gNB sends to UEs being served by it.

b) CC

c) On transmission of UE Capability enquiry message, containing omitEN-DC IE (see TS 38.331 [20]) set to True, from the gNB to a given UE, this counter is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.UECapEnquiry.OmitENDC

f) NRCellCU

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for assessing how many UE capability Enquiry procedures omit requesting ENDC band and feature set combinations from UEs.

>>>>NEXT CHANGE<<<<

###### 5.1.1.x Number of UE Capability Enquiry requesting NRDC information

a) This measurement provides the number of UE Capability enquiry messages, that request NR-DC band combinations and feature set combinations which are applicable to NR-DC, i.e that contain includeNR-DC IE set to True (see TS 38.331 [20]), the gNB sends to UEs being served by it.

b) CC

c) On transmission of UE Capability enquiry message (see TS 38.331 [20]), includeNR-DC IE set to True, from the gNB to a given UE, this counter is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.UECapEnquiry.IncludeNRDC

f) NRCellCU

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for assessing how many UE capability Enquiry procedures omit requesting NRDC band and feature set combinations from UEs.

>>>>NEXT CHANGE<<<<

###### 5.1.1.y Number of UE Capability information omitting ENDC feature support information

a) This measurement provides the number of UE Capability information messages sent by UEs to their serving gNB, that do not include band combinations and feature set combinations which are only applicable to (NG)EN-DC, i.e that do not contain any ue-CapabilityRAT-ContainerList container with IE rat-Type set to eutra-nr (see TS 38.331 [20]).

b) CC

c) On reception of UE Capability information message. that does not contain any ue-CapabilityRAT-ContainerList container with IE rat-Type set to eutra-nr (see TS 38.331 [20]), from UE served by this gNB, this counter is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.UECapInfo.OmitENDC

f) NRCellCU

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for assessing how many UEs support ENDC or not within the coverage of a given gNB.

>>>>NEXT CHANGE<<<<

###### 5.1.1.z Number of UE Capability information including NRDC feature support

a) This measurement provides the number of UE Capability information messages sent by UEs to their serving gNB, that include band combinations and feature set combinations which are applicable to NR-DC, i.e. that contain any ca-ParametersNRDC field (see TS 38.331 [20]).

b) CC

c) On reception of UE Capability information message. that include band combinations and feature set combinations which are applicable to NR-DC, i.e that contain any ca-ParametersNRDC field (see TS 38.331 [20]), from UE served by this gNB, this counter is incremented by 1.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.UECapInfo.IncludeNRDC

f) NRCellCU

g) Valid for packet switched traffic

h) 5GS

i) One usage of this performance measurements is for assessing how many UEs support NRDC or not within the coverage of a given gNB.

>>>>NEXT CHANGE<<<<

A.X Use case for Number of UE Capability Enquiry Requests and UE Information related performance measurements

The number of UE Capability Enquiry Requests, Number of UE Capability Enquiry omitting ENDC information and number of UE Capability Enquiry requesting NRDC information, when compared with number of UE Capability information including ENDC and/or NRDC features support are used to asses the impact of number of UEs supporting ENDC and/or NRDC features on how best the gNB resrouces are used to best serve these UEs by proactively scaling up or down the gNB side used resources (in terms of used bandwidth and dual connectivity/carrier aggregation capabilities), i.e. do a context aware resource load balancing.

>>>>END OF CHANGES<<<<