**3GPP TSG-SA5 Meeting #142-e *S5-222363***

**e-meeting, 4 - 12 April 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | 28.552 | **CR** | **Draft CR** | **rev** | 1 | **Current version:** | **17.6.0** |  |
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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:***  | Add the measurement object class to support MOCN network sharing with multiple Cell Identity broadcast scenarios |
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| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | SA5 |
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| ***Work item code:*** | MANS |  | ***Date:*** | 2022-03-23 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | In MOCN network sharing with multiple Cell Identity broadcast scenarios, some measurements (e.g. Attempted RRC connection establishments, Attempted RRC connection establishments, etc.), which are based on the message without PLMN Id information, cannot be measured per POP, so it is not apprepiate to use NRCellCU as the measurement object class. |
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| ***Summary of change:*** | Add NRCellDU as the measurement object class to some measurements. |
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| ***Consequences if not approved:*** | The measurements which are based on the message without PLMN Id information will be incorrect in MOCN network sharing with multiple Cell Identity broadcast scenarios. |
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| ***Clauses affected:*** | 5.1.1.15.1, 5.1.1.15.3, 5.1.1.17.1, 5.1.1.17.4, 5.1.1.18.1, 5.1.1.18.4, 5.1.1.18.5, 5.1.1.18.6 |
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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:*** |  |
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| ***This CR's revision history:*** |  |

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| **First change** |

#### 5.1.1.15 RRC connection establishment related measurements

##### 5.1.1.15.1 Attempted RRC connection establishments

a) This measurement provides the number of RRC connection establishment attempts for each establishment cause.

b) CC

c) Receipt of an RRCSetupRequest message by the gNB from the UE. Each RRCSetupRequest message received is added to the relevant per establishment cause measurement. RRCSetupRequests that are received while a setup procedure is already ongoing for this UE are excluded. RRCSetupRequests that are received during AMF Overload action (see clause 9.3.1.105 in TS 38.413) are effectively to be excluded from the measurement. The possible establishmentCause are included in TS 38.331 [20] (clause 6.2.2). The sum of all supported per cause measurement values shall be equal the total number of RRCSetupRequest.

d) Each measurement is an integer value. The number of measurements is equal to the number of establishment causes.

e) RRC.ConnEstabAtt.*Cause* where *Cause* identifies the establishment cause.

f) NRCellCU, NRCellDU.

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this performance measurements is for performance assurance within accessibility area.

##### 5.1.1.15.2 Successful RRC connection establishments

a) This measurement provides the number of successful RRC establishments for each establishment cause.

b) CC

c) Receipt by the gNB of an RRCSetupComplete message following a RRC connection setup request. Each RRCSetupComplete message received is added to the relevant per establishment cause measurement. The possible causes are included in TS 38.331 [20] (clause 6.2.2). The sum of all supported per cause measurements shall be equal the total number of RRCSetupComplete messages.

d) Each measurement is an integer value. The number of measurements is equal to the number of establishment causes.

e) RRC.ConnEstabSucc.*Cause* where *Cause* identifies the establishment cause.

f) NRCellCU.

g) Valid for packet switched traffic.

h) 5GS.

i) One usage of this performance measurements is for performance assurance within accessibility area.

##### 5.1.1.15.3 Failed RRC connection establishments

a) This measurement provides the number of failed RRC establishments, this measurmenet is split into subcounters per failure cause.

b) CC

c) On transmission of *RRCReject* message from the gNB to UE or the expected *RRCSetupComplete* message was not received by the gNB from UE after the *RRCSetup message* (see TS 38.331 [20]). Each *RRCReject* message transmitted from gNB to UE is added to the subcounter for the cause '*NetworkReject*'; Each expected *RRCSetupComplete* message unreceived by the gNB after the *RRCSetup message* is added to the subcounter for cause '*NoReply*'; and each failed RRC connection establishment caused by the other reasons is added to measurement cause '*Other*'.

d) Each measurement is an integer value.

e) RRC.ConnEstabFailCause.*NetworkReject*RRC.ConnEstabFailCause.*NoReply*RRC.ConnEstabFailCause.*Other*

f) NRCellDU, NRCellCU.

g) Valid for packet switched traffic.

h) 5GS

i) One usage of this performance measurements is for performance assurance within accessibility area.

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| **Next change** |

#### 5.1.1.17 RRC Connection Re-establishment

##### 5.1.1.17.1 Number of RRC connection re-establishment attempts

a) This measurement provides the number of RRC connection re-establishment attempts.

b) CC.

c) On Receipt of *RRCReestablishmentRequest* message from UE (see TS 38.331[20]).

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ReEstabAtt.

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.17.2 Successful RRC connection re-establishment with UE context

a) This measurement provides the successful number of RRC connection re-establishment when UE context can be retrieved.

b) CC.

c) On Receipt of a *RRCReestablishmentComplete* message from UE for RRC connection re-establishment (see TS 38.331[20]).

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ReEstabSuccWithUeContext.

f) NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.17.3 Successful RRC connection re-establishment without UE context

a) This measurement provides the successful number of RRC connection re-establishment when UE context can not be retrieved.

b) CC.

c) On Receipt of a *RRCSetupComplete* message from UE for RRC connection re-establishment (see TS 38.331[20]).

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ReEstabSuccWithoutUeContext.

f) NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.17.4 Number of RRC connection re-establishment attempts followed by RRC Setup

a) This measurement provides the number of RRC connection re-establishment attempts where no UE context could be retrieved and therefore fallback to RRC Setup procedure was attempted.

b) CC.

c) On transmission of *RRCSetup* message to UE, after first having received *RRCReestablishmentRequest* message from that UE (see TS 38.331[20]).

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ReEstabFallbackToSetupAtt.

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS.

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| **Next change** |

#### 5.1.1.18 RRC Connection Resuming

##### 5.1.1.18.1 Number of RRC connection resuming attempts

a) This measurement provides the number of RRC connection resuming attempts.

b) CC.

c) On Receipt of the *RRCResumeRequest* message or *RRCResumeRequest1* from UE.Each *RRCResumeRequest* is added to the relevant subcounter per resume cause.

d) Each subcounter is an integer value.

e) The measurement name has the form RRC.ResumeAtt.*cause*

 Where *cause* indicates the resume cause defined in clause 6.2.2 of TS 38.331 [20].

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.18.2 Successful RRC connection resuming

a) This measurement provides the total successful number of RRC connection resuming.

b) CC.

c) On Receipt of a *RRCResumeComplete* message from UE for RRC connection resuming. Each successful RRC connection resumingis added to the relevant subcounter per resume cause.

d) Each subcounter is an integer value.

e) The measurement name has the form RRC.ResumeSucc.*cause*

 Where *cause* indicates the resume cause defined in clause 6.2.2 of TS 38.331 [20].

f) NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.18.3 Successful RRC connection resuming with fallback

a) This measurement provides the successful number of RRC connection resuming by fallback to RRC connection establishment.

b) CC.

c) On Receipt of a *RRCSetupComplete* message from UE for RRC connection resuming by fallback to RRC connection establishment. Each successful RRC connection resumingis added to the relevant subcounter per resume cause.

d) Each subcounter is an integer value.

e) The measurement name has the form RRC.ResumeSuccByFallback.*cause.*

 Where *cause* indicates the resume cause defined in clause 6.2.2 of TS 38.331 [20].

f) NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.18.4 RRC connection resuming followed by network release

a) This measurement provides the number of RRC connection resuming followed by network release.

b) CC.

c) On Transmission of a *RRCRelease* message to UE after RRC connection resuming request.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ResumeFollowedbyNetworkRelease.

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.18.5 RRC connection resuming followed by network suspension

a) This measurement provides the number of RRC connection resuming followed by network suspension.

b) CC.

c) On Transmission of a *RRCRelease* with suspension configuration message to UE after RRC connection resume request.

d) Each measurement is an integer value.

e) The measurement name has the form RRC.ResumeFollowedbySuspension.

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS.

##### 5.1.1.18.6 Number of RRC connection resuming attempts followed by RRC Setup

a) This measurement provides the number of RRC connection resuming attempts where no UE context could be retrieved and therefore fallback to RRC Setup procedure was attempted.

b) CC.

c) On transmission of *RRCSetup* message to UE, after first having received *RRCResumeRequest* message or *RRCResumeRequest1* from UE, the relevant subcounter per resume cause is stepped.

d) Each subcounter is an integer value.

e) The measurement name has the form RRC.ResumeFallbackToSetupAtt*.cause*.

 Where *cause* indicates the RRC resume cause defined in clause 6.2.2 of TS 38.331 [20].

f) NRCellDU, NRCellCU.

g) Valid for packet switching.

h) 5GS

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| **End of changes** |