**3GPP TSG-RAN WG3 Meeting #109-e *R3-205715***

**17- 28 Aug 2020**

**Online**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.423** | **CR** | 0395 | **rev** | **-** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *For* ***[HE](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)******[LP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | Correction for TS38.423 on Unsuccessful Operation and Abnormal Conditions of MLB | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16 | | | | |  | ***Date:*** | | | 2020-08-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For the procedure of Resource Status Reporting Initiation over Xn, the description of Unsuccessful Operation is not completed and the description of Abnormal Conditions is still void. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Complete the description of Unsuccessful Operation and Abnormal Conditions.  Introduce the corresponding ASN.1.  Impact Analysis:  Impact assessment towards the previous version of the specification (same release):  This CR has no impact with the previous version of the specification for implementations following the statement introduced by this CR. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The function of Resource Status Reporting Initiation can not work properly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.4.10.3; 8.4.10.4; 9.1.3.20; 9.2.3.2; 9.3.4; 9.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<<<<<<<<<<<<<<<<<<<< Start of the first Change >>>>>>>>>>>>>>>>>>>>

#### 8.4.10.3 Unsuccessful Operation



Figure 8.4.10.3-1: Resource Status Reporting Initiation, unsuccessful operation

If any of the requested measurements cannot be initiated, NG-RAN node2 shall send the RESOURCE STATUS FAILURE message. The *Cause* IE shall be set to an appropriate value e.g. "Measurement Temporarily not Available" or "Measurement not Supported For The Object" for each requested measurement object. The NG-RAN node may use the *Complete Failure Cause Information* IE to enhance the failure cause information per measurement in the RESOURCE STATUS FAILURE message.

#### 8.4.10.4 Abnormal Conditions

If the initiating NG-RAN node1 does not receive either RESOURCE STATUS RESPONSE message or RESOURCE STATUS FAILURE message, the NG-RAN node1 may reinitiate the Resource Status Reporting Initiation procedure towards the same NG-RAN node, provided that the content of the new RESOURCE STATUS REQUEST message is identical to the content of the previously unacknowledged RESOURCE STATUS REQUEST message.

If the *Report Characteristics* IE bitmap is set to "0" (all bits are set to "0") in the RESOURCE STATUS REQUEST message then NG-RAN node2 shall initiate a RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "ReportCharacteristicsEmpty".

If the *Reporting Periodicity* IE value is not specified when at least one of the bits of the *Report Characteristics* IE, for which semantics is specified, is set to 1 then NG-RAN node2 shall initiate a RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "NoReportPeriodicity".

If the NG-RAN node2 received a RESOURCE STATUS REQUEST message which includes the *Registration Request* IE set to "start" and the *NG-RAN node1Measurement ID* IE corresponding to an existing on-going load measurement reporting, then NG-RAN node2 shall initiate a RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "ExistingMeasurementID".

If the *Registration Request* IE is set to "stop", "partial stop" or "add" and the RESOURCE STATUS REQUEST message does not contain *NG-RAN node2 Measurement ID* IE, NG-RAN node2 shall consider the procedure as failed and respond with the RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "Unknown NG-RAN node Measurement ID".

If the *Registration Request* IE is set to "partial stop" and the *Cell To Report* IE contains cells that have not been initiated for the reporting before, NG-RAN node2 shall consider the procedure as failed and respond with the RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "Cell not Available". If the *Registration Request* IE is set to "add" and the *Cell To Report* IE contains cells that have been initiated for the reporting before, NG-RAN node2 shall consider the procedure as failed and respond with the RESOURCE STATUS FAILURE message, the cause shall be set to appropriate value e.g. "Cell not Available".

<<<<<<<<<<<<<<<<<<<< End of the first Change >>>>>>>>>>>>>>>>>>>>

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#### 9.1.3.20 RESOURCE STATUS FAILURE

This message is sent by the NG-RAN node2 to NG-RAN node1 to indicate that for any of the requested measurement objects the measurement cannot be initiated.

Direction: NG-RAN node2 → NG-RAN node1.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3.1 |  | YES | reject |
| NG-RAN node1 Measurement ID | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | reject |
| Cause | M |  | 9.2.3.2 | Ignored by the receiver when the Complete Failure Cause Information IE is included. | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.3.3 |  | YES | ignore |
| **Complete Failure Cause Information** |  | *0..1* |  | Complete list of failure causes for all requested cells | YES | ignore |
| >**Complete Failure Cause Information Item** |  | *1 .. < maxnoofCellsinNG-RANnode >* |  |  | EACH | ignore |
| >>NR-Cell ID | M |  | NR CGI  9.2.2.7 |  | – |  |
| >>**Measurement Failure Cause List** |  | *1* |  |  | – |  |
| >>>**Measurement Failure Cause Item** |  | *1 ..< maxnoofFailedMeasObjects >* |  |  | EACH | ignore |
| >>>>Measurement Failed Report Characteristics | M |  | BITSTRING  (SIZE(32)) | Each position in the bitmap indicates measurement object the NG-RAN node2 is requested to report.  First Bit = PRB Periodic,  Second Bit = TNL Capacity Ind Periodic,  Third Bit =  Composite Available Capacity Periodic, Fourth Bit =Number of Active UEs, Fifth Bit =RRC connections.  Other bits shall be ignored by the NG-RAN node2. | – |  |
| >>>>Cause | M |  | 9.2.3.2 | Failure cause for measurements that cannot be initiated | – |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinNG-RANnode | Maximum no. cells that can be served by a NG-RAN node. Value is 16384. |
| maxnoofFailedMeasObjects | Max number of measurement objects that can fail per measurement. Value is 32. |

<<<<<<<<<<<<<<<<<<<< End of the Second Change >>>>>>>>>>>>>>>>>>>>

<<<<<<<<<<<<<<<<<<<< Start of the Third Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.3.2 Cause

The purpose of the *Cause* IE is to indicate the reason for a particular event for the XnAP protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| CHOICE *Cause Group* | M |  |  |  |
| >*Radio Network Layer* |  |  |  |  |
| >>Radio Network Layer Cause | M |  | ENUMERATED (  Cell not Available,  Handover Desirable for Radio Reasons,  Handover Target not Allowed,  Invalid AMF Set ID,  No Radio Resources Available in Target Cell,  Partial Handover,  Reduce Load in Serving Cell,  Resource Optimisation Handover,  Time Critical Handover,  TXnRELOCoverall Expiry,  TXnRELOCprep Expiry,  Unknown GUAMI ID,  Unknown Local NG-RAN node UE XnAP ID,  Inconsistent Remote NG-RAN node UE XnAP ID,  Encryption And/Or Integrity Protection Algorithms Not Supported,  Protection Algorithms Not Supported,  Multiple PDU Session ID Instances,  Unknown PDU Session ID,  Unknown QoS Flow ID,  Multiple QoS Flow ID Instances,  Switch Off Ongoing,  Not supported 5QI value,  TXnDCoverall Expiry,  TXnDCprep Expiry,  Action Desirable for Radio Reasons,  Reduce Load,  Resource Optimisation,  Time Critical action,  Target not Allowed,  No Radio Resources Available,  Invalid QoS combination,  Encryption Algorithms Not Supported,  Procedure cancelled,  RRM purpose,  Improve User Bit Rate,  User Inactivity,  Radio Connection With UE Lost,  Failure in the Radio Interface Procedure,  Bearer Option not Supported,  UP integrity protection not possible, UP confidentiality protection not possible,  Resources not available for the slice(s),  UE Maximum integrity protected data rate reason,  CP Integrity Protection Failure,  UP Integrity Protection Failure,  Slice(s) not supported by NG-RAN,  MN Mobility,  SN Mobility,  Count reaches max value,  Unknown Old NG-RAN node UE XnAP ID,  PDCP Overload,  DRB ID not available,  Unspecified,  …,  UE Context ID not known, Non-relocation of context, CHO-CPC resources to be changed,  RSN not available for the UP,  NPN access denied,  ReportCharacteristicsEmpty,  NoReportPeriodicity,  ExistingMeasurementID,  Unknown NG-RAN node Measurement ID, Measurement Temporarily not Available,  Measurement not Supported For The Object) |  |
| *>Transport Layer* |  |  |  |  |
| >>Transport Layer Cause | M |  | ENUMERATED (Transport Resource Unavailable,  Unspecified, …) |  |
| *>Protocol* |  |  |  |  |
| >>Protocol Cause | M |  | ENUMERATED (Transfer Syntax Error, Abstract Syntax Error (Reject), Abstract Syntax Error (Ignore and Notify), Message not Compatible with Receiver State,  Semantic Error,  Abstract Syntax Error (Falsely Constructed Message), Unspecified, …) |  |
| *>Misc* |  |  |  |  |
| >>Miscellaneous Cause | M |  | ENUMERATED (Control Processing Overload, Hardware Failure,  O&M Intervention,  Not enough User Plane Processing Resources,  Unspecified, …) |  |

The meaning of the different cause values is specified in the following table. In general, “not supported” cause values indicate that the related capability is missing. On the other hand, “not available” cause values indicate that the related capability is present, but insufficient resources were available to perform the requested action.

|  |  |
| --- | --- |
| Radio Network Layer cause | Meaning |
| Cell not Available | The concerned cell is not available. |
| Handover Desirable for Radio Reasons | The reason for requesting handover is radio related. |
| Handover Target not Allowed | Handover to the indicated target cell is not allowed for the UE in question. |
| Invalid AMF Set ID | The target NG-RAN node doesn’t belong to the same AMF Set of the source NG-RAN node, i.e. NG handovers should be attempted instead. |
| No Radio Resources Available in Target Cell | The target cell doesn’t have sufficient radio resources available. |
| Partial Handover | Provides a reason for the handover cancellation. The target NG-RAN node did not admit all PDU Sessions included in the HANDOVER REQUEST and the source NG-RAN node estimated service continuity for the UE would be better by not proceeding with handover towards this particular target NG-RAN node. |
| Reduce Load in Serving Cell | Load in serving cell needs to be reduced. When applied to handover preparation, it indicates the handover is triggered due to load balancing. |
| Resource Optimisation Handover | The reason for requesting handover is to improve the load distribution with the neighbour cells. |
| Time Critical Handover | Handover is requested for time critical reason i.e. this cause value is reserved to represent all critical cases where the connection is likely to be dropped if handover is not performed. |
| TXnRELOCoverall Expiry | The reason for the action is expiry of timer TXnRELOCoverall. |
| TXnRELOCprep Expiry | Handover Preparation procedure is cancelled when timer TXnRELOCprep expires. |
| Unknown GUAMI ID | The target NG-RAN node belongs to the same AMF Set of the source NG-RAN node and recognizes the AMF Set ID. However, the GUAMI value is unknown to the target NG-RAN node. |
| Unknown Local NG-RAN node UE XnAP ID | The action failed because the receiving NG-RAN node does not recognise the local NG-RAN node UE XnAP ID. |
| Inconsistent Remote NG-RAN node UE XnAP ID | The action failed because the receiving NG-RAN node considers that the received remote NG-RAN node UE XnAP ID is inconsistent.. |
| Encryption And/Or Integrity Protection Algorithms Not Supported | The target NG-RAN node is unable to support any of the encryption and/or integrity protection algorithms supported by the UE. |
| Multiple PDU Session ID Instances | The action failed because multiple instances of the same PDU Session had been provided to the NG-RAN node. |
| Unknown PDU Session ID | The action failed because the PDU Session ID is unknown in the NG-RAN node. |
| Unknown QoS Flow ID | The action failed because the QoS Flow ID is unknown in the NG-RAN node. |
| Multiple QoS Flow ID Instances | The action failed because multiple instances of the same QoS flow had been provided to the NG-RAN node. |
| Switch Off Ongoing | The reason for the action is an ongoing switch off i.e. the concerned cell will be switched off after offloading and not be available. It aides the receiving NG-RAN node in taking subsequent actions, e.g. selecting the target cell for subsequent handovers. |
| Not supported 5QI value | The action failed because the requested 5QI is not supported. |
| TXnDCoverall Expiry | The reason for the action is expiry of timer TXnDCoverall. |
| TXnDCprep Expiry | The reason for the action is expiry of timer TXnDCprep |
| Action Desirable for Radio Reasons | The reason for requesting the action is radio related. In the current version of this specification applicable for Dual Connectivity only. |
| Reduce Load | Load in the cell(group) served by the requesting node needs to be reduced. In the current version of this specification applicable for Dual Connectivity only. |
| Resource Optimisation | The reason for requesting this action is to improve the load distribution with the neighbour cells. In the current version of this specification applicable for Dual Connectivity only. |
| Time Critical action | The action is requested for time critical reason i.e. this cause value is reserved to represent all critical cases where radio resources are likely to be dropped if the requested action is not performed. In the current version of this specification applicable for Dual Connectivity only. |
| Target not Allowed | Requested action towards the indicated target cell is not allowed for the UE in question.  In the current version of this specification applicable for Dual Connectivity only. |
| No Radio Resources Available | The cell(s) in the requested node don’t have sufficient radio resources available.  In the current version of this specification applicable for Dual Connectivity only. |
| Invalid QoS combination | The action was failed because of invalid QoS combination.  In the current version of this specification applicable for Dual Connectivity only. |
| Encryption Algorithms Not Supported | The requested NG-RAN node is unable to support any of the encryption algorithms supported by the UE. In the current version of this specification applicable for Dual Connectivity only. |
| Procedure cancelled | The sending node cancelled the procedure due to other urgent actions to be performed.  In the current version of this specification applicable for Dual Connectivity only. |
| RRM purpose | The procedure is initiated due to node internal RRM purposes.  In the current version of this specification applicable for Dual Connectivity only. |
| Improve User Bit Rate | The reason for requesting this action is to improve the user bit rate.  In the current version of this specification applicable for Dual Connectivity only. |
| User Inactivity | The action is requested due to user inactivity on all PDU Sessions. The action may be performed on several levels:  - on UE Context level, if NG is requested to be released in order to optimise the radio resources; or S-NG-RAN node didn’t see activity on the PDU session recently.  - on PDU Session Resource or DRB or QoS flow level, e.g. if Activity Notification indicate lack of activity  In the current version of this specification applicable for Dual Connectivity only. |
| Radio Connection With UE Lost | The action is requested due to losing the radio connection to the UE.  In the current version of this specification applicable for Dual Connectivity only. |
| Failure in the Radio Interface Procedure | Radio interface procedure has failed.  In the current version of this specification applicable for Dual Connectivity only. |
| Bearer Option not Supported | The requested bearer option is not supported by the sending node.  In the current version of this specification applicable for Dual Connectivity only. |
| UP integrity protection not possible | The PDU session cannot be accepted according to the required user plane integrity protection policy. |
| UP confidentiality protection not possible | The PDU session cannot be accepted according to the required user plane confidentiality protection policy. |
| Resources not available for the slice(s) | The requested resources are not available for the slice(s). |
| UE Maximum integrity protected data rate reason | The request is not accepted in order to comply with the maximum data rate for integrity protection supported by the UE. |
| CP Integrity Protection Failure | The request is not accepted due to failed control plane integrity protection. |
| UP Integrity Protection Failure | The procedure is initiated because the SN (hosting node) detected an Integrity Protection failure in the UL PDU coming from the MN. |
| Slice(s) not supported by NG-RAN | The failure is due to slice(s) not supported by the NG-RAN node. |
| MN Mobility | The procedure is initiated due to relocation of the M-NG-RAN node UE context. |
| SN Mobility | The procedure is initiated due to relocation of the S-NG-RAN node UE context. |
| Count reaches max value, | Indicates the PDCP COUNT for UL or DL reached the max value and the bearer may be released. |
| Unknown Old NG-RAN node UE XnAP ID | The action failed because the Old NG-RAN node UE XnAP ID or the S-NG-RAN node UE XnAP ID is unknown. |
| PDCP Overload | The procedure is initiated due to PDCP resource limitation. |
| DRB ID not available | The action failed because the M-NG-RAN node is not able to provide additional DRB IDs to the S-NG-RAN node. |
| Unspecified | Sent for radio network layer cause when none of the specified cause values applies. |
| UE Context ID not known | The context retrieval procedure cannot be performed because the UE context cannot be identified. |
| Non-relocation of context | The context retrieval procedure is not performed because the old RAN node has decided not to relocate the UE context. |
| CHO-CPC resources to be changed | The prepared resources for CHO or CPC for a UE are to be changed. |
| RSN not available for the UP | The redundant user plane resources are not available. |
| NPN Access denied | Access denied due to NPN reasons. |
| ReportCharacteristicsEmpty | The action failed because there is no characteristic reported. |
| NoReportPeriodicity | The action failed because the periodicity is not defined. |
| ExistingMeasurementID | The action failed because measurement-ID is already used. |
| Unknown NG-RAN node Measurement ID | The action failed because some NG-RAN node Measurement-ID is unknown. |
| Measurement Temporarily not Available | The NG-RAN node can temporarily not provide the requested measurement object. |
| Measurement not Supported For The Object | At least one of the concerned cell(s) does not support the requested measurement. |

<<<<<<<<<<<<<<<<<<<< End of the Third Change >>>>>>>>>>>>>>>>>>>>

<<<<<<<<<<<<<<<<<<<< Start of the Fourth Change >>>>>>>>>>>>>>>>>>>>

### 9.3.4 PDU Definitions

<Unchanged Parts Skipped>

FROM XnAP-Containers

id-ActivatedServedCells,

id-ActivationIDforCellActivation,

id-AdditionalDRBIDs,

id-AMF-Region-Information,

id-AMF-Region-Information-To-Add,

id-AMF-Region-Information-To-Delete,

id-AssistanceDataForRANPaging,

id-AvailableDRBIDs,

id-Cause,

id-cellAssistanceInfo-EUTRA,

id-cellAssistanceInfo-NR,

id-CellAndCapacityAssistanceInfo-EUTRA,

id-CellAndCapacityAssistanceInfo-NR,

id-ConfigurationUpdateInitiatingNodeChoice,

id-UEContextID,

id-CriticalityDiagnostics,

id-XnUAddressInfoperPDUSession-List,

id-DesiredActNotificationLevel,

id-DRBsSubjectToStatusTransfer-List,

id-ExpectedUEBehaviour,

id-FiveGCMobilityRestrictionListContainer,

id-GlobalNG-RAN-node-ID,

id-GUAMI,

id-indexToRatFrequSelectionPriority,

id-List-of-served-cells-E-UTRA,

id-List-of-served-cells-NR,

id-LocationInformationSN,

id-LocationInformationSNReporting,

id-LocationReportingInformation,

id-LTEUESidelinkAggregateMaximumBitRate,

id-LTEV2XServicesAuthorized,

id-MAC-I,

id-MaskedIMEISV,

id-MDT-Configuration,

id-MDTPLMNList,

id-MN-to-SN-Container,

id-MobilityRestrictionList,

id-M-NG-RANnodeUEXnAPID,

id-new-NG-RAN-Cell-Identity,

id-newNG-RANnodeUEXnAPID,

id-NRUESidelinkAggregateMaximumBitRate,

id-NRV2XServicesAuthorized,

id-oldNG-RANnodeUEXnAPID,

id-OldtoNewNG-RANnodeResumeContainer,

id-PagingDRX,

id-PagingPriority,

id-PartialListIndicator-EUTRA,

id-PartialListIndicator-NR,

id-PCellID,

id-PDUSessionResourceSecondaryRATUsageList,

id-PDUSessionResourcesActivityNotifyList,

id-PDUSessionResourcesAdmitted-List,

id-PDUSessionResourcesNotAdmitted-List,

id-PDUSessionResourcesNotifyList,

id-PDUSessionToBeAddedAddReq,

id-PDUSessionToBeReleased-RelReqAck,

id-procedureStage,

id-RANPagingArea,

id-requestedSplitSRB,

id-RequiredNumberOfDRBIDs,

id-ResetRequestTypeInfo,

id-ResetResponseTypeInfo,

id-RespondingNodeTypeConfigUpdateAck,

id-RRCResumeCause,

id-selectedPLMN,

id-ServedCellsToActivate,

id-servedCellsToUpdate-E-UTRA,

id-ServedCellsToUpdateInitiatingNodeChoice,

id-servedCellsToUpdate-NR,

id-sourceNG-RANnodeUEXnAPID,

id-SpareDRBIDs,

id-S-NG-RANnodeMaxIPDataRate-UL,

id-S-NG-RANnodeMaxIPDataRate-DL,

id-S-NG-RANnodeUEXnAPID,

id-TAISupport-list,

id-Target2SourceNG-RANnodeTranspContainer,

id-targetCellGlobalID,

id-targetNG-RANnodeUEXnAPID,

id-TimeToWait,

id-TNLA-To-Add-List,

id-TNLA-To-Update-List,

id-TNLA-To-Remove-List,

id-TNLA-Setup-List,

id-TNLA-Failed-To-Setup-List,

id-TraceActivation,

id-UEContextInfoHORequest,

id-UEContextInfoRetrUECtxtResp,

id-UEContextKeptIndicator,

id-UEContextRefAtSN-HORequest,

id-UEHistoryInformation,

id-UEIdentityIndexValue,

id-UERANPagingIdentity,

id-UESecurityCapabilities,

id-UserPlaneTrafficActivityReport,

id-XnRemovalThreshold,

id-PDUSessionAdmittedAddedAddReqAck,

id-PDUSessionNotAdmittedAddReqAck,

id-SN-to-MN-Container,

id-RRCConfigIndication,

id-SplitSRB-RRCTransfer,

id-UEReportRRCTransfer,

id-PDUSessionReleasedList-RelConf,

id-BearersSubjectToCounterCheck,

id-PDUSessionToBeReleasedList-RelRqd,

id-ResponseInfo-ReconfCompl,

id-initiatingNodeType-ResourceCoordRequest,

id-respondingNodeType-ResourceCoordResponse,

id-PDUSessionToBeReleased-RelReq,

id-PDUSession-SNChangeRequired-List,

id-PDUSession-SNChangeConfirm-List,

id-PDCPChangeIndication,

id-PC5QoSParameters,

id-SCGConfigurationQuery,

id-UEContextInfo-SNModRequest,

id-requestedSplitSRBrelease,

id-PDUSessionAdmitted-SNModResponse,

id-PDUSessionNotAdmitted-SNModResponse,

id-admittedSplitSRB,

id-admittedSplitSRBrelease,

id-PDUSessionAdmittedModSNModConfirm,

id-PDUSessionReleasedSNModConfirm,

id-s-ng-RANnode-SecurityKey,

id-PDUSessionToBeModifiedSNModRequired,

id-S-NG-RANnodeUE-AMBR,

id-PDUSessionToBeReleasedSNModRequired,

id-target-S-NG-RANnodeID,

id-S-NSSAI,

id-MR-DC-ResourceCoordinationInfo,

id-RANPagingFailure,

id-UERadioCapabilityForPaging,

id-PDUSessionDataForwarding-SNModResponse,

id-Secondary-MN-Xn-U-TNLInfoatM,

id-NE-DC-TDM-Pattern,

id-InterfaceInstanceIndication,

id-S-NG-RANnode-Addition-Trigger-Ind,

id-SNTriggered,

id-DRBs-transferred-to-MN,

id-TNLConfigurationInfo,

id-MessageOversizeNotification,

id-NG-RANTraceID,

id-FastMCGRecoveryRRCTransfer-SN-to-MN,

id-FastMCGRecoveryRRCTransfer-MN-to-SN,

id-RequestedFastMCGRecoveryViaSRB3,

id-AvailableFastMCGRecoveryViaSRB3,

id-RequestedFastMCGRecoveryViaSRB3Release,

id-ReleaseFastMCGRecoveryViaSRB3,

id-CHOinformation-Req,

id-CHOinformation-Ack,

id-targetCellsToCancel,

id-requestedTargetCellGlobalID,

id-DAPSResponseInfo-List,

id-CHO-MRDC-Indicator,

id-MobilityInformation,

id-InitiatingCondition-FailureIndication,

id-UEHistoryInformationFromTheUE,

id-HandoverReportType,

id-HandoverCause,

id-SourceCellCGI,

id-TargetCellCGI,

id-ReEstablishmentCellCGI,

id-TargetCellinEUTRAN,

id-SourceCellCRNTI,

id-UERLFReportContainer,

id-NGRAN-Node1-Measurement-ID,

id-NGRAN-Node2-Measurement-ID,

id-RegistrationRequest,

id-ReportCharacteristics,

id-CellToReport,

id-ReportingPeriodicity,

id-CellMeasurementResult,

id-NG-RANnode1CellID,

id-NG-RANnode2CellID,

id-NG-RANnode1MobilityParameters,

id-NG-RANnode2ProposedMobilityParameters,

id-MobilityParametersModificationRange,

id-RACHReportInformation,

id-IABNodeIndication,

id-UERadioCapabilityID,

id-CompleteFailureCauseInformation-List,

maxnoofCellsinNG-RANnode,

maxnoofDRBs,

maxnoofPDUSessions,

maxnoofQoSFlows,

maxnoofFailedMeasObjects

<Unchanged Parts Skipped>

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESOURCE STATUS FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResourceStatusFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResourceStatusFailure-IEs}},

...

}

ResourceStatusFailure-IEs XNAP-PROTOCOL-IES ::= {

{ ID id-NGRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-NGRAN-Node2-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-CompleteFailureCauseInformation-List CRITICALITY ignore TYPE CompleteFailureCauseInformation-List PRESENCE optional},

...

}

CompleteFailureCauseInformation-List ::= SEQUENCE (SIZE (1..maxnoofCellsinNG-RANnode)) OF ProtocolIE-Single-Container { {CompleteFailureCauseInformation-ItemIEs} }

CompleteFailureCauseInformation-ItemIEs XNAP-PROTOCOL-IES ::= {

{ ID id-CompleteFailureCauseInformation-Item CRITICALITY ignore TYPE CompleteFailureCauseInformation-Item PRESENCE mandatory}

}

CompleteFailureCauseInformation-Item ::= SEQUENCE {

nr-cell-ID NR-CGI,

measurementFailureCause-List MeasurementFailureCause-List,

iE-Extensions ProtocolExtensionContainer { {CompleteFailureCauseInformation-Item-ExtIEs} } OPTIONAL,

...

}

CompleteFailureCauseInformation-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

MeasurementFailureCause-List ::= SEQUENCE (SIZE (1..maxnoofFailedMeasObjects)) OF ProtocolIE-Single-Container { {MeasurementFailureCause-ItemIEs} }

MeasurementFailureCause-ItemIEs XNAP-PROTOCOL-IES ::= {

{ ID id-MeasurementFailureCause-Item CRITICALITY ignore TYPE MeasurementFailureCause-Item PRESENCE mandatory}

}

MeasurementFailureCause-Item ::= SEQUENCE {

measurementFailedReportCharacteristics ReportCharacteristics,

cause Cause,

iE-Extensions ProtocolExtensionContainer { {MeasurementFailureCause-Item-ExtIEs} } OPTIONAL,

...

}

MeasurementFailureCause-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

<<<<<<<<<<<<<<<<<<<< End of the Fourth Change >>>>>>>>>>>>>>>>>>>>

<<<<<<<<<<<<<<<<<<<< Start of the Fifth Change >>>>>>>>>>>>>>>>>>>>

### 9.3.5 Information Element definitions

<Unchanged Parts Skipped>

-- C

<Unchanged Parts Skipped>

Cause ::= CHOICE {

radioNetwork CauseRadioNetworkLayer,

transport CauseTransportLayer,

protocol CauseProtocol,

misc CauseMisc,

choice-extension ProtocolIE-Single-Container { {Cause-ExtIEs} }

}

Cause-ExtIEs XNAP-PROTOCOL-IES ::= {

...

}

CauseRadioNetworkLayer ::= ENUMERATED {

cell-not-available,

handover-desirable-for-radio-reasons,

handover-target-not-allowed,

invalid-AMF-Set-ID,

no-radio-resources-available-in-target-cell,

partial-handover,

reduce-load-in-serving-cell,

resource-optimisation-handover,

time-critical-handover,

tXnRELOCoverall-expiry,

tXnRELOCprep-expiry,

unknown-GUAMI-ID,

unknown-local-NG-RAN-node-UE-XnAP-ID,

inconsistent-remote-NG-RAN-node-UE-XnAP-ID,

encryption-and-or-integrity-protection-algorithms-not-supported,

protection-algorithms-not-supported,

multiple-PDU-session-ID-instances,

unknown-PDU-session-ID,

unknown-QoS-Flow-ID,

multiple-QoS-Flow-ID-instances,

switch-off-ongoing,

not-supported-5QI-value,

tXnDCoverall-expiry,

tXnDCprep-expiry,

action-desirable-for-radio-reasons,

reduce-load,

resource-optimisation,

time-critical-action,

target-not-allowed,

no-radio-resources-available,

invalid-QoS-combination,

encryption-algorithms-not-supported,

procedure-cancelled,

rRM-purpose,

improve-user-bit-rate,

user-inactivity,

radio-connection-with-UE-lost,

failure-in-the-radio-interface-procedure,

bearer-option-not-supported,

up-integrity-protection-not-possible,

up-confidentiality-protection-not-possible,

resources-not-available-for-the-slice-s,

ue-max-IP-data-rate-reason,

cP-integrity-protection-failure,

uP-integrity-protection-failure,

slice-not-supported-by-NG-RAN,

mN-Mobility,

sN-Mobility,

count-reaches-max-value,

unknown-old-NG-RAN-node-UE-XnAP-ID,

pDCP-Overload,

drb-id-not-available,

unspecified,

...,

ue-context-id-not-known,

non-relocation-of-context,

cho-cpc-resources-tobechanged,

rSN-not-available-for-the-UP,

npn-access-denied,

report-characteristics-empty,

no-report-periodicity,

existing-measurement-ID,

unknown-NG-RAN-node-measurement-ID,

measurement-temporarily-not-available,

measurement-not-supported-for-the-object

}

<<<<<<<<<<<<<<<<<<<< End of the Fifth Change >>>>>>>>>>>>>>>>>>>>