**3GPP TSG-RAN WG3 Meeting #119bis-e *R3-232120***

**Online, 17-26 Apri 2023**

**Agenda item: 12.2.2.1**

**Source: ZTE, Ericsson, Qualcomm Incorporated, Lenovo, Nokia, Nokia Shanghai Bell**

**Title: (TP to 38.423) AIRAN Impact on Xn Interface**

**Document for: Others**

# Introduction

This TP is to reflect the agreements in the SoD.

# Reference

[1] R3-232023, Summary of email Discussion on CB: # AIRAN2\_LB, ZTE

# TP to 38.423

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

*Editor’s note: FFS on the names of new introduced procedures and messages.*

## 8.1 Elementary procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* skip unchanged part \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

|  |  |  |  |
| --- | --- | --- | --- |
| Resource Status Reporting Initiation | RESOURCE STATUS REQUEST | RESOURCE STATUS RESPONSE | RESOURCE STATUS FAILURE |
| Mobility Settings Change | MOBILITY CHANGE REQUEST | MOBILITY CHANGE ACKNOWLEDGE | MOBILITY CHANGE FAILURE |
| IAB Transport Migration Management | IAB TRANSPORT MIGRATION MANAGEMENT REQUEST | IAB TRANSPORT MIGRATION MANAGEMENT RESPONSE | IAB TRANSPORT MIGRATION MANAGEMENT REJECT |
| IAB Transport Migration Modification | IAB TRANSPORT MIGRATION MODIFICATION REQUEST | IAB TRANSPORT MIGRATION MODIFICATION RESPONSE |  |
| IAB Resource Coordination | IAB RESOURCE COORDINATION REQUEST | IAB RESOURCE COORDINATION RESPONSE |  |
| Partial UE Context Transfer | PARTIAL UE CONTEXT TRANSFER | PARTIAL UE CONTEXT TRANSFER ACKNOWLEDGE | PARTIAL UE CONTEXT TRANSFER FAILURE |
| AI/ML Information Reporting Initiation (FFS on the name) | AI/ML INFORMATION REQUEST (FFS on the name) | AI/ML INFORMATION RESPONSE (FFS on the name) | AI/ML INFORMATION FAILURE (FFS on the name) |

Table 8.1-2: Class 2 Elementary Procedures

| Elementary Procedure | Initiating Message |
| --- | --- |
| Handover Cancel | HANDOVER CANCEL |
| SN Status Transfer | SN STATUS TRANSFER |
| RAN Paging | RAN PAGING |
| Xn-U Address Indication | XN-U ADDRESS INDICATION |
| S-NG-RAN node Reconfiguration Completion | S-NODE RECONFIGURATION COMPLETE |
| S-NG-RAN node Counter Check | S-NODE COUNTER CHECK REQUEST |
| UE Context Release | UE CONTEXT RELEASE |
| RRC Transfer | RRC TRANSFER |
| Error Indication | ERROR INDICATION |
| Notification Control Indication | NOTIFICATION CONTROL INDICATION |
| Activity Notification | ACTIVITY NOTIFICATION |
| Secondary RAT Data Usage Report | SECONDARY RAT DATA USAGE REPORT |
| Trace Start | TRACE START |
| Deactivate Trace | DEACTIVATE TRACE |
| Handover Success | HANDOVER SUCCESS |
| Conditional Handover Cancel | CONDITIONAL HANDOVER CANCEL |
| Early Status Transfer | EARLY STATUS TRANSFER |
| Failure Indication | FAILURE INDICATION |
| Handover Report | HANDOVER REPORT |
| Resource Status Reporting | RESOURCE STATUS UPDATE |
| Access And Mobility Indication | ACCESS AND MOBILITY INDICATION |
| Cell Traffic Trace | CELL TRAFFIC TRACE |
| RAN Multicast Group Paging | RAN MULTICAST GROUP PAGING |
| SCG Failure Information Report | SCG FAILURE INFORMATION REPORT |
| SCG Failure Transfer | SCG FAILURE TRANSFER |
| F1-C Traffic Transfer | F1-C TRAFFIC TRANSFER |
| Retrieve UE Context Confirm | RETRIEVE UE CONTEXT CONFIRM |
| Conditional PSCell Change Cancel | CONDITIONAL PSCELL CHANGE CANCEL |
| AI/ML Information Reporting (FFS on the name) | AI/ML INFORMATION UPDATE (FFS on the name) |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* skip unchanged part \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 8.2 Basic mobility procedures

### 8.2.1 Handover Preparation

#### 8.2.1.1 General

This procedure is used to establish necessary resources in an NG-RAN node for an incoming handover. If the procedure concerns a conditional handover, parallel transactions are allowed. Possible parallel requests are identified by the target cell ID when the source UE AP IDs are the same.

The procedure uses UE-associated signalling.

#### 8.2.1.2 Successful Operation



Figure 8.2.1.2-1: Handover Preparation, successful operation

The source NG-RAN node initiates the procedure by sending the HANDOVER REQUEST message to the target NG-RAN node. When the source NG-RAN node sends the HANDOVER REQUEST message, it shall start the timer TXnRELOCprep.

If the *Conditional Handover Information Request* IE is contained in the HANDOVER REQUEST message, the target NG-RAN node shall consider that the request concerns a conditional handover and shall include the *Conditional Handover Information* *Acknowledge* IE in the HANDOVER REQUEST ACKNOWLEDGE message.

If the *Target NG-RAN node UE XnAP ID* IE is contained in the *Conditional Handover Information Request* IE included in the HANDOVER REQUEST message, then the target NG-RAN node shall remove the existing prepared conditional HO identified by the *Target NG-RAN node UE XnAP ID* IE and the *Target Cell Global ID* IE. It is up to the implementation of the target NG-RAN node when to remove the HO information.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* skip unchanged part \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

If the *Time Synchronisation Assistance Information* IE is contained in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, store this information in the UE context and use it as defined in TS 23.501 [7].

If the *QMC Configuration Information* IE is contained in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, take it into account for QoE measurements handling, as described in TS 38.300 [9].

If the *UE Slice-Maximum Bit Rate List* IE is contained in HANDOVER REQUEST message, the target NG-RAN node shall, if supported, store the received UE Slice Maximum Bit Rate List in the UE context, and use the received UE Slice Maximum Bit Rate value for each S-NSSAI for the concerned UE as specified in TS 23.501 [7].

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* skip unchanged part \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Interaction with SN Status Transfer procedure:**

If the *UE Context Kept Indicator* IE set to "True" and the *DRBs transferred to MN* IE are included in the HANDOVER REQUEST ACKNOWLEDGE message, the source NG-RAN node shall, if supported, include the uplink/downlink PDCP SN and HFN status received from the S-NG-RAN node in the SN Status Transfer procedure towards the target NG-RAN node, as specified in TS 37.340 [8].

**Interaction with AI/ML Information Reporting procedure:**

If the *NG-RAN node1 Measurement ID* IE and the *NG-RAN node2 Measurement ID* is contained in the HANDOVER REQUEST message, the target NG-RAN node shall report to the source NG-RAN node after the completion of handover procedure, via the AI/ML Information Reporting procedure, the requested AI/ML information configured via the previous AI/ML Information Reporting Initiation procedure corresponding to the *NG-RAN node1 Measurement ID* IE and the *NG-RAN node2 Measurement ID*.

### 8.4.AA AI/ML Information Reporting Initiation (FFS on the name)

#### 8.4.AA.1 General

This procedure is used by an NG-RAN node to request the reporting of AI/ML related information to another NG-RAN node.

The procedure uses non UE-associated signalling.

*Editor’s Note: FFS other information that can be requested using this procedure.*

*Editor’s Note: FFS content of AL/ML related information.*

#### 8.4.AA.2 Successful Operation



Figure 8.4.AA.2-1: AI/ML Information Reporting Initiation, successful operation

NG-RAN node1 initiates the procedure by sending the AI/ML INFORMATION REQUEST message to NG-RAN node2 to start AI/ML related information reporting and stop AI/ML related information reporting. Upon receipt, NG-RAN node2:

- shall initiate the requested AI/ML related information reporting according to the parameters given in the request in case the *Registration Request* IE is set to "start"; or

- shall stop all cells AI/ML related information reporting and terminate the reporting in case the *Registration Request* IE is set to "stop"; or

- FFS

If the *Registration Request* IE is set to "start" in the AI/ML INFORMATION REQUEST message and the *Report Characteristics* IE indicates cell specific AI/ML related information reporting, the *Cell To Report List* IE shall be included.If NG-RAN node2 is capable to provide all or part of (exact details of if and how to support partial reporting are FFS) requested information, it shall initiate the AI/ML related information reporting as requested by NG-RAN node1 and respond with the AI/ML INFORMATION RESPONSE message.

If the *Reporting Periodicity* IE in the AI/ML INFORMATION REQUEST is present, this indicates the periodicity for the reporting of periodic AI/ML related information. The NG-RAN node2 shall report only once, unless otherwise requested within the *Reporting Periodicity* IE.

**Interaction with other procedures**

When starting a measurement, the *Report Characteristics* IE in the AI/ML INFORMATION REQUEST indicates the type of objects NG-RAN node2 shall perform measurements or prediction on. NG-RAN node2 shall include in the AI/ML INFORMATION REPORT message:

- the *Predicted Radio* *Resource Status* IE, if the first bit, "Predicted Radio Resource Status " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1". FFS on the details of *Predicted Radio* *Resource Status* IE.

- the *Predicted* *Number of Active UEs* IE, if the second bit, "Predicted Number of Active UEs " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1";

- the *Predicted* *RRC Connections* IE, if the third bit, "Predicted RRC Connections " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1".

- the *Average UE Throughput DL* IE, if the fourth bit, " Average UE Throughput DL" of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1".

- the *Average UE Throughput UL* IE, if the fifth bit, "Average UE Throughput UL " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1".

- the *Average Packet Delay* IE, if the sixth bit, " Average Packet Delay " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1".

- the *Average Packet Loss* IE, if the seventh bit, " Average Packet Loss " of the *Report Characteristics* IE included in the AI/ML INFORMATION REQUEST message is set to "1".

#### 8.4.AA.3 Unsuccessful Operation



Figure 8.4.AA.3-1: AI/ML Information Reporting Initiation, unsuccessful operation

If all of (exact details of if and how to support partial reporting are FFS) the requested AI/ML related information reporting cannot be initiated, NG-RAN node2 shall send the AI/ML INFORMATION FAILURE message with an appropriate cause value.

#### 8.4.AA.4 Abnormal Conditions

For the same Measurement ID, if the initiating NG-RAN node1 does not receive either the AI/ML INFORMATION RESPONSE message or the AI/ML INFORMATION FAILURE message, the NG-RAN node1 may reinitiate the AI/ML Information Reporting Initiation procedure towards the same NG-RAN node, provided that the content of the new AI/ML INFORMATION REQUEST message is identical to the content of the previously unacknowledged AI/ML INFORMATION REQUEST message.

If the NG-RAN node2 receives a AI/ML INFORMATION REQUEST message which includes the *Registration Request* IE set to "stop" and if the NG-RAN node2 Measurement ID value received in the AI/ML INFORMATION REQUEST message is not used, the NG-RAN node2 shall initiate AI/ML INFORMATION FAILURE message with an appropriate cause value.

If the *Report Characteristics* IE bitmap is set to "0" (all bits are set to "0") in the AI/ML INFORMATION REQUEST message then NG-RAN node2 shall initiate a AI/ML INFORMATION FAILURE message with an appropriate cause value.

If the NG-RAN node2 receives a AI/ML INFORMATION REQUEST message which includes the *Registration Request* IE set to "start" and the *NG-RAN node1Measurement ID* IE corresponding to an existing on-going AI/ML information reporting, then NG-RAN node2 shall initiate a AI/ML INFORMATION FAILURE message with an appropriate cause value.

### 8.4.BB AI/ML Information Reporting (FFS on the name)

#### 8.4.BB.1 General

This procedure is initiated by an NG-RAN node to report AI/ML related information accepted by the NG-RAN node following a successful AI/ML Information Reporting Initiation procedure.

The procedure uses non UE-associated signalling.

*Editor’s Note: FFS other information that can be reported using this procedure.*

*Editor’s Note: FFS content of AL/ML related information.*

#### 8.4.BB.2 Successful Operation



Figure 8.4.11.2-1: AI/ML Information Reporting, successful operation

NG-RAN node2 shall report the accepted AI/ML related information in AI/ML INFORMATION UPDATE message. The accepted AI/ML related information is the information that was successfully initiated during the preceding AI/ML Information Reporting Initiation procedure.

#### 8.4.BB.3 Unsuccessful Operation

Not applicable.

#### 8.4.BB.4 Abnormal Conditions

Void

## 9.1 Message Functional Definition and Content

### 9.1.1 Messages for Basic Mobility Procedures

#### 9.1.1.1 HANDOVER REQUEST

This message is sent by the source NG-RAN node to the target NG-RAN node to request the preparation of resources for a handover.

Direction: source NG-RAN node → target NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.3.1 |  | YES | reject |
| Source NG-RAN node UE XnAP ID reference | M |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the source NG-RAN node | YES | reject |
| Cause | M |  | 9.2.3.2 |  | YES | reject |
| Target Cell Global ID | M |  | 9.2.3.25 | Includes either an E-UTRA CGI or an NR CGI | YES | reject |
| GUAMI | M |  | 9.2.3.24 |  | YES | reject |
| **UE Context Information** |  | *1* |  |  | YES | reject |
| >NG-C UE associated Signalling reference | M |  | AMF UE NGAP ID9.2.3.26 | Allocated at the AMF on the source NG-C connection. | – |  |
| >Signalling TNL association address at source NG-C side | M |  | CP Transport Layer Information9.2.3.31 | This IE indicates the AMF’s IP address of the SCTP association used at the source NG-C interface instance.Note: If no UE TNLA binding exists at the source NG-RAN node, the source NG-RAN node indicates the TNL association address it would have selected if it would have had to create a UE TNLA binding. | – |  |
| >UE Security Capabilities | M |  | 9.2.3.49 |  | – |  |
| >AS Security Information | M |  | 9.2.3.50 |  | – |  |
| >Index to RAT/Frequency Selection Priority | O |  | 9.2.3.23 |  | – |  |
| >UE Aggregate Maximum Bit Rate | M |  | 9.2.3.17 |  | – |  |
| >PDU Session Resources To Be Setup List |  | *1* | 9.2.1.1 | Similar to NG-C signalling, containing UL tunnel information per PDU Session Resource;and in addition, the source side QoS flow ⇔ DRB mapping | – |  |
| >RRC Context | M |  | OCTET STRING | Either includes the *HandoverPreparationInformation* message as defined in subclause 10.2.2. of TS 36.331 [14], or the *HandoverPreparationInformation-NB* message as defined in subclause 10.6.2 of TS 36.331 [14], if the target NG-RAN node is an ng-eNB,or the *HandoverPreparationInformation* message as defined in subclause 11.2.2 of TS 38.331 [10], if the target NG-RAN node is a gNB. | – |  |
| >Location Reporting Information | O |  | 9.2.3.47 | Includes the necessary parameters for location reporting. | – |  |
| >Mobility Restriction List | O |  | 9.2.3.53 |  | – |  |
| >5GC Mobility Restriction List Container | O |  | 9.2.3.100 |  | YES | ignore |
| >NR UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.2.3.107 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| >LTE UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.2.3.108 | This IE applies only if the UE is authorized for LTE V2X services. | YES | ignore |
| >ManagementBasedMDT PLMN List | O |  | MDT PLMN List9.2.3.133 |  | YES | ignore |
| >UE Radio Capability ID | O |  | 9.2.3.138 |  | YES | reject |
| >MBS Session Information List | O |  | 9.2.1.36 |  | YES | ignore |
| >5G ProSe UE PC5 Aggregate Maximum Bit Rate | O |  | NR UE Sidelink Aggregate Maximum Bit Rate9.2.3.107 | This IE applies only if the UE is authorized for 5G ProSe services. | YES | ignore |
| >UE Slice Maximum Bit Rate List | O |  | 9.2.3.167 |  | YES | ignore |
| Trace Activation | O |  | 9.2.3.55 |  | YES | ignore |
| Masked IMEISV | O |  | 9.2.3.32 |  | YES | ignore |
| UE History Information | M |  | 9.2.3.64 |  | YES | ignore |
| **UE Context Reference at the S-NG-RAN node** | O |  |  |  | YES | ignore |
| >Global NG-RAN Node ID | M |  | 9.2.2.3 |  | – |  |
| >S-NG-RAN node UE XnAP ID | M |  | NG-RAN node UE XnAP ID9.2.3.16 |  | – |  |
| **Conditional Handover Information Request** | O |  |  |  | YES | reject |
| >CHO Trigger | M |  | ENUMERATED (CHO-initiation, CHO-replace, …) |  | – |  |
| >Target NG-RAN node UE XnAP ID | C-ifCHOmod |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the target NG-RAN node | – |  |
| >Estimated Arrival Probability | O |  | INTEGER (1..100) |  | – |  |
| NR V2X Services Authorized | O |  | 9.2.3.105 |  | YES | ignore |
| LTE V2X Services Authorized | O |  | 9.2.3.106 |  | YES | ignore |
| PC5 QoS Parameters | O |  | 9.2.3.109 | This IE applies only if the UE is authorized for NR V2X services. | YES | ignore |
| Mobility Information | O |  | BIT STRING (SIZE (32)) | Information related to the handover; the source NG-RAN node provides it in order to enable later analysis of the conditions that led to a wrong HO. | YES | ignore |
| UE History Information from the UE | O |  | 9.2.3.110 |  | YES | ignore |
| IAB Node Indication | O |  | ENUMERATED (true, ...) |  | YES | reject |
| No PDU Session Indication | O |  | ENUMERATED (true, ...) | This IE applies only if the UE is an IAB-MT. | YES | ignore |
| Time Synchronisation Assistance Information  | O |  | 9.2.3.153 |  | YES | ignore |
| QMC Configuration Information | O |  | 9.2.3.156 |  | YES | ignore |
| 5G ProSe Authorized | O |  | 9.2.3.159 |  | YES | ignore |
| 5G ProSe PC5 QoS Parameters | O |  | 9.2.3.160 | This IE applies only if the UE is authorized for 5G ProSe services. | YES | ignore |
| Cell Based UE Trajectory Prediction | O |  | 9.2.3.x |  | YES | ignore |
| AI/ML Measurement ID | O |  | 9.2.3.M |  | YES | ignore |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifCHOmod | This IE shall be present if the *CHO Trigger* IE is present and set to "CHO-replace". |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofMDTPLMNs | PLMNs in the Management Based MDT PLMN list. Value is 16. |

#### 9.1.3.CC AI/ML INFORMATION REQUEST (FFS on the name)

This message is sent by NG-RAN node1 to NG-RAN node2 to initiate the requested AI/ML related information reporting according to the parameters given in the message.

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 (FFS on the name) | M |  | INTEGER (1..4095,...)  | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID (FFS on the name) | C-ifRegistrationRequestStop |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | ignore |
| Registration Request | M |  | ENUMERATED(start, stop, …) (FFS on others) | Type of request for which the AI/ML related information is required. | YES | reject |
| Report Characteristics | C-ifRegistrationRequestStart |  | BITSTRING(SIZE(32)) | Each position in the bitmap indicates the object the NG-RAN node2 is requested to report.First Bit = Predicted Radio Resource Status,Second Bit = Predicted Number of Active UEs,Third Bit = Predicted RRC connections,Fourth Bit = Average UE Throughput DL,Fifth Bit = Average UE Throughput UL,Sixth Bit = Average Packet Delay,Seventh Bit = Average Packet LossFFS on the coding | YES | reject |
| **Cell To Report List** |  | *0..1* |  | Cell ID list to which the request applies. | YES | ignore |
| >**Cell To Report Item** |  | *1 .. <maxnoofCellsinNG-RANnode>* |  |  | – |  |
| >>Cell ID | M |  | Global NG-RAN Cell Identity9.2.2.27 |  | – |  |
| Reporting Periodicity | O |  | ENUMERATED(500ms, 1000ms, 2000ms, 5000ms, 10000ms, …) | Periodicity that can be used for reporting of requested objects. Also used as the averaging window length for all objects if supported. | YES | ignore |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifRegistrationRequestStop | This IE shall be present if the *Registration Request* IE is set to the value "stop".  |
| ifRegistrationRequestStart | This IE shall be present if the Registration Request IE is set to the value "start". |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinNG-RANnode | Maximum no. cells that can be served by a NG-RAN node. Value is 16384. |

#### 9.1.3.DD AI/ML INFORMATION RESPONSE (FFS on the name)

This message is sent by NG-RAN node2 to NG-RAN node1 to indicate that the requested AI/ML related information, for all or part of (exact details of if and how to support partial reporting are FFS) the objects included in the reporting is successfully 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 (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | reject |
| Failed Reporting Characteristics (FFS) | O |  | BITSTRING(SIZE(32)) | Each position in the bitmap indicates the object the NG-RAN node2 is able to report.First Bit = Predicted Radio Resource Status,Second Bit = Predicted Number of Active UEs,Third Bit = Predicted RRC connections,Fourth Bit = Average UE Throughput DL,Fifth Bit = Average UE Throughput UL,Sixth Bit = Average Packet Delay,Seventh Bit = Average Packet LossFFS on the coding | YES | reject |
| Criticality Diagnostics | O |  | 9.2.3.3 |  | YES | ignore |

#### 9.1.3.EE AI/ML INFORMATION FAILURE (FFS on the name)

This message is sent by the NG-RAN node2 to NG-RAN node1 to indicate that for all of (exact details of if and how to support partial reporting are FFS) the requested objects the reporting 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 (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | reject |
| Cause | M |  | 9.2.3.2 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.3.3 |  | YES | ignore |

#### 9.1.3.FF AI/ML INFORMATION UPDATE (FFS on the name)

This message is sent by NG-RAN node2 to NG-RAN node1 to report the requested AI/ML related information.

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 | ignore |
| NG-RAN node1 Measurement ID (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node1 | YES | reject |
| NG-RAN node2 Measurement ID (FFS on the name) | M |  | INTEGER (1..4095,...) | Allocated by NG-RAN node2 | YES | reject |
| **Cell AI/ML Info Result** (FFS on the name) |  | *0..1* |  |  | YES | ignore |
| **>Cell AI/ML Info Result Item** (FFS on the name) |  | *1 .. < maxnoofCellsinNG-RANnode >* |  |  |  |  |
| >>Cell ID | M |  | Global NG-RAN Cell Identity9.2.2.27 |  | – |  |
| >>Predicted Radio Resources Status | O |  | 9.2.2.50 |  | – |  |
| >>Predicted Number of Active UEs  | O |  | 9.2.2.62 |  | –- |  |
| >>Predicted RRC Connections | O |  | 9.2.2.56 |  | – |  |
|  |  |  |  |  |  |  |
| **UE Associated Info Result** |  | *0..1* |  |  |  |  |
| **> UE Associated Info Result Item** |  | *1 .. < maxnoofUEReports >* |  |  |  |  |
| >> UE Assistant Identifier (FFS) | M |  | NG-RAN node UE XnAP ID9.2.3.16 |  |  |  |
|  >> UE Performance | O |  | 9.2.3.Y |  |  |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinNG-RANnode | Maximum no. cells that can be served by a NG-RAN node. Value is 16384. |
| *maxnoofUEReports* | Maximum no. UE that can be served by a NG-RAN node. Value is FFS. |

**<Unchanged Text Omitted>**

#### 9.2.3.Y UE Performance

This IE indicates the UE performance measurements metrics.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| Average UE Throughput DL | O |  | 9.2.3.4 |  |
| Average UE Throughput UL | O |  | 9.2.3.4 |  |
| Average Packet Delay | O |  | FFS |  |
| Average Packet Loss | O |  | FFS |  |

#### 9.2.3.M AI/ML Measurement ID (FFS on the name)

This IE indicates the NG-RAN Node Measurement IDs which identify an AI/ML Information Reporting (name is FFS) context.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| NG-RAN node1 Measurement ID  | M |  | INTEGER (1..4095,...)  | Together with NG-RAN node2 Measurement ID, identifies an AI/ML Information Reporting (name is FFS) context. |
| NG-RAN node2 Measurement ID  | M |  | INTEGER (1..4095,...)  | Together with NG-RAN node1 Measurement ID, identifies an AI/ML Information Reporting (name is FFS) context. |

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