3GPP TSG-RAN WG3 Meeting #129 R3-25xxxx

Bengaluru, India, 25-29 Aug 2025

**Agenda item: 10.2**

**Source: Nokia, Huawei, Ericsson**

**Title: (SON TPs to BL CR to TS 38.423) Completion of the signalling for providing UHI to the SN in case of S-CPAC release**

**Document for: Agreement**

# 1 Introduction

At RAN3 #128, it was decided to enable providing the UHI to the SN involved in S-CPAC operation, when the SN is released [1]. In this paper, we propose to complete the description of the solution.

# 2 Discussion

The agreed solution assumes that the UE History Information may be added to the messages sent from the MN to the SN, when the SN is released from S-CPAC operation. This information can possibly be used in the SN to optimise the configuration of S-CPAC, or even, in some cases, to decide between CPAC and S-CPAC used in future.

The agreed solution assumed sending full UE History Information. This, however, is likely a mistake: the S-CPAC can work within a single MN, so the MCG part is not needed. Thus, instead of the full UHI, the SCG UHI shall be sent.

# 3 References

1. R3-253885, RAN3 #128
2. R3-253999, RAN3 #128

# Text proposal for TS 38.423

The text proposal is based on the latest BL CR to XnAP [2].

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#### 8.3.6.2 Successful Operation

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**Figure 8.3.6.2-1: M-NG-RAN node initiated S-NG-RAN node Release, successful operation**

The M-NG-RAN node initiates the procedure by sending the S-NODE RELEASE REQUEST message. Upon reception of the S-NODE RELEASE REQUEST message the S-NG-RAN node shall stop providing user data to the UE.

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If the S-NODE RELEASE REQUEST message contains a PDU session resource to be released which is configured with the SCG bearer option within the *PDU Session Resources To Be Released List* IE, the S-NG-RAN node shall include the *RLC Mode* IE within the *DRBs To Be Released List* IE in the S-NODE RELEASE REQUEST ACKNOWLEDGE message. The *RLC Mode* IE indicates the RLC mode used in the S-NG-RAN node for the DRB.

If the S-NODE RELEASE REQUEST message contains the *SCG UE History Information* IE, the S-NG-RAN node may use it to optimise the S-CPAC configuration.

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#### 8.3.7.2 Successful Operation

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**Figure 8.3.7.2-1: S-NG-RAN node initiated S-NG-RAN node Release, successful operation.**

The S-NG-RAN node initiates the procedure by sending the S-NODE RELEASE REQUIRED message to the M-NG-RAN node.

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If the S-NODE RELEASE REQUIRED message includes the *SCG UE History Information* IE, the M-NG-RAN node shall, if supported, use the information to update UE History Information with PSCell history.

If the S-NODE RELEASE REQUIRED message contains the *User Plane Error Indicator* IE within the *PDU Sessions List To be Released - UPError* IE set to "GTP-U Error Indication Received", the M-NG-RAN node shall, if supported, consider that the PDU session is released due to GTP-U Error Indication received over the NG-U tunnel, and inform the SMF as specified in 3GPP TS 23.527 [57].

If the S-NODE RELEASE CONFIRM message contains the *SCG UE History Information* IE, the S-NG-RAN node may use it to optimise the S-CPAC configuration.

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#### 9.1.2.14 S-NODE RELEASE REQUEST

This message is sent by the M-NG-RAN node to the S-NG-RAN node to request the release of resources.

Direction: M-NG-RAN node → S-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 |
| M-NG-RAN node UE XnAP ID | M |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the M-NG-RAN node | YES | reject |
| S-NG-RAN node UE XnAP ID | O |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the S-NG-RAN node | YES | reject |
| Cause | M |  | 9.2.3.2 |  | YES | ignore |
| PDU Session Resources To Be Released List | O |  | PDU Session List with Cause9.2.1.26 |  | YES | ignore |
| UE Context Kept Indicator | O |  | 9.2.3.68 |  | YES | ignore |
| M-NG-RAN node to S-NG-RAN node Container | O |  | OCTET STRING | Includes the *CG-ConfigInfo* message as defined in subclause 11.2.2 of TS 38.331 [10]. | YES | ignore |
| DRBs transferred to MN | O |  | DRB List9.2.1.29 | Indicates that the target M-NG-RAN node reconfigured the listed DRBs as MN-terminated bearers. | YES | ignore |
| SCG UE History Information | O |  | 9.2.3.151 |  | YES | ignore |

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| **Range bound** | **Explanation** |
| maxnoofPDUSessions | Maximum no. of PDU sessions. Value is 256 |

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#### 9.1.2.18 S-NODE RELEASE CONFIRM

This message is sent by the M-NG-RAN node to confirm the release of all resources for a specific UE at the S-NG-RAN node.

Direction: M-NG-RAN node → S-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 |
| M-NG-RAN node UE XnAP ID | M |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the M-NG-RAN node | YES | ignore |
| S-NG-RAN node UE XnAP ID | M |  | NG-RAN node UE XnAP ID9.2.3.16 | Allocated at the S-NG-RAN node | YES | ignore |
| **PDU Session Resources Released** |  | *0..1* |  |  | YES | ignore |
| >PDU sessions released List – SN terminated | O |  | PDU Session List with data forwarding info from the target node9.2.1.25 |  | – |  |
| Criticality Diagnostics | O |  | 9.2.3.3 |  | YES | ignore |
| SCG UE History Information | O |  | 9.2.3.151 |  | YES | ignore |

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| **Range bound** | **Explanation** |
| maxnoofPDUSessions | Maximum no. of PDU sessions. Value is 256 |

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-- S-NODE RELEASE REQUEST

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SNodeReleaseRequest ::= SEQUENCE {

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

 ...

}

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

 { ID id-M-NG-RANnodeUEXnAPID CRITICALITY reject TYPE NG-RANnodeUEXnAPID PRESENCE mandatory}|

 { ID id-S-NG-RANnodeUEXnAPID CRITICALITY reject TYPE NG-RANnodeUEXnAPID PRESENCE optional }|

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

 { ID id-PDUSessionToBeReleased-RelReq CRITICALITY ignore TYPE PDUSession-List-withCause PRESENCE optional }|

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

 { ID id-MN-to-SN-Container CRITICALITY ignore TYPE OCTET STRING PRESENCE optional }|

 { ID id-DRBs-transferred-to-MN CRITICALITY ignore TYPE DRB-List PRESENCE optional }|

 { ID id-SCGUEHistoryInformation CRITICALITY ignore TYPE SCGUEHistoryInformation PRESENCE optional },

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-- S-NODE RELEASE CONFIRM

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SNodeReleaseConfirm ::= SEQUENCE {

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

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}

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

 { ID id-M-NG-RANnodeUEXnAPID CRITICALITY ignore TYPE NG-RANnodeUEXnAPID PRESENCE mandatory}|

 { ID id-S-NG-RANnodeUEXnAPID CRITICALITY ignore TYPE NG-RANnodeUEXnAPID PRESENCE mandatory}|

 { ID id-PDUSessionReleasedList-RelConf CRITICALITY ignore TYPE PDUSessionReleasedList-RelConf PRESENCE optional }|

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

 { ID id-SCGUEHistoryInformation CRITICALITY ignore TYPE SCGUEHistoryInformation PRESENCE optional },

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}

PDUSessionReleasedList-RelConf ::= SEQUENCE {

 pduSessionsReleasedList-SNterminated PDUSession-List-withDataForwardingFromTarget OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {PDUSessionReleasedList-RelConf-ExtIEs} } OPTIONAL,

 ...

}

PDUSessionReleasedList-RelConf-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

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| **Remaining text not changed** |