3GPP TSG-RAN WG3 Meeting #121 R3-234665

**August 21 – 25, 2023**

**Agenda item: 10.2.2**

**Source: Samsung**

**Title:** **(TP for SON BLCR for 38.423) SON enhancements for CPAC**

**Document for: Discussion and Decision**

# **1 Introduction**

This contribution includes a TP on SON for CPAC.

# **Annex 3: TP for TS38.423**

9.1.2.29 SCG FAILURE INFORMATION REPORT

This message is sent by M-NG-RAN node to S-NG-RAN node to report a PSCell change failure event.

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 | ignore |
| 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 |
| Source PSCell CGI | O |  | Global NG-RAN Cell Identity9.2.2.27  | NG-RAN CGI of source PSCell for PSCell change procedure | YES | ignore |
| Failed PSCell CGI | O |  | Global NG-RAN Cell Identity9.2.2.27 | NG-RAN CGI of PSCell where SCG failure occurs for PSCell change procedure | YES | ignore |
| SCG Failure Report Container | M |  | OCTET STRING | The *SCGFailureInformation* message or the *SCGFailureInformationEUTRA* message as defined in TS 38.331 [10] or the *SCGFailureInformation* message or the *SCGFailureInformationNR* message as defined in TS 36.331 [14] | YES | ignore |
| SN Mobility Information | O |  | BIT STRING (SIZE (32)) | Information related to the PSCell change. It’s provided by S-NG-RAN node in order to enable later analysis of the conditions that led to wrong PSCell change. | YES | ignore |
| CPAC Configuration | O |  | 9.2.2.xx |  | YES | ignore |

9.2.2.xx CPAC Configuration

This IE contains the CPC or CPA configuration information.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| **CPAC Candidate Cell List** |  | *1* |  |  |
| **>CPAC Candidate Cell Item** |  | *1 .. <maxnoofPSCellsinCPAC>* |  |  |
| >>CPAC Candidate Cell ID | M |  | Global NG-RAN Cell Identity9.2.2.27 |  |
| **>>CPAC Execution Condition List** |  | *1* |  |  |
| **>>>CPAC Execution Condition Item** |  | *1 .. <maxnoofCPACexecutioncond>* |  |  |
| >>>>MeasObject Container | M |  | OCTET STRING | MeasObjectToAddMod contained in the *RRCReconfiguration* message (TS 38.331 [10]), which is configured for the CPAC candidate cell |
| >>>>ReportConfig Container | M |  | OCTET STRING | ReportConfigToAddMod contained in the *RRCReconfiguration* message (TS 38.331 [10]), which is configured for the CPAC candidate cell |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofPSCellsinCPAC | Maximum no. cells that can be prepared for a CPAC handover. Value is 8. |
| maxnoofCPACexecutioncond | Maximum no. execution conditions for a conditional handover. Value is 2. |

###

9.3.4 PDU Definitions

-- ASN1START

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

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-- PDU definitions for XnAP.

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

XnAP-PDU-Contents {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) xnap (2) version1 (1) xnap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

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-- IE parameter types from other modules.

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

IMPORTS

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

 PagingCause,

 MDTPLMNModificationList,

 F1-terminatingIAB-donorIndicator,

 SRB-ID,

 AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated,

 HashedUEIdentityIndexValue,

CPACConfiguration

FROM XnAP-IEs

 PrivateIE-Container{},

 ProtocolExtensionContainer{},

 ProtocolIE-Container{},

 ProtocolIE-ContainerList{},

 ProtocolIE-ContainerPair{},

 ProtocolIE-ContainerPairList{},

 ProtocolIE-Single-Container{},

 XNAP-PRIVATE-IES,

 XNAP-PROTOCOL-EXTENSION,

 XNAP-PROTOCOL-IES,

 XNAP-PROTOCOL-IES-PAIR

FROM XnAP-Containers

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 id-UESliceMaximumBitRateList,

 id-S-NG-RANnodeUE-Slice-MBR,

 id-ManagementBasedMDTPLMNModificationList,

 id-F1-terminatingIAB-donorIndicator,

 id-AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated,

 id-HashedUEIdentityIndexValue,

id-CPACConfiguration,

 maxnoofCellsinNG-RANnode,

 maxnoofDRBs,

 maxnoofPDUSessions,

 maxnoofQoSFlows,

 maxnoofServedCellsIAB,

 maxnoofTrafficIndexEntries,

 maxnoofTLAsIAB,

 maxnoofBAPControlPDURLCCHs,

 maxnoofServingCells

FROM XnAP-Constants;

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

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-- SCG FAILURE INFORMATION REPORT

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

ScgFailureInformationReport ::= SEQUENCE {

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

 ...

}

ScgFailureInformationReport-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-SourcePSCellCGI CRITICALITY ignore TYPE GlobalNG-RANCell-ID PRESENCE optional }|

 { ID id-FailedPSCellCGI CRITICALITY ignore TYPE GlobalNG-RANCell-ID PRESENCE optional }|

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

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

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

 ...

}

9.3.5 Information Element definitions

-- ASN1START

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

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-- Information Element Definitions

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

XnAP-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-access (22) modules (3) xnap (2) version1 (1) xnap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

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 maxnoofTargetSNsMinusOne,

 maxnoofThresholdsForExcessPacketDelay,

 maxnoofPSCellsinCPAC,

 maxnoofCPACexecutioncond

-- C

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CPACConfiguration ::= SEQUENCE {

 cpacCandidateCell-List CPACCandidateCell-List,

 iE-Extensions ProtocolExtensionContainer { { CPACConfiguration-ExtIEs} } OPTIONAL,

 ...

}

CPACConfiguration-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

CPACCandidateCell-List ::= SEQUENCE (SIZE(1..maxnoofPSCellsinCPAC)) OF CPACCandidateCell-Item

CPACCandidateCell-Item ::= SEQUENCE {

 cpacCandidateCellID GlobalNG-RANCell-ID,

 cpacExecutionCondition-List CPACExecutionCondition-List,

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

 ...

}

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

 ...

}

CPACExecutionCondition-List ::= SEQUENCE (SIZE(1..maxnoofCPACexecutioncond)) OF CPACExecutionCondition-Item

CPACExecutionCondition-Item ::= SEQUENCE {

measObjectContainer MeasObjectContainer,

 reportConfigContainer ReportConfigContainer,

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

 ...

}

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

 ...

}

9.3.7 Constant definitions

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

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-- Lists

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

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maxnoofSRBs INTEGER ::= 5

maxnoofSMBR INTEGER ::= 8

maxnoofNSAGs INTEGER ::= 256

maxnoofTargetSNsMinusOne INTEGER ::= 7

maxnoofThresholdsForExcessPacketDelay INTEGER ::= 255

maxnoofPSCellsinCPAC INTEGER ::= 8

maxnoofCPACexecutioncond INTEGER ::= 2

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

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-- IEs

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

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id-AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated ProtocolIE-ID ::= 369

id-UERLFReportContainerLTEExtension ProtocolIE-ID ::= 370

id-ExcessPacketDelayThresholdConfiguration ProtocolIE-ID ::= 371

id-HashedUEIdentityIndexValue ProtocolIE-ID ::= 372

id-CPACConfiguration ProtocolIE-ID ::= xxx