**3GPP TSG-RAN3 Meeting #108-e *R3-204128***

E-meeting, 01 - 11 June 2020

**Title:** (TP for NR\_IIoT BL CR for TS 38.413) : Introducing updated QoS parameters in path switch request acknowledge

**Source:** Huawei

**Agenda item:** 17.2.4.2

**Document Type:** other

# Annex 1– TP for BL CR for TS 38.413

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### 8.4.4 Path Switch Request

#### 8.4.4.1 General

The purpose of the Path Switch Request procedure is to establish a UE associated signalling connection to the 5GC and, if applicable, to request the switch of the downlink termination point of the NG-U transport bearer towards a new termination point.

#### 8.4.4.2 Successful Operation



Figure 8.4.4.2-1: Path switch request: successful operation

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If the *Security Indication* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall behave as specified in TS 33.501 [13].

If the *UL NG-U UP TNL Information* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use it as the uplink termination point for the user plane data for this PDU session.

If the *Additional NG-U* *UP TNL Information* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use the included *UL NG-U UP TNL Information* IE(s) as the uplink termination point(s) of the user plane data for this PDU session split in different tunnel.

If the *Redundant UL NG-U UP TNL Information* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use it as the uplink termination point for the user plane data for the redundant transmission for this PDU session as specified in TS 23.501 [9].

If the *Additional Redundant NG-U* *UP TNL Information* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use the included *UL NG-U UP TNL Information* IE(s) as the uplink termination point(s) of the user plane data for this PDU session split in different tunnel.

If the *CN Packet Delay Budget Downlink* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use it as specified in TS 23.502 [10].

If the *CN Packet Delay Budget Uplink* IE is included within the *Path Switch Request Acknowledge Transfer* IE of the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall store this information and use it as specified in TS 23.502 [10].

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#### 9.3.4.9 Path Switch Request Acknowledge Transfer

This IE is transparent to the AMF.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| UL NG-U UP TNL Information | O |  | UP Transport Layer Information9.3.2.2 | UPF endpoint of the NG-U transport bearer corresponding to the *DL NG-U UP TNL Information* IE received in the *Path Switch Request Transfer* IE. | - |  |
| Security Indication | O |  | 9.3.1.27 |  | - |  |
| Additional NG-U UP TNL Information | O |  | UP Transport Layer Information Pair List9.3.2.11 | NG-RAN node endpoint of the NG-U transport bearer indicated in the *Path Switch Request Transfer* IE and the corresponding UPF endpoint for split PDU session. | YES | ignore |
| Redundant UL NG-U UP TNL Information  | O |  | UP Transport Layer Information9.3.2.2 | UPF endpoint of the NG-U transport bearer, for delivery of UL PDUs for the redundant transmission. | YES | ignore |
| Additional Redundant NG-U UP TNL Information | O |  | UP Transport Layer Information Pair List9.3.2.11 | NG-RAN node endpoint of the NG-U transport bearer for the redundant transmission indicated in the *Path Switch Request Transfer* IE and the corresponding UPF endpoint for split PDU session. | YES | Ignore |
| **QoS Flow Parameters List** |  | *0..1* |  |  | YES | ignore |
| **>QoS Flow Parameters Item** |  | *1..<maxnoofQoSFlows>* |  |  | - |  |
| >>QoS Flow Identifier | M |  | 9.3.1.51 |  | - |  |
| >>CN Packet Delay Budget Downlink | O |  | Extended Packet Delay Budget9.3.1.x2 | Core Network Packet Delay Budget is specified in TS 23.501 [9].This IE may be present in case of GBR QoS flows and is ignored otherwise. | - |  |
| >>CN Packet Delay Budget Uplink | O |  | Extended Packet Delay Budget9.3.1.x2 | Core Network Packet Delay Budget is specified in TS 23.501 [9].This IE may be present in case of GBR QoS flows and is ignored otherwise. | - |  |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofQoSFlows | Maximum no. of QoS flows allowed within one PDU session. Value is 64. |

9.4.5 Information Element definitions

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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

<Unchanged Text Omitted>

id-QosFlowParametersList,

<Unchanged Text Omitted>

PathSwitchRequestAcknowledgeTransfer ::= SEQUENCE {

 uL-NGU-UP-TNLInformation UPTransportLayerInformation OPTIONAL,

 securityIndication SecurityIndication OPTIONAL,

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

 ...

}

PathSwitchRequestAcknowledgeTransfer-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-AdditionalNGU-UP-TNLInformation CRITICALITY ignore EXTENSION UPTransportLayerInformationPairList PRESENCE optional }|

 { ID id-RedundantUL-NGU-UP-TNLInformation CRITICALITY ignore EXTENSION UPTransportLayerInformation PRESENCE optional }|

 { ID id-AdditionalRedundantNGU-UP-TNLInformation CRITICALITY ignore EXTENSION UPTransportLayerInformationPairList PRESENCE optional }|

 { ID id-QosFlowParametersList CRITICALITY ignore EXTENSION QosFlowParametersList PRESENCE optional },

 ...

}

<Unchanged Text Omitted>

QosFlowParametersList ::= SEQUENCE (SIZE(1..maxnoofQosFlows)) OF QosFlowParametersItem

QosFlowParametersItem ::= SEQUENCE {

 qosFlowIdentifier QosFlowIdentifier,

 cNPacketDelayBudgetDL ExtendedPacketDelayBudget OPTIONAL,

 cNPacketDelayBudgetUL ExtendedPacketDelayBudget OPTIONAL,

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

 ...

}

QosFlowParametersItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

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### 9.4.7 Constant Definitions

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 id-QosFlowParametersList ProtocolIE-ID ::= xxx

*End of Text Proposal for TS 38.413*