**3GPP TSG-CT WG4 Meeting #96C4-200601**

**E-Meeting, 24th – 28th February 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.571** | **CR** | **0181** | **rev** | **1** | **Current version:** | **16.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | MO Exception Data Counter | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_CIoT | | | | |  | ***Date:*** | | | 2019-12-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | To support the Small Data Rate Control for exception PDUs, UPF and NEF need to be aware of MO Exception Data, therefore AMF must detect Exception Data RRC establishment and maintain counters on Exception Data that is already spent and flag the start and stop of Exception Data RRC Connection towards the UPF and NEF via SMF whenever MO exception data is sent. we can see the details of the procedure in S2-1909224, S2-1912328, S2-2001282, S2-2001331 and description about MO Exception data counter in agreed S2-1910639, S2-1912605, S2-2001574.  Based on the information above, MO Exception Data Counter will be transferred in multiple interfaces (eg. 29.518, 29.502, 29.541 etc.) | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define data models MO Exception data counter and MO Exception data flag. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage 2 solution won't be implemented. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.3.xx(new), 5.4.4.xx, A.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR will introduce backward compatible new features in the OpenAPI specification file of TS29571\_CommonData.yaml. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1:  1. Change data model of MO Exception Counter as structured data type and include a timestamp, as in 29.274, especially considering the EPS to 5GS interworking.  2. Remove the double quotes for enumeration in the OpenAPI, and other changes in the OpenAPI are aligned with changes in text part. | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The start of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 5.4.3.xx Enumeration: MoExceptionDataFlag

The enumeration MoExceptionDataFlag represents the flags of MO Exception Data delivery. It shall comply with the provisions defined in table 5.4.3.xx-1.

Table 5.4.3.xx-1: Enumeration MoExceptionDataFlag

|  |  |
| --- | --- |
| Enumeration value | Description |
| "START" | Indicates the start of MO Exception Data delivery. |
| "STOP" | Indicates the stop of MO Exception Data delivery. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### 5.4.4.xx Type: MoExpDataCounter

Table 5.4.4.xx-1: Definition of type MoExpDataCounter

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| counter | integer | M | 1 | Unsigned integer identifying the MO Exception Data Counter, as specified in clause 5.31.14.3 of 3GPP TS 29.501 [2]. |
| timeStamp | DateTime | O | 0..1 | UTC time indicating the time at which the counter value increased from 0 to 1. |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next change\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## A.2 Data related to Common Data Types

openapi: 3.0.0

***(… text not shown for clarity …)***

#

# ENUMERATED DATA TYPES

#

AccessType:

type: string

enum:

- 3GPP\_ACCESS

- NON\_3GPP\_ACCESS

AccessTypeRm:

type: string

enum:

- 3GPP\_ACCESS

- NON\_3GPP\_ACCESS

nullable: true

RatType:

anyOf:

- type: string

enum:

- NR

- EUTRA

- WLAN

- VIRTUAL

- NBIOT

- WIRELINE

- LTE-M

- NR\_U

- EUTRA\_U

- type: string

RatTypeRm:

allOf:

- $ref: '#/components/schemas/RatType'

nullable: true

PduSessionType:

anyOf:

- type: string

enum:

- IPV4

- IPV6

- IPV4V6

- UNSTRUCTURED

- ETHERNET

- type: string

PduSessionTypeRm:

anyOf:

- type: string

enum:

- IPV4

- IPV6

- IPV4V6

- UNSTRUCTURED

- ETHERNET

- type: string

nullable: true

UpIntegrity:

anyOf:

- type: string

enum:

- REQUIRED

- PREFERRED

- NOT\_NEEDED

- type: string

UpIntegrityRm:

anyOf:

- type: string

enum:

- REQUIRED

- PREFERRED

- NOT\_NEEDED

- type: string

nullable: true

UpConfidentiality:

anyOf:

- type: string

enum:

- REQUIRED

- PREFERRED

- NOT\_NEEDED

- type: string

UpConfidentialityRm:

anyOf:

- type: string

enum:

- REQUIRED

- PREFERRED

- NOT\_NEEDED

- type: string

nullable: true

SscMode:

anyOf:

- type: string

enum:

- SSC\_MODE\_1

- SSC\_MODE\_2

- SSC\_MODE\_3

- type: string

SscModeRm:

anyOf:

- type: string

enum:

- SSC\_MODE\_1

- SSC\_MODE\_2

- SSC\_MODE\_3

- type: string

nullable: true

DnaiChangeType:

anyOf:

- type: string

enum:

- EARLY

- EARLY\_LATE

- LATE

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: >

Possible values are

- EARLY: Early notification of UP path reconfiguration.

- EARLY\_LATE: Early and late notification of UP path reconfiguration. This value shall only be present in the subscription to the DNAI change event.

- LATE: Late notification of UP path reconfiguration.

DnaiChangeTypeRm:

anyOf:

- type: string

enum:

- EARLY

- EARLY\_LATE

- LATE

- type: string

nullable: true

RestrictionType:

anyOf:

- type: string

enum:

- ALLOWED\_AREAS

- NOT\_ALLOWED\_AREAS

- type: string

RestrictionTypeRm:

anyOf:

- type: string

enum:

- ALLOWED\_AREAS

- NOT\_ALLOWED\_AREAS

- type: string

nullable: true

CoreNetworkType:

anyOf:

- type: string

enum:

- 5GC

- EPC

- type: string

CoreNetworkTypeRm:

anyOf:

- type: string

enum:

- 5GC

- EPC

- type: string

nullable: true

PresenceState:

anyOf:

- type: string

enum:

- IN\_AREA

- OUT\_OF\_AREA

- UNKNOWN

- INACTIVE

- type: string

StationaryIndication:

anyOf:

- type: string

enum:

- STATIONARY

- MOBILE

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: >

Possible values are

- STATIONARY: Identifies the UE is stationary

- MOBILE: Identifies the UE is mobile

StationaryIndicationRm:

allOf:

- $ref: '#/components/schemas/StationaryIndication'

- nullable: true

ScheduledCommunicationType:

anyOf:

- type: string

enum:

- DOWNLINK\_ONLY

- UPLINK\_ONLY

- BIDIRECTIONAL

- type: string

ScheduledCommunicationTypeRm:

allOf:

- $ref: '#/components/schemas/ScheduledCommunicationType'

- nullable: true

TrafficProfile:

anyOf:

- type: string

enum:

- SINGLE\_TRANS\_UL

- SINGLE\_TRANS\_DL

- DUAL\_TRANS\_UL\_FIRST

- DUAL\_TRANS\_DL\_FIRST

- MULTI\_TRANS

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: >

Possible values are

- SINGLE\_TRANS\_UL: Uplink single packet transmission.

- SINGLE\_TRANS\_DL: Downlink single packet transmission.

- DUAL\_TRANS\_UL\_FIRST: Dual packet transmission, firstly uplink packet transmission with subsequent downlink packet transmission.

- DUAL\_TRANS\_DL\_FIRST: Dual packet transmission, firstly downlink packet transmission with subsequent uplink packet transmission.

TrafficProfileRm:

allOf:

- $ref: '#/components/schemas/TrafficProfile'

- nullable: true

MoExceptionDataFlag:

anyOf:

- type: string

enum:

- START

- STOP

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration but is not used to encode

content defined in the present version of this API.

description: >

Possible values are

- "START": Indicates the start of MO Exception Data delivery.

- "STOP": Indicates the stop of MO Exception Data delivery.

***(… text not shown for clarity …)***

BatteryIndication:

type: object

properties:

batteryInd:

type: boolean

replaceableInd:

type: boolean

rechargeableInd:

type: boolean

BatteryIndicationRm:

allOf:

- $ref: '#/components/schemas/BatteryIndication'

- nullable: true

AcsInfo:

type: object

properties:

acsUrl:

$ref: '#/components/schemas/Uri'

acsIpv4Addr:

$ref: '#/components/schemas/Ipv4Addr'

acsIpv6Addr:

$ref: '#/components/schemas/Ipv6Addr'

AcsInfoRm:

allOf:

- $ref: '#/components/schemas/AcsInfo'

- nullable: true

MoExpDataCounter:

type: object

required:

- counter

properties:

counter:

type: integer

timeStamp:

$ref: '#/components/schemas/DateTime'

#

# Data Types related to 5G QoS as defined in clause 5.5

#

***(… text not shown for clarity …)***

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*The end of changes\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*