**3GPP TSG-CT WG4 Meeting #96C4-200599**

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.571** | **CR** | **0179** | **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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Downlink data delivery status | | | | | | | | | |
|  |  | | | | | | | | | |
| ***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:*** | | For Downlink data delivery status Events, Downlink data delivery status, Downlink data delivery Traffic Descriptor shall be used in 29.503, 29.508, 29.522/29.122, therefore it is better to define it as Common data in 29.571. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Define enumeration data models DddStatus and DddStatusRm.  Define structure data model DddTrafficDescriptor. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage 2 solution won't be implemented. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.3.xx(new), 5.4.3.xy(new), 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.In clause 5.4.3.xx, rename the new data type name DddStatus to DlDataDeliveryStatus for more clarity, and add "" in column Enumeration value.  2.In clause 5.4.3.xy, rename the new data type name DddStatusRm to DlDataDeliveryStatusRm for more clarity.  3. In clause 5.4.4.xx, complete the description of the port attribute.  4. In table 5.4.4.xx-1, rename the attribute name "port" to "portNumber"  4. In A.2, modify the API accordingly, and Replace the defintion of DddStatusRm with  DddStatusRm:    anyOf:      - $ref: '#/components/schemas/DddStatus'      - $ref: '#/components/schemas/NullValue' | | | | | | | | |

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

#### 5.4.3.xx Enumeration: DlDataDeliveryStatus

Table 5.4.3.xx-1: Enumeration DddStatus

|  |  |
| --- | --- |
| Enumeration value | Description |
| "BUFFERED" | The first downlink data is buffered with extended buffering matching the source of the downlink traffic. |
| "TRANSMITTED" | The first downlink data matching the source of the downlink traffic is transmitted after previous buffering or discarding of corresponding packet(s) because the UE of the PDU Session becomes ACTIVE, and buffered data can be delivered to UE. |
| "DISCARDED" | The first downlink data matching the source of the downlink traffic is discarded because the Extended Buffering time, as determined by the SMF, expires or the amount of downlink data to be buffered is exceeded. |

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

#### 5.4.3.xy Enumeration: DlDataDeliveryStatusRm

This enumeration is defined in the same way as the "DlDataDeliveryStatus" enumeration, but with the OpenAPI "nullable: true" property.

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

#### 5.4.4.xx Type: DddTrafficDescriptor

Table 5.4.4.xx-1: Definition of type DddTrafficDescriptor

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| ipv4Addr | Ipv4Addr | C | 0..1 | Ipv4 address of the source of downlink data. |
| ipv6Addr | Ipv6Addr | C | 0..1 | Ipv6 address of the source of downlink data. |
| portNumber | Uinteger | O | 0..1 | Port number of the source of downlink data. |
| macAddr | MacAddr48 | C | 0..1 | Source MAC address. |
| NOTE: Either IP address (at least one of the "ipv4Addr" attribute or the "ipv6Addr" attribute) or MAC address (the "macAddr" attribute) shall be included. | | | | |

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

## 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

DlDataDeliveryStatus:

anyOf:

- type: string

enum:

- BUFFERED

- TRANSMITTED

- DISCARDED

- 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

- BUFFERED: The first downlink data is buffered with extended buffering matching the source of the downlink traffic.

- TRANSMITTED: The first downlink data matching the source of the downlink traffic is transmitted after previous buffering or discarding of corresponding packet(s) because the UE of the PDU Session becomes ACTIVE, and buffered data can be delivered to UE.

- DISCARDED: The first downlink data matching the source of the downlink traffic is discarded because the Extended Buffering time, as determined by the SMF, expires or the amount of downlink data to be buffered is exceeded.

DlDataDeliveryStatusRm:

allOf:

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

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

***(… 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

DddTrafficDescriptor:

type: object

properties:

ipv4Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipv6Addr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

portNumber:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uinteger'

macAddr:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/MacAddr48'

#

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

#

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

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