**3GPP TSG CT WG3 Meeting #136 *C3-244391***

**Maastricht, NL, 19 - 23 August, 2024 was *C3-244199***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0045** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | Corrections to the NSCE\_InfoCollection API definition | | | | | | | | |
|  |  | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | |
|  |  | | | | | | | | |
| ***Work item code:*** | NSCALE | | | | |  | ***Date:*** | | 2024-08-19 |
|  |  | | | |  | |  | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | |  |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | |
| ***Reason for change:*** | | | The following issues have been identified in the definition of the NSCE\_InfoCollection API:   * The "collectInfo" attribute of the InfoCollectSubscPatch data type is encoded incorrectly as a single element object in the OpenAPI description, which makes it misaligned with the definition of the same attribute in the corresponding InfoCollectSubsc data type. More importantly, it makes the modification of this attribute using HTTP PATCH not workable/implementable. * In the definition of the CollectInfo data type in the main body, the target network slice is defined to be conveyed using the "netSliceId" attribute that is encoded using the NetSliceId data type, whereas it is defined to be conveyed using the "snssai" attribute that is encoded using the Snssai data type. * The "qosMetrics" attribute of the CollectInfo data type is defined as an array in the main body (correct), whereas it is defined as a single element object in the OpenAPI description (incorrect). * The tables in clause 6.7.6.1 are not complete. | | | | | | |
|  | | |  | | | | | | |
| ***Summary of change:*** | | | This CR proposes to:   * Address all the above-detailed issues in a backwards compatible way, except for the "collectInfo" attribute case:   + It is not possible to address this one in an "easy"/"simple" backwards compatible way.   + Therefore and as this API was finalized only in last meetings, which means that it is highly unlikely that there are deployed implementations of this API, it is proposed to treat this correction as backwards compatible, even if it is strictly speaking not backwards compatible, in order to fully correct this part of this API. | | | | | | |
|  | | |  | | | | | | |
| ***Consequences if not approved:*** | | | * The above-detailed issues remain in the specification. | | | | | | |
|  | |  | | | | | | | |
| ***Clauses affected:*** | | 6.7.6.1, 6.7.6.2.2, 6.7.6.2.5, A8 | | | | | | | |
|  | |  | | | | | | | |
|  | | **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 introduces introduces backwards compatible corrections to the OpenAPI description of the NSCE\_InfoCollection API defined in this specification. | | | | | | | |
|  | |  | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | |

\* \* \* \* Start of changes \* \* \* \*

#### 6.7.6.1 General

Table 6.7.6.1-1: NSCE\_InfoCollection API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Section defined | Description | Applicability |
| CollectInfo | 6.7.6.2.5 | Represents the information to be collected. |  |
| InfoCollectSubsc | 6.7.6.2.2 | Represents an Information Collection subscription. |  |
| InfoCollectSubscPatch | 6.7.6.2.3 | Represents the requested modifications of an Information Collection subscription. |  |
| InfoCollectNotif | 6.7.6.2.4 | Represents an Information Collection Notification. |  |
| QoSMetric | 6.7.6.2.6 | Represents the QoS metric. |  |
| QoSType | 6.7.6.3.3 | Represents the QoS metric type. |  |

Table 6.7.6.1-2 specifies data types re-used by the NSCE\_InfoCollection API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the NSCE\_InfoCollection API.

Table 6.7.6.1-2: NSCE\_InfoCollection API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| BitRate | 3GPP TS 29.571 [16] | Represents a bit rate. |  |
| DateTime | 3GPP TS 29.122 [2] | Represents a date and a time. |  |
| DurationSec | 3GPP TS 29.571 [16] | Represents a time duration in seconds. |  |
| Float | 3GPP TS 29.571 [16] | Represents a number with format "float" as defined in the OpenAPI Specification [4]. |  |
| ReportingData | Clause 6.6.6.2.10 | Represents a network slice related performance and analytics monitoring report. |  |
| NetSliceId | 6.3.6.2.15 | Represents the identification information of a network slice. |  |
| SupportedFeatures | 3GPP TS 29.571 [16] | Represents the list of supported feature(s) and used to negotiate the applicability of the optional features. |  |
| Uint32 | 3GPP TS 29.571 [16] | Represents an unsigned 32-bit integer. |  |
| Uri | 3GPP TS 29.122 [2] | Represents a URI. |  |

\* \* \* \* Next changes \* \* \* \*

##### 6.7.6.2.2 Type: InfoCollectSubsc

Table 6.7.6.2.2-1: Definition of type InfoCollectSubsc

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| notifUri | Uri | M | 1 | Contains the URI via which notifications shall be delivered. |  |
| collectInfo | map(CollectInfo) | M | 1..N | Contains the information collected from the interested network slice.  The key of the map shall be any unique string encoded value. |  |
| expTime | DateTime | O | 0..1 | Contains the proposed expiration time of the subscription. |  |
| netSlicePerf | array(ReportingData) | O | 1..N | Contains the network slice related performance and analytics report(s).  This attribute may be present only in Information Collection Subscription creation/update responses. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the list of supported features among the ones defined in clause 6.7.8.  This attribute shall be present only when feature negotiation needs to take place. |  |

\* \* \* \* Next changes \* \* \* \*

##### 6.7.6.2.5 Type: CollectInfo

Table 6.7.6.2.5-1: Definition of type CollectInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| netSliceId | NetSliceId | M | 1 | Represents the targeted concerned network slice. |  |
| qosMetrics | array(QoSMetric) | O | 1..N | Contains the QoS metric(s) related information with each instance including the QoS metric type and the corresponding QoS threshold.  (NOTE) |  |
| repPeriod | DurationSec | O | 0..1 | Contains the reporting period. |  |
| immRepFlag | boolean | O | 0..1 | Contains the immediate reporting indication.  - Set to "true" to indicate that immediate reporting is requested.  - Set to "false" to indicate that immediate reporting is not requested.  - The default value is "false" if this attribute is omitted.  (NOTE) |  |
| NOTE: If the "immRepFlag" is set to "false" or omitted, the "qosMetrics" attribute indicates the reporting conditions as the average "latency", "throughput", or "jitter" is greater than the threshold. | | | | | |

\* \* \* \* Next changes \* \* \* \*

# A.8 NSCE\_InfoCollection API

openapi: 3.0.0

info:

title: NSCE\_InfoCollection

version: 1.0.0

description: |

NSCE\_InfoCollection Service.

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externalDocs:

description: >

3GPP TS 29.435 V18.1.0; Service Enabler Architecture Layer for Verticals (SEAL);

Network Slice Capability Enablement (NSCE) Server Service(s); Stage 3.

url: http://www.3gpp.org/ftp/Specs/archive/29\_series/29.435/

servers:

- url: '{apiRoot}/nsce-ic/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 6.5 of 3GPP TS 29.549

security:

- {}

- oAuth2ClientCredentials: []

paths:

/subscriptions:

post:

summary: Request the creation of an Information Collection Subscription.

operationId: CreateInfoCollectSubscription

tags:

- Information Collection Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: >

Created. The Information Collection Subscription is successfully created and a

representation of the created Individual Information Collection Subscription resource

shall be returned.

content:

application/json:

schema:

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

headers:

Location:

description: >

Contains the URI of the newly created resource.

required: true

schema:

type: string

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

callbacks:

InfoCollectNotif:

'{$request.body#/notifUri}':

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: >

No Content. The Information Collection Notification is successfully received.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionId}:

parameters:

- name: subscriptionId

in: path

description: >

Represents the identifier of the Information Collection Subscription resource.

required: true

schema:

type: string

get:

summary: Retrieve an existing Individual Information Collection Subscription resource.

operationId: GetIndInfoCollectSubscription

tags:

- Individual Information Collection Subscription (Document)

responses:

'200':

description: >

OK. The requested Individual Information Collection Subscription resource shall be

returned.

content:

application/json:

schema:

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

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29122\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

put:

summary: Request the update of an existing Individual Information Collection Subscription resource.

operationId: UpdateIndInfoCollectSubcription

tags:

- Individual Information Collection Subscription (Document)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'200':

description: >

OK. The Individual Information Collection Subscription resource is successfully updated

and a representation of the updated resource shall be returned in the response body.

content:

application/json:

schema:

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

'204':

description: >

No Content. The Individual Information Collection Subscription resource is successfully

updated and no content is returned in the response body.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

patch:

summary: Request the modification of an existing Individual Information Collection Subscription resource.

operationId: ModifyIndInfoCollectSubscription

tags:

- Individual Information Collection Subscription (Document)

requestBody:

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: >

OK. The Individual Information Collection Subscription resource is successfully modified

and a representation of the updated resource shall be returned in the response body.

content:

application/json:

schema:

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

'204':

description: >

No Content. The Individual Information Collection Subscription resource is successfully

modified and no content is returned in the response body.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29122\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29122\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29122\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

delete:

summary: Request the deletion of an existing Individual Information Collection Subscription resource.

operationId: DeleteIndInfoCollectSubcription

tags:

- Individual Information Collection Subscription (Document)

responses:

'204':

description: >

No Content. The Individual Information Collection Subscription resource is successfully

deleted.

'307':

$ref: 'TS29122\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29122\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29122\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29122\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29122\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29122\_CommonData.yaml#/components/responses/404'

'429':

$ref: 'TS29122\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29122\_CommonData.yaml#/components/responses/500'

'503':

$ref: 'TS29122\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29122\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{tokenUrl}'

scopes: {}

schemas:

InfoCollectSubsc:

description: Represents an Information Collection subscription.

type: object

properties:

notifUri:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

collectInfo:

type: object

additionalProperties:

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

minProperties: 1

description: >

Contains the information collected from the interested Network slice.

The key of the map shall be any unique string encoded value.

expTime:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

netSlicePerf:

type: array

items:

$ref: 'TS29435\_NSCE\_PerfMonitoring.yaml#/components/schemas/ReportingData'

minItems: 1

suppFeat:

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

required:

- notifUri

- collectInfo

InfoCollectSubscPatch:

description: Represents the requested modifications of an Information Collection subscription.

type: object

properties:

notifUri:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Uri'

collectInfo:

type: object

additionalProperties:

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

minProperties: 1

description: >

Contains the information collected from the interested Network slice.

The key of the map shall be any unique string encoded value and shall be set to the same

value as the as the one provided during the creation of the corresponding Information

Collection Subscription.

expTime:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/DateTime'

InfoCollectNotif:

description: Represents an Information Collection Notification.

type: object

properties:

subscriptionId:

type: string

description: >

Contains the identifier of the subscription to which the notification is related.

netSlicePerf:

type: array

description: Contains the network slice related performance and analytics report(s).

items:

$ref: 'TS29435\_NSCE\_PerfMonitoring.yaml#/components/schemas/ReportingData'

minItems: 1

required:

- subscriptionId

- netSlicePerf

CollectInfo:

type: object

properties:

netSliceId:

$ref: 'TS29435\_NSCE\_PolicyManagement.yaml#/components/schemas/NetSliceId'

qosMetrics:

type: array

items:

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

minItems: 1

repPeriod:

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

immRepFlag:

type: boolean

description: Identifies the request needs immediate reporting or not.

oneOf:

- required: [netSliceId]

- required: [snssai]

QoSMetric:

type: object

properties:

qosType:

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

latency:

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

throughput:

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

jitter:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

required:

- qosType

#

# ENUMERATIONS DATA TYPES

#

QoSType:

anyOf:

- type: string

enum:

- LATENCY

- THROUGHPUT

- JITTER

- type: string

description: >

This string provides forward-compatibility with future

extensions to the enumeration and is not used to encode

content defined in the present version of this API.

description: |

Represents the QoS metric type.

Possible values are:

- LATENCY: Indicates that the QoS type is latency.

- THROUGHPUT: Indicates that the QoS type is throughput.

- JITTER: Indicates that the QoS type is jitter.

\* \* \* \* End of changes \* \* \* \*