**3GPP TSG- Meeting #**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** |  | **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** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | EASDeployment feature negotiation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGE\_Ph2 | | | | |  | ***Date:*** | | | 2024-10-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **A** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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:*** | | Feature negotiation is not enabled for the EASDeployment API, although a feature already exists. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Specified the SupportedFeatures attribute. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | API feature negotiation is broken. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.6.1, 5.2.6.2.2, A.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 a backwards compatible correction into the OpenAPI file of the EASDeployment API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\* First Change \*\*\*

5.2.6.1 General

This clause specifies the application data model supported by the API.

Table 5.2.6.1-1 specifies the data types defined for the Nnef\_EASDeployment service based interface protocol.

**Table 5.2.6.1-1: Nnef\_EASDeployment specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Section defined** | **Description** | **Applicability** |
| EasDeployInfoNotif | 5.2.6.2.3 | Represents notifications on EAS Deployment Information changes event(s) that occurred for an Individual EAS Deployment Event Subscription resource. |  |
| EasDeploySubData | 5.2.6.2.2 | Represents EAS Deployment Information changes event(s) subscription data. |  |
| EasDeployInfoData | 5.2.6.2.5 | Represents the EAS Deployment Information to be reported. |  |
| EasDepNotification | 5.2.6.2.4 | Represents the EAS Deployment Notifcation. |  |
| EasEvent | 5.2.6.3.3 | represents the EAS event. |  |

Table 5.2.6.1-2 specifies data types re-used by the Nnef\_EASDeployment service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nnef\_EASDeployment service based interface.

**Table 5.2.6.1-2: Nnef\_EASDeployment re-used Data Types**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Data type** | | **Reference** | | **Comments** | | **Applicability** | |
| DnaiInformation | | 3GPP TS 29.522 [15] | | Represents the DNAI inormation including the DNS server identifier (consisting of IP address and port) and/or IP address(s) of the EAS in the local DN for the DNAI. | |  | |
| DnnSnssaiInformation | | 3GPP TS 29.522 [15] | | Identifies a combination of (DNN, S-NSSAI). | |  | |
| FqdnPatternMatchingRule | | 3GPP TS 29.571 [16] | | Represents the FQDN pattern matching rule. | |  | |
| GroupId | | 3GPP TS 29.571 [16] | | Contains a Group identifier. | |  | |
| RedirectResponse | | 3GPP TS 29.571 [16] | | Contains redirection related information. | |  | |
| SupportedFeatures | | 3GPP TS 29.571 [16] | | Indicates the supported features. | |  | |
| Uri | | 3GPP TS 29.571 [16] | | Contains a URI. | |  | |

\*\*\* Next Change \*\*\*

5.2.6.2.2 Type: EasDeploySubData

**Table 5.2.6.2.2-1: Definition of type EasDeploySubData**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| appId | string | O | 0..1 | Identifies the application for which the EAS Deployment Information corresponds to. |  |
| dnnSnssaiInfos | array(DnnSnssaiInformation) | O | 1..N | Each of the element identifies a combination of (DNN, S-NSSAI). |  |
| eventId | EasEvent | M | 1 | Event ID assigned by the NF service consumer. |  |
| eventsNotifs | array(EasDeployInfoData) | C | 1..N | Represents the EAS Deployment Information changes event(s) to be reported.  Shall only be present if the "immRep" attribute is included in the request and sets to true, and the current status of EAS Deployment Information is available. |  |
| immRep | boolean | O | 0..1 | Indication of immediate reporting:  - true: requires the immediate reporting of the current status of EAS Deployment Information, if available.  - false (default): EAS Deployment Information event report occurs when the event is met. |  |
| interGroupId | GroupId | O | 0..1 | Identifies an internal UE group. |  |
| notifId | string | M | 1 | Notification Correlation ID assigned by the NF service consumer. |  |
| notifUri | Uri | M | 1 | Notification URI for the EAS Deployment Information event reporting. |  |
| suppFeat | SupportedFeatures | C | 0..1 | Contains the supported features among those defined in clause 5.2.8. This attribute shall be provided when feature negotiation needs to take place. |  |

\*\*\* Next Change \*\*\*

A.3 Nnef\_EASDeployment API

openapi: 3.0.0

info:

title: Nnef\_EASDeployment

version: 1.1.0

description: |

NEF EAS Deployment service.

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externalDocs:

description: >

3GPP TS 29.591 V18.6.0; 5G System; Network Exposure Function Southbound Services; Stage 3.

url: https://www.3gpp.org/ftp/Specs/archive/29\_series/29.591/

servers:

- url: '{apiRoot}/nnef-eas-deployment/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

- {}

- oAuth2ClientCredentials:

- nnef-eas-deployment

paths:

/subscriptions:

post:

summary: subscribe to notifications

operationId: CreateIndividualSubcription

tags:

- Subscriptions (Collection)

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'201':

description: Success

content:

application/json:

schema:

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

headers:

Location:

description: >

Contains the URI of the newly created resource, according to the structure:

{apiRoot}/nnef-eas-deployment/<apiVersion>/subscriptions/{subscriptionId}.

required: true

schema:

type: string

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

callbacks:

notifUri:

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

post:

requestBody:

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content, Notification was succesfull

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'411':

$ref: 'TS29571\_CommonData.yaml#/components/responses/411'

'413':

$ref: 'TS29571\_CommonData.yaml#/components/responses/413'

'415':

$ref: 'TS29571\_CommonData.yaml#/components/responses/415'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

/subscriptions/{subscriptionId}:

get:

summary: retrieve subscription

operationId: GetIndividualSubcription

tags:

- IndividualSubscription (Document)

parameters:

- name: subscriptionId

in: path

description: Event Subscription ID

required: true

schema:

type: string

responses:

'200':

description: OK. Resource representation is returned

content:

application/json:

schema:

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'406':

$ref: 'TS29571\_CommonData.yaml#/components/responses/406'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

delete:

summary: unsubscribe from notifications

operationId: DeleteIndividualSubcription

tags:

- IndividualSubscription (Document)

parameters:

- name: subscriptionId

in: path

description: Event Subscription ID

required: true

schema:

type: string

responses:

'204':

description: No Content. Resource was succesfully deleted

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

$ref: 'TS29571\_CommonData.yaml#/components/responses/400'

'401':

$ref: 'TS29571\_CommonData.yaml#/components/responses/401'

'403':

$ref: 'TS29571\_CommonData.yaml#/components/responses/403'

'404':

$ref: 'TS29571\_CommonData.yaml#/components/responses/404'

'429':

$ref: 'TS29571\_CommonData.yaml#/components/responses/429'

'500':

$ref: 'TS29571\_CommonData.yaml#/components/responses/500'

'502':

$ref: 'TS29571\_CommonData.yaml#/components/responses/502'

'503':

$ref: 'TS29571\_CommonData.yaml#/components/responses/503'

default:

$ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

securitySchemes:

oAuth2ClientCredentials:

type: oauth2

flows:

clientCredentials:

tokenUrl: '{nrfApiRoot}/oauth2/token'

scopes:

nnef-eas-deployment: Access to the Nnef\_EASDeployment API

schemas:

EasDeploySubData:

description: Represents an Individual EAS Deployment Event Subscription resource.

type: object

properties:

appId:

type: string

dnnSnssaiInfos:

type: array

items:

$ref: 'TS29522\_AMInfluence.yaml#/components/schemas/DnnSnssaiInformation'

minItems: 1

description: Each of the element identifies a (DNN, S-NSSAI) combination.

eventId:

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

eventsNotifs:

type: array

items:

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

minItems: 1

description: >

Represents the EAS Deployment Information changes event(s) to be reported.

Shall only be present if the "immRep" attribute is included and sets to true,

and the current status of EAS Deployment Information is available.

immRep:

type: boolean

description: >

Indication of immediate reporting. Set to true: requires the immediate reporting of the

current status of EAS Deployment Information, if available. Set to false (default): EAS

Deployment Information event report occurs when the event is met.

interGroupId:

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

notifId:

type: string

notifUri:

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

suppFeat:

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

required:

- eventId

- notifId

- notifUri

EasDeployInfoNotif:

description: >

Represents notifications on EAS Deployment Information changes event(s) that occurred for an

Individual EAS Deployment Event Subscription resource.

type: object

properties:

easDepNotifs:

type: array

items:

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

minItems: 1

notifId:

type: string

required:

- easDepNotifs

- notifId

EasDepNotification:

description: Represents the EAS Deployment Notifcation.

type: object

properties:

easDepInfo:

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

eventId:

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

required:

- easDepInfo

- eventId

EasDeployInfoData:

description: Represents the EAS Deployment Information to be reported.

type: object

properties:

appId:

type: string

dnaiInfos:

type: object

additionalProperties:

$ref: 'TS29522\_EASDeployment.yaml#/components/schemas/DnaiInformation'

minProperties: 1

description: >

list of DNS server identifier (consisting of IP address and port) and/or IP address(s)

of the EAS in the local DN for each DNAI. The key of map is the DNAI.

dnn:

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

fqdnPatternList:

type: array

items:

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

minItems: 1

internalGroupId:

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

snssai:

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

targetAfId:

type: string

description: >

Identifier of the AF that is responsible for the EAS associated with this EAS

deployment information.

required:

- fqdnPatternList

# Simple data types and Enumerations

EasEvent:

anyOf:

- type: string

enum:

- EAS\_INFO\_CHG

- type: string

description: |

Represents the EAS event.

Possible values are：

- EAS\_INFO\_CHG: Indicates that the EAS Deployment Information is changed.

\*\*\* End of Changes \*\*\*