**3GPP TSG-CT WG3 Meeting #116e C3-213224**

**E-Meeting, 19th – 28th May 2021 (Revision of C3-212483)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.122** | **CR** | **0347** | **rev** | **4** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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:*** | Update DNN and S-NSSAI in ChargeableParty API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17, 5GS\_Ph1-CT, Vertical\_LAN | | | | |  | ***Date:*** | | | 2021-05-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For Ethernet type PDU Session extending to support TSN and 5G LAN, current ChargeableParty API provide only UE MAC address and ethernet flow info, these two attributes are not enough for NEF to discover the serving BSF to find the serving PCF in a dynamic way similar as the one for IP PDU session, since NEF is not able to find the right BSF via NRF by using UE MAC address which is not defined and not effective to be managed like IP Address in NF Registration and Discovery.  Meanwhile TrafficInfluence API already include DNN and S-NSSAI information in which we can consider for NEF to also add DNN and S-NSSAI of the Ethernet type PDU Session to solve the issue.  TS 23.502 CR 2491 was agreed to introduce DNN and S-NSSAI for Chargeble Party API, with the applicablility not limited to Ethernet PDU Session type. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add DNN and S-NSSAI in data type ChargeableParty in ChargeableParty API with general applicability. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | For Ethernet type PDU Session, NEF can not dynamically discovery the corresponding servering BSF for the serving PCF with the AF request information, can not completely support Chargeable party for the Ethernet PDU Session. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.2, 5.5.2.1.1, 5.5.2.1.2, A.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 23.502 CR 2491 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR introduces backward compatible feature into the OpenAPI file applicable to ChargeableParty API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Updates in CT3#116e for Rev.4: remove the EthChgParty\_5G feature upon stage 2 DNN and S-NSSAI applicability not limited to Ethernet PDU Session. | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

AF Application Function

AS Application Server

ASP Application Service Provider

BDT Background Data Transfer

CAPIF Common API Framework

CP Communication Pattern

DDN Downlink Data Notification

DNN Data Network Name

DL Downlink

eNB Evolved Node B

GMD Group Message Delivery

IMEI-TAC Type Allocation Code part of an IMEI

IWK-SCEF Interworking SCEF

JSON JavaScript Object Notation

MIME Multipurpose Internet Mail Extensions

MT Mobile Terminated

MTC Machine Type Communications

MT-LR Mobile Terminated Location Request

NEF Network Exposure Function

NIDD Non-IP Data Delivery

NP Network Parameter

PCRF Policy and Charging Rule Function

PDN Packet Data Network

PFD Packet Flow Description

PFDF Packet Flow Description Function

RCAF RAN Congestion Awareness Function

REST Representational State Transfer

SACH Service Announcement Channel

SCEF Service Capability Exposure Function

SCS Services Capability Server

S-NSSAI Single Network Slice Selection Assistance Information

TAI Tracking Area Identity

TLTRI T8 Long Term Transaction Reference ID

WB Wide Band

YAML YAML Ain't Markup Language

\*\*\* 2nd Change \*\*\*

##### 5.5.2.1.1 Introduction

This clause defines data structures to be used in resource representations.

Table 5.5.2.1.1-1 specifies data types re-used by the ChargeableParty API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the ChargeableParty API.

Table 5.5.2.1.1-1: ChargeableParty API re-used Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Reference | Comments |
| Dnn | 3GPP TS 29.571 [45] | Identifies a DNN. |
| EthFlowDescription | 3GPP TS 29.514 [52] | Defines a packet filter for an Ethernet flow.(NOTE) |
| MacAddr48 | 3GPP TS 29.571 [45] | MAC Address. |
| ServAuthInfo | 3GPP TS 29.514 [52] | The authorization result of a request bound to a transfer policy. |
| Snssai | 3GPP TS 29.571 [45] | Identifies the S-NSSAI. |
| SupportedFeatures | 3GPP TS 29.571 [45] | Used to negotiate the applicability of the optional features defined in table 5.5.4-1. |
| NOTE: In order to support a set of MAC addresses with a specific range in the traffic filter, feature MacAddressRange\_5G as specified in clause 5.5.4 shall be supported. | | |

\*\*\* 3rd Change \*\*\*

##### 5.5.2.1.2 Type: ChargeableParty

This type represents the configuration of a chargeable party. The same structure is used in the configuration request and configuration response.

Table 5.5.2.1.2-1: Definition of type ChargeableParty

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE 1) |
| self | Link | 0..1 | Link to the resource "Individual Chargeable Party Transaction". This parameter shall be supplied by the SCEF in HTTP responses. |  |
| dnn | Dnn | 0..1 | Identifies a DNN, a full DNN with both the Network Identifier and Operator Identifier, or a DNN with the Network Identifier only. (NOTE m) |  |
| snssai | Snssai | 0..1 | Identifies an S-NSSAI. (NOTE m) |  |
| supportedFeatures | SupportedFeatures | 0..1 | Used to negotiate the supported optional features of the API as described in subclause 5.2.7.  This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| notificationDestination | Link | 1 | Contains the URI to receive the notification of bearer level event(s) from the SCEF. |  |
| requestTestNotification | boolean | 0..1 | Set to true by the SCS/AS to request the SCEF to send a test notification as defined in subclause 5.2.5.3. Set to false or omitted otherwise. | Notification\_test\_event |
| websockNotifConfig | WebsockNotifConfig | 0..1 | Configuration parameters to set up notification delivery over Websocket protocol as defined in subclause 5.2.5.4. | Notification\_websocket |
| ipv4Addr | Ipv4Addr | 0..1 | Identifies the Ipv4 address.  (NOTE 2) |  |
| ipDomain | string | 0..1 | The IPv4 address domain identifier.  The attribute may only be provided if the ipv4Addr attribute is present. |  |
| ipv6Addr | Ipv6Addr | 0..1 | Identifies the Ipv6 address.  (NOTE 2) |  |
| macAddr | MacAddr48 | 0..1 | Identifies the MAC address.  (NOTE 2) | EthChgParty\_5G |
| flowInfo | array(FlowInfo) | 0..N | Describes the IP flows.  (NOTE 2) |  |
| ethFlowInfo | array(EthFlowDescription) | 0..N | Identifies Ethernet packet flows.  (NOTE 2) | EthChgParty\_5G |
| sponsorInformation | SponsorInformation | 1 | Describes the sponsor information such as who is sponsoring the traffic. |  |
| sponsoringEnabled | boolean | 1 | Indicates sponsoring status. |  |
| referenceId | BdtReferenceId | 0..1 | The reference ID for a previously selected policy of background data transfer. |  |
| servAuthInfo | ServAuthInfo | 0..1 | Indicates the authorization result for the request bound to the transfer policy indicated by the "referenceId" attribute.  Supplied by the SCEF |  |
| usageThreshold | UsageThreshold | 0..1 | Time period and/or traffic volume. |  |
| NOTE 1: Properties marked with a feature as defined in subclause 5.5.4 are applicable as described in subclause 5.2.7. If no feature are indicated, the related property applies for all the features.  NOTE 2: One of ipv4, ipv6 or MAC address shall be provided. If ipv4 or ipv6 address is provided, IP flow information shall be provided. If MAC address is provided, Ethernet flow information shall be provided.  NOTE m: The property is only applicable for the NEF. | | | | |

\*\*\* 4th Change \*\*\*

## A.5 ChargeableParty API

openapi: 3.0.0

info:

title: 3gpp-chargeable-party

version: 1.2.0-alpha.2

description: |

API for Chargeable Party management.

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externalDocs:

description: 3GPP TS 29.122 V17.1.0 T8 reference point for Northbound APIs

url: 'http://www.3gpp.org/ftp/Specs/archive/29\_series/29.122/'

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/3gpp-chargeable-party/v1'

variables:

apiRoot:

default: https://example.com

description: apiRoot as defined in subclause 5.2.4 of 3GPP TS 29.122.

paths:

/{scsAsId}/transactions:

get:

summary: Read all chargeable party transaction resources for a given SCS/AS

tags:

- Chargeable Party Transaction Operation

parameters:

- name: scsAsId

in: path

description: Identifier of SCS/AS

required: true

schema:

type: string

responses:

'200':

description: OK (successful query of Chargeable Party resource)

content:

application/json:

schema:

type: array

items:

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

minItems: 0

description: individual BDT policy subscription.

'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'

post:

summary: Create a new chargeable party transaction resource

tags:

- Chargeable Party Transaction Operation

parameters:

- name: scsAsId

in: path

description: Identifier of SCS/AS

required: true

schema:

type: string

requestBody:

description: representation of the Chargeable Party resource to be Created in the SCEF

required: true

content:

application/json:

schema:

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

callbacks:

eventNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content (The successful acknowledgement of the notification)

'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'

responses:

'201':

description: successful creation of a chargeable party resource

content:

application/json:

schema:

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

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'

/{scsAsId}/transactions/{transactionId}:

get:

summary: read a chargeable party resource for a given SCS/AS and a transaction Id

tags:

- Individual chargeable party resource Operation

parameters:

- name: scsAsId

in: path

description: Identifier of SCS/AS

required: true

schema:

type: string

- name: transactionId

in: path

description: Identifier of transaction

required: true

schema:

type: string

responses:

'200':

description: OK (successful query of a chargeable party resource)

content:

application/json:

schema:

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

'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'

patch:

summary: Updates a existing chargeable party resource for a given SCS/AS and transaction Id.

tags:

- Individual chargeable party resource Operation

parameters:

- name: scsAsId

in: path

description: Identifier of SCS/AS

required: true

schema:

type: string

- name: transactionId

in: path

description: Identifier of transaction

required: true

schema:

type: string

requestBody:

description: representation of the chargeable party resource to be udpated in the SCEF

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: successful update of a chargeable party resource

content:

application/json:

schema:

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

'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: deletes a chargeable party resource for a given SCS/AS and a transcation Id.

tags:

- Individual chargeable party resource Operation

parameters:

- name: scsAsId

in: path

description: Identifier of SCS/AS

required: true

schema:

type: string

- name: transactionId

in: path

description: Identifier of transaction

required: true

schema:

type: string

responses:

'204':

description: successful deletion of an resouce of chargeable party

'200':

description: OK (Successful deletion of the existing subscription)

content:

application/json:

schema:

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

'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:

ChargeableParty:

type: object

properties:

self:

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

supportedFeatures:

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

dnn:

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

snssai:

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

notificationDestination:

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

requestTestNotification:

type: boolean

description: Set to true by the SCS/AS to request the SCEF to send a test notification as defined in subclause 5.2.5.3. Set to false or omitted otherwise.

websockNotifConfig:

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

ipv4Addr:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4Addr'

ipDomain:

type: string

ipv6Addr :

$ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6Addr'

macAddr:

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

flowInfo:

type: array

items:

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

minItems: 1

description: Describes the application flows.

ethFlowInfo:

type: array

items:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

minItems: 1

description: Identifies Ethernet packet flows.

sponsorInformation:

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

sponsoringEnabled:

type: boolean

description: Indicates sponsoring status.

referenceId:

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

servAuthInfo:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/ServAuthInfo'

usageThreshold:

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

required:

- notificationDestination

- sponsorInformation

- sponsoringEnabled

ChargeablePartyPatch:

type: object

properties:

flowInfo:

type: array

items:

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

minItems: 1

description: Describes the application flows.

ethFlowInfo:

type: array

items:

$ref: 'TS29514\_Npcf\_PolicyAuthorization.yaml#/components/schemas/EthFlowDescription'

minItems: 1

description: Identifies Ethernet packet flows.

sponsoringEnabled:

type: boolean

description: Indicates sponsoring status.

referenceId:

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

usageThreshold:

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

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