**TSG-CT WG3 Meeting #116-e *C3-213389***

**E-Meeting, 19th – 28th May 2021 (Revision of C3-213183)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.122** | **CR** | **0434** | **rev** | **1** | **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 of notification destination for ResourceManagementOfBdt API | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NBI17 | | | | |  | ***Date:*** | | | 2021-05-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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 ResourceManagementOfBdt API, the notification description can be updated during modification procedure, via the HTTP PUT operation, hence, it’s proposed to enable the update of notification destination via the HTTP PATCH operation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Enable to update of the notification destination via the HTTP PATCH operation for ResourceManagementOfBdt API . | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Misalignment between the HTTP PUT and PATCH on handling of notification destination for ResourceManagementOfBdt API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.2.1.3; 5.4.4; A. 4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 backward compatible corrections to the OpenAPI file of ResourceManagementOfBdt API. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

##### 5.4.2.1.3 Type: BdtPatch

This type represents a BDT request for the service provided by the SCS/AS to the SCEF via T8 interface. The structure is used for PATCH request.

Table 5.4.2.1.3-1: Definition of type BdtPatch

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE) |
| selectedPolicy | integer | 1 | Identity of the selected background data transfer policy. |  |
| warnNotifEnabled | boolean | 0..1 | Indicates whether the BDT warning notification is enabled or not. | BdtNotification\_5G |
| notificationDestination | Link | 0..1 | Contains the URI to receive the BDT notification from the NEF. | enNB |
| NOTE: Properties marked with a feature as defined in subclause 5.4.4 are applicable as described in subclause 5.2.7. If no feature are indicated, the related property applies for all the features. | | | | |

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

### 5.4.4 Used Features

The table below defines the features applicable to the ResourceManagementOfBdt API. Those features are negotiated as described in subclause 5.2.7.

Table 5.4.4-1: Features used by ResourceManagementOfBdt API

|  |  |  |
| --- | --- | --- |
| Feature Number | Feature | Description |
| 1 | Bdt | The feature supports the pre-5G (e.g. 4G) requirement. |
| 2 | LocBdt\_5G | The feature supports the 5G requirement. This feature may only be supported in 5G. |
| 3 | Group\_Id | The feature supports forwarding an external group identifier of the user. This feature shall not be supported in pre-5G. |
| 4 | BdtNotification\_5G | The feature supports the sending of BDT notification. This feature includes sending of the BDT warning notification to the AF. This feature may only be supported in 5G. |
| x | enNB | The feature supports enhancement of northbound interfaces, e.g. enable the SCS/AS to update notification destination during modification procedure. |
| Feature: A short name that can be used to refer to the bit and to the feature, e.g. "Notification".  Description: A clear textual description of the feature. | | |

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

## A.4 ResourceManagementOfBdt API

openapi: 3.0.0

info:

title: 3gpp-bdt

version: 1.1.1

description: |

API for BDT resouce management.

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externalDocs:

description: 3GPP TS 29.122 V16.9.0 T8 reference point for Northbound APIs

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

security:

- {}

- oAuth2ClientCredentials: []

servers:

- url: '{apiRoot}/3gpp-bdt/v1'

variables:

apiRoot:

default: https://example.com

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

paths:

/{scsAsId}/subscriptions:

parameters:

- name: scsAsId

description: String identifying the SCS/AS.

in: path

required: true

schema:

type: string

get:

responses:

'200':

description: all BDT policy subscriptions.

content:

application/json:

schema:

type: array

items:

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

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:

requestBody:

description: Contains the data to create a BDT subscription.

required: true

content:

application/json:

schema:

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

callbacks:

bDTWarningNotification:

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

post:

requestBody: # contents of the callback message

required: true

content:

application/json:

schema:

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

responses:

'204':

description: No Content (successful 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: Background data transfer policies offered to the SCS/AS.

content:

application/json:

schema:

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

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'

'409':

$ref: 'TS29122\_CommonData.yaml#/components/responses/409'

'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}/subscriptions/{subscriptionId}:

parameters:

- name: scsAsId

description: String identifying the SCS/AS.

in: path

required: true

schema:

type: string

- name: subscriptionId

description: String identifying the individual BDT policy resource in the SCEF.

in: path

required: true

schema:

type: string

get:

responses:

'200':

description: Background data transfer policies offered to and selected by the SCEF.

content:

application/json:

schema:

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

'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:

requestBody:

description: Parameters to update/replace the existing BDT subscription

required: true

content:

application/json:

schema:

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

responses:

'200':

description: OK (Successful update of the BDT subscription)

content:

application/json:

schema:

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

'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:

requestBody:

description: Contains information to be performed on the Bdt data structure to select a transfer policy.

required: true

content:

application/merge-patch+json:

schema:

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

responses:

'200':

description: The Individual BDT Policy resource is modified with a selected policy and a representation of that resource is returned.

content:

application/json:

schema:

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

'204':

description: The Individual BDT Policy resource is modified with a selected policy.

'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:

responses:

'204':

description: The Individual BDT Policy resource is 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:

Bdt:

type: object

properties:

self:

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

supportedFeatures:

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

volumePerUE:

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

numberOfUEs:

type: integer

minimum: 1

description: Identifies the number of UEs.

desiredTimeWindow:

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

locationArea:

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

locationArea5G:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

referenceId:

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

transferPolicies:

type: array

items:

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

minItems: 1

description: Identifies an offered transfer policy.

readOnly: true

selectedPolicy:

type: integer

description: Identity of the selected background data transfer policy. Shall not be present in initial message exchange, can be provided by NF service consumer in a subsequent message exchange.

externalGroupId:

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

notificationDestination:

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

warnNotifEnabled:

type: boolean

description: Indicates whether the BDT warning notification is enabled or not.

trafficDes:

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

required:

- volumePerUE

- numberOfUEs

- desiredTimeWindow

BdtPatch:

type: object

properties:

selectedPolicy:

type: integer

description: Identity of the selected background data transfer policy.

warnNotifEnabled:

type: boolean

description: Indicates whether the BDT warning notification is enabled or not.

notificationDestination:

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

required:

- selectedPolicy

TransferPolicy:

type: object

properties:

bdtPolicyId:

type: integer

description: Identifier for the transfer policy

maxUplinkBandwidth:

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

maxDownlinkBandwidth:

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

ratingGroup:

type: integer

minimum: 0

description: Indicates the rating group during the time window.

timeWindow:

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

required:

- bdtPolicyId

- ratingGroup

- timeWindow

ExNotification:

type: object

properties:

bdtRefId:

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

locationArea5G:

$ref: 'TS29122\_CommonData.yaml#/components/schemas/LocationArea5G'

timeWindow:

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

candPolicies:

type: array

items:

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

minItems: 1

description: This IE indicates a list of the candidate transfer policies from which the AF may select a new transfer policy due to network performance degradation.

required:

- bdtRefId

TrafficDescriptor:

type: string

description: Identify a traffic descriptor as defined in Figure 5.2.2 of 3GPP TS 24.526, octets v+5 to w.

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