**3GPP TSG-CT WG3 Meeting #142 *C3-253476***

**Gothenburg, SE, 25 - 29 August 2025**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.122** | **CR** | **0959** | **rev** | **1** | **Current version:** | **19.3.0** |  |
|  | | | | | | | | |
| *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:*** | Correction on BDT functionality | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NBI19 | | | | |  | ***Date:*** | | | 2025-08-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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:*** | | The following issues require correction:   * Missing applicable features for reused data type. * NOTE 2 in table 5.4.2.1.2 should only apply to attributes with no feature control. The feature definition already indicates the 5G support. * Target URI for the notifications is obtained as part of the Bdt & BdtPatch data types. * LocBdt\_5G features are only applicable to the support of Location area. * How Bdt feature and Bdt\_5G feature are supported is not described. Related location information is mutually exclusive according to TS 23.503, clause 6.1.2.4: *The AF provides as Network Area Information either a geographical area (e.g. a civic address or shapes), or an area of interest that includes a list of TAs or list of NG-RAN nodes and/or a list of cell identifiers.* | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The issues listed above are corrected. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incorrect applicabilities and possible Target URIs may bring interoperability issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.3; 5.4.2.1.1; 5.4.2.1.2; 5.4.3A.2.2; 5.4.4. | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 does not impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

### 4.4.3 Procedures for resource management of Background Data Transfer

These procedures are used by an SCS/AS to perform the resource management of background data transfer (BDT) to a set of UEs, i.e. the SCS/AS requests a time window and related conditions from the SCEF via the T8 interface.

In order to create a resource for the background data transfer policy, the SCS/AS shall send an HTTP POST message to the SCEF for the "BDT Subscriptions" resource to negotiate the transfer policy. The body of the HTTP POST message shall include SCS/AS Identifier, Volume per UE (total volume for both DL and UL or separate volume for DL and/or UL), Number of UEs, Desired Time Window and optionally a location area information (either within "locationArea" attribute if Bdt feature is supported or within "locationArea5G" attribute if LocBdt\_5G feature is supported).

After receiving the HTTP POST message, if the SCS/AS is authorized, the SCEF shall map the SCS/AS Identifier to ASP Identifier and negotiate the transfer policy with the PCRF as defined in 3GPP TS 29.154 [9]. After receiving the response including the determined transfer policies from the PCRF, the SCEF shall create a resource "Individual BDT Subscription" which represents the BDT subscription, addressed by a URI that contains the SCS/AS identifier and an SCEF-created subscription identifier, and shall respond to the SCS/AS with a 201 Created message, including a Location header field containing the URI for the created resource and a message body, which may also include Reference ID and a set of transfer policies. The SCS/AS shall use the URI received in the Location header in subsequent requests to the SCEF to refer to this background data transfer subscription. If the SCEF receives a response with an error code from the PCRF, the SCEF shall not create the resource and shall respond to the SCS/AS with a corresponding failure code as described in clause 5.2.6.

The SCS/AS may also send an HTTP PUT message to the SCEF for the "Individual BDT Subscription" resource to request starting an update for negotiation of background data transfer policy. The body of the HTTP PUT message shall include data as described in the POST message. The external group identifier shall remain unchanged from previously provided value. After receiving such request, if the SCS/AS is authorized, the SCEF shall negotiate the transfer policy with the PCRF as defined in 3GPP TS 29.154 [9]. After receiving the response including the determined transfer policies from the PCRF, the SCEF shall send an HTTP response to the SCS/AS with a "200 OK" status code and shall include the Bdt data type in the response body, or with a "204 No Content" status code. If the SCEF receives a response with an error code from the PCRF, the SCEF shall not update the resource and shall respond to the SCS/AS with a corresponding failure code as described in clause 5.2.6.

NOTE 1: The SCEF starts a new BDT policy negotiation in the Nt interface by sending the request to the PCRF without the previously associated BDT Reference ID.

If more than one policy is included in the HTTP response, the SCS/AS shall send an HTTP PATCH message to inform the SCEF for the "Individual BDT Subscription" resource of the transfer policy selected by the SCS/AS. After receiving the HTTP PATCH message, the SCEF shall send an HTTP response to the SCS/AS with a "200 OK" status code and shall include the Bdt data type in the response body, or with a "204 No Content" status code, then the SCEF shall interact with the PCRF as defined in 3GPP TS 29.154 [9]. If the SCEF identifies any error (e.g. selected policy is not within the set of transfer policies), the SCEF shall not update the resource and shall respond to the SCS/AS with a corresponding failure code as described in clause 5.2.6.

The SCS/AS may also send an HTTP DELETE message to the SCEF for the "Individual BDT Subscription" resource requesting to remove an individual resource identified by the URI received in the response to the request that has created resource a URI. After receiving such request, the SCEF shall delete the resource and send an HTTP response to the SCS/AS with a corresponding status code.

NOTE 2: The SCEF can also remove the resource when the last window end time in transfer policies expires.

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

##### 5.4.2.1.1 Introduction

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

Table 5.4.2.1.1-1 specifies data types re-used by the ResourceManagementOfBdt API from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the ResourceManagementOfBdt API.

Table 5.4.2.1.1-1: ResourceManagementOfBdt API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| SupportedFeatures | 3GPP TS 29.571 [45] | Used to negotiate the applicability of the optional features defined in table 5.4.4-1. |  |

Table 5.4.2.1.1-2 specifies the data types defined for the ResourceManagementOfBdt API.

Table 5.4.2.1.1-2: ResourceManagementOfBdt API specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| Bdt | 5.4.2.1.2 | Represents a Background Data Transfer subscription. |  |
| BdtPatch | 5.4.2.1.3 | Represents a Background Data Transfer subscription modification request. |  |
| ExNotification | 5.4.2.1.4 | Represents a Background Data Transfer notification. | BdtNotification\_5G |
| TrafficDescriptor | 5.4.2.3.2 | Identify a traffic descriptor as defined in Figure 5.2.2 of 3GPP TS 24.526 [64]. |  |
| TransferPolicy | 5.4.2.2.2 | Represents an offered transfer policy sent from the SCEF to the SCS/AS, or a selected transfer policy sent from the SCS/AS to the SCEF. |  |

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

##### 5.4.2.1.2 Type: Bdt

This type represents a BDT subscription. The same structure is used in the subscription request and subscription response.

Table 5.4.2.1.2-1: Definition of type Bdt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | Cardinality | Description | Applicability (NOTE 1) |
| self | Link | 0..1 | Link to the resource "Individual BDT Subscription". This parameter shall be supplied by the SCEF in HTTP responses. |  |
| supportedFeatures | SupportedFeatures | 0..1 | Used to negotiate the supported optional features of the API as described in clause 5.2.7.  This attribute shall be provided in the POST request and in the response of successful resource creation. |  |
| aspId | string | 0..1 | Identifies an application service provider. | AspId\_5G |
| volumePerUE | UsageThreshold | 1 | Identifies the data volume expected to be transferred per UE. |  |
| numberOfUEs | integer | 1 | Identifies the number of UEs. |  |
| desiredTimeWindow | TimeWindow | 1 | Identifies the time interval. |  |
| locationArea | LocationArea | 0..1 | Identifies the area within which the SCS/AS requests the number of UE. | Bdt |
| locationArea5G | LocationArea5G | 0..1 | Identifies the area within which the AF requests the number of UE. | LocBdt\_5G |
| referenceId | BdtReferenceId | 0..1 | Identifies a selected policy of background data transfer. |  |
| transferPolicies | array(TransferPolicy) | 0..N | Containsa list ofoffered transfer policies. |  |
| selectedPolicy | integer | 0..1 | 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 | ExternalGroupId | 0..1 | Identifies a group of users. | Group\_Id |
| notificationDestination | Link | 0..1 | Contains the URI to receive the BDT notification from the NEF. | BdtNotification\_5G |
| warnNotifEnabled | boolean | 0..1 | Indicates whether the BDT warning notification is enabled or not.  If it is set to true, the BDT warning notification is enabled; if it is set to false or absent, the BDT warning notification is disabled. | BdtNotification\_5G |
| trafficDes | TrafficDescriptor | 0..1 | Contains the traffic descriptor of the background data. (NOTE 2) |  |
| energyInd | boolean | 0..1 | Indicates whether the AF is interested in transferring data in time windows that consume lower energy:  - "true": the AF is interested in transferring data in time windows that consume lower energy;  - "false"(default): the AF is not interested in transferring data in time windows that consume lower energy. | Energy |
| NOTE 1: Properties marked with a feature as defined in clause 5.4.4 are applicable as described in clause 5.2.7. If no feature are indicated, the related property applies for all the features.  NOTE 2: The attribute is only applicable to the NEF. | | | | |

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

##### 5.4.3A.2.2 Target URI

The Callback URI **"{**notificationDestination**}"** shall be used with the callback URI variables defined in table 5.4.3A.2.2-1.

Table 5.4.3A.2.2-1: Callback URI variables

|  |  |  |
| --- | --- | --- |
| Name | Data type | Definition |
| notificationDestination | Link | Reference provided by the AF when the AF requests to send a BDT warning notification when the network performance in the area of interest goes below the criteria set by the operator.  This URI shall be provided within the "notificationDestination" attribute in the Bdt or BdtPatch data type. |

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

### 5.4.4 Used Features

The table below defines the features applicable to the ResourceManagementOfBdt API. Those features are negotiated as described in clause 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) location area requirement. |
| 2 | LocBdt\_5G | The feature supports the 5G location area 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. |
| 5 | enNB | The feature supports enhancement of northbound interfaces, e.g. enable the SCS/AS to update notification destination during modification procedure. |
| 6 | AspId\_5G | Indicates the support of application service provider.  This feature is not applicable to pre-5G (e.g. 4G). |
| 7 | Energy | Indicates the support of Energy indicator.  This feature is not applicable to pre-5G (e.g. 4G). |
| 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. | | |

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