**3GPP TSG-CT WG3 Meeting #131C3-235423**

**Chicago, USA, 9 - 13 November, 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.521** | **CR** | **0194** | **rev** | **-** | **Current version:** | **18.2.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | IETF RFC 7540, RFC 7807 obsoleted by RFC 9113 and RFC 9457 respectively | | | | | | | | | |
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| ***Source to WG:*** | China Mobile | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc18 | | | | |  | ***Date:*** | | | 2023-11-06 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As indicated by C3-234018, IETF RFC 9113 ("HTTP/2", published in June 2022) obsoletes RFC 7540.  IETF RFC 9457 ("Problem Details for HTTP APIs") obsoletes RFC 7807. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * Update the RFC references. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Reference to a obsoleted RFC. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 4.2.6.2, 5.2.1, 5.2.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 29.501 CR 0148 | | |
| ***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 \*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[4] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".

[5] 3GPP TS 29.513: "5G System; Policy and Charging Control signalling flows and QoS parameter mapping; Stage 3".

[6] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[7] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[8] IETF RFC 9113: "HTTP/2".

[9] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

[10] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[11] OpenAPI: "OpenAPI Specification Version 3.0.0", https://spec.openapis.org/oas/v3.0.0.

[12] 3GPP TS 29.510: "5G System; Network Function Repository Services; Stage 3".

[13] IETF RFC 9457: "Problem Details for HTTP APIs".

[14] 3GPP TS 29.213: " Policy and Charging Control signalling flows and Quality of Service (QoS) parameter mapping".

[15] 3GPP TS 33.501: "Security architecture and procedures for 5G system".

[16] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[17] 3GPP TS 23.527: "5G System; Restoration Procedures".

[18] 3GPP TR 21.900: "Technical Specification Group working methods".

[19] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System (5GS)".

[20] IETF RFC 7396: "JSON Merge Patch".

[21] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".

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

#### 4.2.6.2 Creating a new subscription

Figure 4.2.6.2-1 illustrates the creation of a subscription.



Figure 4.2.6.2-1: Creation of a subscription

To subscribe to event notifications, the NF service consumer shall send an HTTP POST request with: "{apiRoot}/nbsf-management/<apiVersion>/subscriptions" as Resource URI and the BsfSubscription data structure as request body that shall include:

- an URI where to receive the requested notifications within the "notifUri" attribute;

- a Notification Correlation Identifier provided by the NF service consumer for the requested notifications within the "notifCorreId" attribute;

- identification of the events to subscribe as "events" attribute;

- the SUPI within the "supi" attribute;

- if the NF service consumer subscribes to event notifications of newly registered and deregistered PCF for a PDU session, the "events" attribute indicating "PCF\_PDU\_SESSION\_BINDING\_REGISTRATION"/"PCF\_PDU\_SESSION\_BINDING\_DEREGISTRATION" and/or subscribes to the event notifications of binding registration of the first PDU session and deregistration of the last PDU session for a S-NSSAI and DNN combination indicating "SNSSAI\_DNN\_BINDING\_REGISTRATION"/"SNSSAI\_DNN\_BINDING\_DEREGISTRATION" respectively, and one DNN and S-NSSAI pair to which the subscription applies within the "snssaiDnnPairs" attribute and, when the subscription applies to more than one DNN and S-NSSAI, the list of the remaining DNN and S-NSSAI pairs to which the subscription applies within the "addSnssaiDnnPairs" attribute, which includes the DNN within the "dnn" attribute and the S-NSSAI within the "snssai" attribute;

NOTE 1: When the subscribed event is SNSSAI\_DNN\_BINDING\_REGISTRATION and SNSSAI\_DNN\_BINDING\_DEREGISTRATION, only the status of the binding for the concerned S-NSSAI and DNN combination is reported, i.e., it is not needed to report the complete binding related information, but only an indication of registration or deregistration event.

- if the NF service consumer subscribes to event notifications of newly registered and deregistered PCF for a UE, the "events" attribute indicating "PCF\_UE\_BINDING\_REGISTRATION"/"PCF\_UE\_BINDING\_DEREGISTRATION".

The BsfSubscription data structure as request body may also include:

- the GPSI within the "gpsi" attribute.

If the BSF cannot successfully fulfil the received HTTP POST request due to an internal BSF error or an error in the HTTP POST request, the PCF shall send an HTTP error response as specified in clause 5.7.

Upon successful reception of the HTTP POST request with "{apiRoot}/nbsf-management/<apiVersion>/subscriptions" as request URI and "BsfSubscription" data structure as request body, the BSF shall create a new "Individual Binding Subscription" resource, store the subscription and send a HTTP "201 Created" response as shown in figure 4.2.6.2-1, step 2. The BSF shall include in the "201 Created" response:

- a Location header field; and

- a "BsfSubscriptionResp" data type in the content.

The Location header field shall contain the URI of the created individual application session context resource i.e., "{apiRoot}/nbsf-management/<apiVersion>/subscriptions/{subId}".

The "BsfSubscriptionResp" data type shall contain:

- the representation of the created "Individual Binding Subscription" resource within the "BsfSubscription" data type; and

- when the BSF already has available the requested information at the time of the event subscription request, the related notification information within the "BsfNotification" data type as specified in clause 4.2.8.2.

The subscription to any event lasts till the NF service consumer terminates it as described in subsclause 4.2.7.2. For every subscribed event, the continuous reporting notification method shall apply.

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

### 5.2.1 General

HTTP/2, IETF RFC 9113 [8], shall be used as specified in clause 5 of 3GPP TS 29.500 [6].

HTTP/2 shall be transported as specified in clause 5.3 of 3GPP TS 29.500 [6].

The OpenAPI [11] specification of HTTP messages and content bodies for the Nbsf\_Management is contained in Annex A.

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

#### 5.2.2.2 Content type

JSON, IETF RFC 8259 [9], shall be used as content type of the HTTP bodies specified in the present specification as specified in clause 5.4 of 3GPP TS 29.500 [6]. The use of the JSON format shall be signalled by the content type "application/json".

"Problem Details" JSON object shall be used to indicate additional details of the error in a HTTP response body and shall be signalled by the content type "application/problem+json", as defined in IETF RFC 9457 [13].

JSON object used in the HTTP PATCH request shall be encoded according to "JSON Merge Patch" and shall be signalled by the content type "application/merge-patch+json", as defined in IETF RFC 7396 [20].

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