**3GPP TSG- WG3 Meeting # *r1***

**Xiamen, China, 9 - 13 October, 2023 *(Revision of C3-234xxx)***

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** | **0757** | **rev** |  | **Current version:** | **18.3.0** |  |
|  |
| *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:***  | Updating the obsoleted IETF HTTP RFCs |
|  |  |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NBI18 |  | ***Date:*** | 2023-09-20 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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 canbe 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 per the discussion paper in C4-233140 and the agreed CR C4-233140 to TS 29.500 in CT4, in addition to the received LS from CT4 on the same topic in C3-234018, the obsoleted IETF HTTP RFCs need to be updated in this specification. And, replace the terms "payload" and "payload body" with the term "content" in the HTTP messages. |
|  |  |
| ***Summary of change:*** | 1. Update the obsoleted IEFT HTTP RFCs in a similar way to the agreed CR C4-233140 to TS 29.500 in CT4.
2. Replace the terms "payload" and "payload body" with the term "content" in the HTTP messages.
3. Additional editorial corrections.
 |
|  |  |
| ***Consequences if not approved:*** | Obsolete IEFT HTTP RFCs remain referenced and used in this specification. |
|  |  |
| ***Clauses affected:*** | 2, 5.2.2.1, 5.2.5.4, 5.2.6, 5.2.8.3.4, 5.2.8.3.5, 5.4.3.3.3.2, 5.4.3.3.3.3, 5.5.3.3.3.3, 5.6.3.2.3.4, 5.6.3.3.3.3, 5.6.3.4.3.4, 5.7.3.2.3.4, 5.8.2.2.2.3.4, 5.8.2.2.4.3.4, 5.8.2.2.5.3.2, 5.8.2.2.5.3.3, 5.8.3.2.2.3.4, 5.8.3.2.4.3.4, 5.8.3.2.5.3.2, 5.8.3.2.5.3.3, 5.10.3.2.3.4, 5.10.3.3.3.2, 5.10.3.3.3.5, 5.10.3.4.3.2, 5.10.3.4.3.5, 5.11.3.2.3.5, 5.14.3.3.3.2, 5.14.3.3.3.3, A.2, A.8.1, A.10, A.11, A.16 |
|  |  |
|  | **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 backwards compatible corrections to the Data Types applicable to several APIs, GMDviaMBMSbyMB2 API, CpProvisioning API, PfdManagement API, RacsParameterProvisioning API defined in this specification. |
|  |  |
| ***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 23.682: "Architecture enhancements to facilitate communications with packet data networks and applications".

[3] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[4] Void.

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

[6] Hypertext Transfer Protocol (HTTP) Status Code Registry at IANA, <http://www.iana.org/assignments/http-status-codes>.

[7] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

[8] IETF RFC 7807: "Problem Details for HTTP APIs".

[9] 3GPP TS 29.154: "Service capability exposure functionality over Nt reference point".

[10] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point".

[11] 3GPP TS 29.336: "Home Subscriber Server (HSS) diameter interfaces for interworking with packet data networks and applications".

[12] 3GPP TS 29.128: "Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) interfaces for interworking with packet data networks and applications".

[13] 3GPP TS 29.201: "Representational State Transfer (REST) reference point between Application Function (AF) and Protocol Converter (PC)".

[14] 3GPP TS 23.003: "Numbering, addressing and identification".

[15] IETF RFC 3339: "Date and Time on the Internet: Timestamps".

[16] IETF RFC 9112: "HTTP/1.1".

[17] IETF RFC 9110: "HTTP Semantics".

[18] Void.

[19] Void.

[20] IETF RFC 9111: "HTTP Caching".

[21] Void.

[22] IETF RFC 9113: "HTTP/2".

[23] 3GPP TS 29.155: "Traffic steering control; Representational state transfer (REST) over St reference point".

[24] 3GPP TS 29.368: "Tsp interface protocol between the MTC Interworking Function (MTC-IWF) and Service Capability Server (SCS)".

[25] 3GPP TS 29.337: "Diameter-based T4 interface for communications with packet data networks and applications".

[26] 3GPP TS 29.250: "Nu reference point between SCEF and PFDF for sponsored data connectivity".

[27] Open API: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.

[28] IETF RFC 1166: "Internet Numbers".

[29] IETF RFC 5952: "A recommendation for Ipv6 address text representation".

[30] 3GPP TS 29.153: "Service capability exposure functionality over Ns reference point".

[31] 3GPP TS 24.250: "Protocol for Reliable Data Service; Stage 3".

[32] IETF RFC 6455: "The Websocket Protocol".

[33] 3GPP TS 29.272: "Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol".

[34] 3GPP TS 29.338: "Diameter based protocols to support Short Message Service (SMS) capable Mobile Management Entities (MMEs)".

[35] 3GPP TS 33.187: "Security aspects of Machine-Type Communications (MTC) and other mobile data applications communications enhancements".

[36] 3GPP TS 29.468: "Group Communication System Enablers for LTE (GCSE\_LTE);MB2 Reference Point;Stage 3".

[37] 3GPP TS 29.116: "Presentational state transfer over xMB reference point between Content Provider and BM-SC".

[38] IETF RFC 5789: "PATCH method for HTTP".

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

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

[41] YAML (10/2009): "YAML Ain't Markup Language (YAML™) Version 1.2", <http://www.yaml.org/spec/1.2/spec.html>.

[42] 3GPP TS 29.572: "5G System; Location Management Services; Stage 3".

[43] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[44] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".

[45] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces Stage 3".

[46] IETF RFC 6733: "Diameter Base Protocol".

[47] 3GPP TS 23.222: "Common API Framework for 3GPP Northbound APIs; Stage 2".

[48] 3GPP TS 29.222: "Common API Framework for 3GPP Northbound APIs; Stage 3".

[49] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".

[50] 3GPP TS 29.554: "5G System; Background Data Transfer Policy Control Service; Stage 3".

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

[52] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

[53] 3GPP TS 33.122: "Security Aspects of Common API Framework for 3GPP Northbound APIs".

[54] 3GPP TS 38.413: "NG-RAN; NG Application Protocol (NGAP)".

[55] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE\_LTE); stage 2".

[56] 3GPP TS 26.348, "Northbound Application Programming Interface (API) for Multimedia Broadcast/Multicast Service (MBMS) at the xMB reference point".

[57] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".

[58] 3GPP TR 21.900: "Technical Specification Group working methods".

[59] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Resource Control (RRC); Protocol Specification".

[60] 3GPP TS 38.331: "NR; Radio Resource Control (RRC) protocol specification".

[61] 3GPP TS 29.675: "User Equipment (UE) radio capability provisioning service; Stage 3".

[62] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".

[63] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".

[64] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[65] 3GPP TS 29.515: "5G System; Gateway Mobile Location Services; Stage 3".

[66] IETF RFC 5322: "Internet Message Format".

[67] IETF RFC 6902: "JavaScript Object Notation (JSON) Patch".

[68] 3GPP TS 33.558: "Security aspects of enhancement of support for enabling edge applications; Stage 2".

[69] IETF RFC 5234: "Augmented BNF for Syntax Specifications: ABNF".

[70] 3GPP TS 29.523: "5G System; Policy Control Event Exposure Service; Stage 3".

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

#### 5.2.2.1 General

For T8 APIs, support of HTTP/1.1 (IETF RFC 9112 [16], IETF RFC 9110 [17], IETF RFC 9111 [20]) over TLS is mandatory and support of HTTP/2 (IETF RFC 9113 [22]) over TLS is recommended. TLS shall be used as specified in clause 5.5 of 3GPP TS 33.187 [35]. An SCS/AS desiring to use HTTP/2 shall use the HTTP upgrade mechanism to negotiate applicable HTTP version as described in IETF RFC 9113 [22].

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

#### 5.2.5.4 Notification Delivery using Websocket

The procedures in the present clause only apply if SCS/AS and SCEF support the "Notification\_websocket" feature. If the feature "Notification\_websocket" is supported, then the feature "Notification\_test\_event" shall also be supported.

If a delivery of notifications is required for an API and the SCS/AS does not know from previous interactions with the SCEF whether delivery of notifications over a separate HTTP connection works, the SCS/AS should initially request the SCEF to try to establish a separate HTTP connection for notification delivery according to clause 5.2.5.2 by providing a URI to the SCEF designating where to send HTTP Notifications, and shall also subscribe to the notification of a test event as in clause 5.2.5.3.

If the SCS/AS does not receive the requested notification of the test event during a configured period after the subscription, the SCS/AS may configure the subscription to request the SCEF to provide a URI for an HTTP connection to upgrade to Websocket, setting the "requestWebsocketUri" attribute to "true" as specified in clause 5.2.1.2.13. The SCS/AS may also request the SCEF to provide a URI in a new subscription creation request, and should in this case terminate the original subscription.

NOTE 1: If the SCS/AS has requested the delivery of notifications to a separate entity, it needs to be informed by that separate entity about the receipt of the test notification. That communication between the separate entity and the SCS/AS is out of scope of the present document.

When the SCEF receives a subscription creation or update request to use Websockets to deliver notifications (i.e. with the "requestWebsocketUri" attribute set to "true"), it shall assign a Websocket URI where to receive a Websocket connection establishment and provide this URI in the "websocketUri" attribute in the response, as defined in clause 5.1.2.1.13. Once such Websocket URI has been assigned for a particular subscription resource, subsequent update requests to this resource that ask for the assignment of a new Websocket URI for that subscription shall be rejected by the SCEF.

Upon the reception of the Websocket URI from the SCEF in the "websocketUri" attribute, as specified in clause 5.2.1.2.13-1, in the subscription creation or subscription update response, the SCS/AS or a separate entity that is intended to receive the notification shall establish an HTTP connection towards that URI and shall upgrade that connection to the Websocket protocol (IETF RFC 6455 [32]) using the HTTP upgrade mechanism defined in IETF RFC 9110 [17].

NOTE 2: For delivery of Notifications to a separate entity, the SCS/AS needs to provide the Websocket URI to that separate entity. That communication between the SCS/AS and the separate entity is out of scope of the present document.

The following framing of the request and response shall be used when delivering a notification or acknowledging its delivery through Websockets.

NOTE 3: The framing is aligned as much as possible with HTTP delivery in order to simplify implementations.

To deliver a notification towards the SCS/AS, the SCEF shall embed the following structure in a separate Websocket data frame with 0x2 (Binary) opcode in the following order:

1) The string "3GPP-WS-Notif-Seq:", followed by a blank, followed by a four-byte sequence number, encoded as decimal number in ASCII, followed by CRLF

2) The following HTTP headers in any order, with the syntax and semantics as defined in IETF RFC 9110 [17]: Content-Type (mandatory), Content-Encoding (optional), Content-Length (mandatory). Every HTTP header line shall be ended by CRLF.

3) CRLF to end the headers section.

4) The content of the notification, as defined in the individual APIs.

NOTE 4: The content is the same as the one that would be used if delivering the notification as defined in clause 5.2.5.3.

To acknowledge the reception of a notification message towards the SCEF, the SCS/AS shall embed the following structure in a separate Websocket data frame with 0x2 (Binary) opcode in the following order:

1) The string "3GPP-WS-Notif-Seq:", followed by a blank, followed by the four-byte sequence number of the notification to be confirmed, encoded as decimal number in ASCII, followed by CRLF.

2) The HTTP status code (e.g. 204) and status message (e.g. No Content) as defined for HTTP delivery of the notification in the individual APIs, separated by a single blank character, and ended by CRLF.

3) Conditionally, as defined in IETF RFC 9110 [17], the following HTTP headers in any order: Content-Type, Content-Encoding, and Content-Length. Every HTTP header line shall be ended by CRLF.

4) CRLF to end the headers section.

5) The content of the response, if applicable based on the status code and the HTTP headers, as defined in IETF RFC 9110 [17].

NOTE 5: The status code, the status message and the content (if applicable), are the same as if delivering the notification as defined in clause 5.2.5.3.

Use of CRLF is defined in IETF RFC 9110 [17].

The SCEF need not wait for the confirmation of each notification before delivering the next notification. The SCEF shall determine whether a notification has been delivered successfully by correlating the sent notification with the received acknowledgement by checking the sequence numbers of both for equality. The SCEF may re-send a notification, using the same sequence number, if it has not received an acknowledgement with a matching sequence number after a configurable time-out. The SCS/AS shall consider notifications with the same sequence number that arrive within a configurable time interval as duplicates.

The SCS/AS should send periodic Websocket "PING" frames to keep the connection alive.

NOTE 6: the TCP layer will handle a possible fragmentation and reassembly of large messages.

The security related clause 6 shall also apply for the HTTP connection that is upgraded to Websocket.

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

### 5.2.6 Error handling

Table 5.2.6-1 lists response bodies that are applicable to all APIs and as responses for all requests in the present specification unless otherwise specified. The HTTP client shall mandatorily support the processing of the status code for all the applicable methods, when received in a HTTP response message. In such cases the HTTP client shall also support the handling of the "ProblemDetails" JSON object with the Content-Type header field set to the value "application/problem+json", if the corresponding API definition in the current specification does not specify another response body for the corresponding status code.

Table 5.2.6-1: Response bodies supported for responses to all requests.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Response body | Data type | Cardinality | ResponseCodes(NOTE 1) | Remarks(NOTE 2, NOTE 4) | Applied Methods |
| ProblemDetails | 1 | 400 Bad Request | Incorrect parameters were passed in the request.  | GET, POST PUT, PATCH, DELETE |
| ProblemDetails | 1 | 401 Unauthorized | The client is not authorized as described in IETF RFC 9110 [17]. | GET, POST, PUT, PATCH, DELETE |
| ProblemDetails | 1 | 403 Forbidden | This represents the case when the server is able to understand the request but unable to fulfil the request due to errors (e.g. the requested parameters are out of range). More information may be provided in the "invalidParams" attribute of the "ProblemDetails" structure.(NOTE 3) | GET, POST, PUT, PATCH, DELETE |
| ProblemDetails | 1 | 404 Not Found | The resource URI was incorrect, for instance because of a wrong "scsAsId" field. | GET, POST, PUT, PATCH, DELETE |
| ProblemDetails | 1 | 406 Not Acceptable | The content format provided in the "Accept" header is not acceptable by the server. | GET |
| ProblemDetails | 1 | 411 Length Required | The code indicates that the server refuses to accept the request without a Content-Length header field. | POST, PUT, PATCH |
| ProblemDetails | 1 | 413 Payload Too Large | If the received HTTP request contains content larger than the server is able to process, the NF shall reject the HTTP request with the HTTP status code "413 content Too Large". | POST, PUT, PATCH |
| ProblemDetails | 1 | 415 Unsupported Media Type | The code indicates that the resource is in a format which is not supported by the server for the method. | POST, PUT, PATCH |
| ProblemDetails | 1 | 429 Too Many Requests | The code indicates that due to excessive traffic which, if continued over time, may lead to (or may increase) an overload situation.The HTTP header field "Retry-After" may be added in the response to indicate how long the client has to wait before making a new request. | GET, POST, PUT, PATCH, DELETE |
| ProblemDetails | 1 | 500 Internal Server Error  | The server encountered an unexpected condition that prevented it from fulfilling the request. | GET, POST, PUT, PATCH, DELETE |
| ProblemDetails | 1 | 503 Service Unavailable  | The server is unable to handle the request. | GET, POST, PUT, PATCH, DELETE |
| NOTE 1: In addition to the above response codes, the SCEF can also send other valid HTTP response codes, if applicable. The list of all valid HTTP response codes can be found in HTTP Status Code Registry at IANA [6].NOTE 2: The MIME media type that shall be used within the related Content-Type header field is "application/problem+json", as defined in IETF RFC 7807 [8].NOTE 3: The information about which provided parameters are out of range shall be provided in the "invalidParams" attribute of the "ProblemDetails" structure for the API of network parameter configuration.NOTE 4: More information may be provided in the "detail" attribute of the "ProblemDetails" structure. |

The protocol and application errors in clause 5.2.7.2 of 3GPP TS 29.500 [44] are applicable for above status codes for the APIs defined in the present specification. Specific errors are contained in the related API definition for each API.

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

5.2.8.3.4 Nbi-Api-Lci

The header contains a comma-delimited list (see IETF RFC 9110 [17]) of Load Control Information (LCI). See clause 5.2.11.

The encoding of the header follows the ABNF as defined in IETF RFC 9110 [17].

Nb-Api-Lci = "Nb-Api-Lci:" 1#(RWS timestamp ";" RWS lcMetric ")

timestamp = "Timestamp:" RWS DQUOTE date-time DQUOTE

Mandatory parameter. The date-time type is specified in IETF RFC 5322 [66] and clause 7.1.1.1 of IETF RFC 9110 [17]. It indicates the timestamp associated with the load control information.

lcMetric = "Load-Metric:" RWS (DIGIT / %x31-39 DIGIT / "100") "%"

Mandatory parameter. Load-Metric is up to 3 digits long decimal string and the value range shall be from 0 to 100.

EXAMPLE: Load Control Information:

Nbi-Api-Lci: Timestamp: "Tue, 04 Feb 2021 08:50:28 GMT"; Load-Metric: 50%

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

5.2.8.3.5 Nb-Api-Oci

The header contains a comma-delimited list of Overload Control Information (OCI). See clause 5.2.11.

The encoding of the header follows the ABNF as defined in IETF RFC 9110 [17].

Nb-Api-Oci = "Nb-Api-Oci:" 1#(RWS timestamp ";" RWS validityPeriod ";" RWS olcMetric ")

timestamp = "Timestamp:" RWS DQUOTE date-time DQUOTE

Mandatory parameter. The date-time type is specified in IETF RFC 5322 [66] and clause 7.1.1.1 of IETF RFC 9110 [17]. It indicates the timestamp at which the overload control information was generated.

validityPeriod = "Period-of-Validity:" RWS 1\*DIGIT "s"

Mandatory parameter. Period of validity is a timer that is measured in seconds. Once the timer expires, the OCI becomes invalid.

olcMetric = "Overload-Reduction-Metric:" RWS (DIGIT / %x31-39 DIGIT / "100") "%"

Mandatory parameter. Overload-Reduction-Metric up to 3 digits long decimal string and the value range shall be from 0 to 100.

EXAMPLE: Overload Control Information:

Nbi-Api-Oci: Timestamp: "Tue, 04 Feb 2021 08:50:28 GMT"; Period-of-Validity: 90s; Overload-Reduction-Metric: 25%

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

###### 5.4.3.3.3.2 PUT

The PUT method allows the SCS/AS to modify an existing subscription resource completely. It is initiated by the SCS/AS and answered by the SCEF.

This method shall support request and response data structures, and response codes, as specified in the table 5.4.3.3.3.2-1.

Table 5.4.3.3.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| Bdt | 1 | The SCS/AS requests to update the BDT policy subscription. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| Bdt | 1 | 200 OK | The subscription was modified successfully. The SCEF shall return an updated subscription in the response content. |
| none |  | 204 No Content | The subscription was updated successfully. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 also apply. |

Table 5.4.3.3.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.4.3.3.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.4.3.3.3.3 PATCH

The PATCH method allows the SCS/AS to modify an existing subscription resource, in order to notify the SCEF about the selected transfer policy. The SCS/AS shall initiate the HTTP PATCH message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.4.3.3.3.3-1.

Table 5.4.3.3.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| BdtPatch | 1 | Background data transfer policy selected by the SCS/AS. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| Bdt | 1 | 200 OK | The resource was modified successfully.The SCEF shall return an updated subscription in the response content. |
| none |  | 204 No Content | The resource was modified successfully. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the GET method listed in table 5.2.6-1 also apply. |

Table 5.4.3.3.3.3-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.4.3.3.3.3-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.5.3.3.3.3 PATCH

The PATCH method allows to change the sponsoring status of an active chargeable party transaction. It also allows to activate a background data tranfer policy. The SCS/AS shall initiate the HTTP PATCH request message and the SCEF shall respond to the message.This method shall support request and response data structures, and response codes, as specified in the table 5.5.3.3.3.3-1.

Table 5.5.3.3.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| ChargeablePartyPatch | 1 | Sponsor status change, usage threshold change and/or background data transfer policy activation. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| ChargeableParty | 1 | 200 OK | The chargeable party transaction resource was modified successfully. The SCEF shall return a representation of the updated chargeable party transaction resource in the response content. |
| none |  | 204 No Content | The chargeable party transaction resource was modified successfully.  |
| none |  | 307 Temporary Redirect | Temporary redirection, during transaction modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during transaction modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 also apply. |

Table 5.5.3.3.3.3-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.5.3.3.3.3-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.6.3.2.3.4 POST

To create a NIDD configuration, the SCS/AS shall use the HTTP POST method on the "configurations" collection resource as follows:

- the body of the message is encoded in JSON format with the data structure defined in table 5.6.2.1.2-1.

The possible response messages from the SCEF, depending on whether the POST request is successful or unsuccessful, are shown in table 5.6.3.2.3.4-1.

Table 5.6.3.2.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| NiddConfiguration | 1 | Parameters to create and authorize a NIDD configuration with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| NiddConfiguration | 1 | 201 Created | The NIDD configuration was created successfully. The SCEF shall return a data structure of type "NiddConfiguration" in the response content.The URI of the created resource shall be returned in the "Location" HTTP header. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.6.3.2.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-nidd/v1/{scsAsId}/configurations/{configurationId} |

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

###### 5.6.3.3.3.3 PATCH

Assuming that a NIDD configuration has been created using the HTTP POST method described in clause 5.6.3.2.3.4, partial updating of its properties can be performed by the SCS/AS by using the HTTP PATCH method on the "configuration" instance resource as follows:

- the body of the message is encoded in JSON format with the data structure defined in table 5.6.2.1.2-1

The possible response messages from the SCEF, depending on whether the PATCH request is successful or unsuccessful, are shown in table 5.6.3.3.3.3-1.

Table 5.6.3.3.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| NiddConfigurationPatch | 1 | Parameters to update a NIDD configuration with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| NiddConfiguration | 1 | 200 OK | The NIDD configuration was modified successfully. The SCEF shall return an updated data structure of type "NiddConfiguration" in the response content. |
| None |  | 204 No Content | The NIDD configuration has been modified successfully and no content is to be sent in the response message body. |
| None |  | 307 Temporary Redirect | Temporary redirection, during configuration modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| None |  | 308 Permanent Redirect | Permanent redirection, during configuration modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 also apply. |

Table 5.6.3.3.3.3-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.6.3.3.3.3-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.6.3.4.3.4 POST

To deliver the downlink non-IP data, the SCS/AS shall use the HTTP POST method on the "NIDD downlink data deliveries" resource with the body of the message is encoded in JSON format with the data structure defined in table 5.6.2.1.3-1.

The possible response messages from the SCEF, depending on whether the POST request is successful or unsuccessful, are shown in Table 5.6.3.4.3.4-1.

Table 5.6.3.4.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| NiddDownlinkDataTransfer | 1 | The parameters and non-IP data for the MT delivery. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| NiddDownlinkDataTransfer | 1 | 200 OK | The NIDD downlink data delivery was successful. The SCEF shall return a data structure of type "NiddDownlinkDataTransfer" in the response content. |
| NiddDownlinkDataTransfer | 1 | 201 Created | The NIDD downlink data delivery request was accepted by the SCEF, the NIDD will be performed later.The SCEF shall return a data structure of type "NiddDownlinkDataTransfer" in the response content, and shall return the URI of the resource representing the downlink data transfer in the "Location" header. |
| None |  | 307 Temporary Redirect | Temporary redirection, during NIDD downlink data delivery. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| None |  | 308 Permanent Redirect | Permanent redirection, during NIDD downlink data delivery. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NiddDownlinkDataDeliveryFailure | 0..1 | 500 Internal Server Error | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply.NOTE 2: Failure cases are described in clause 5.6.5.3. |

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

###### 5.7.3.2.3.4 POST

To create a long-term transaction for a device triggering, the SCS/AS shall use the HTTP POST method on the "transactions" collection resource as follows:

- the body of the message is encoded in JSON format with the data structure defined in table 5.7.2.1.2-1.

The possible response messages from the SCEF, depending on whether the POST request is successful or unsuccessful, are shown in Table 5.7.3.2.3.4-1.

Table 5.7.3.2.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| DeviceTriggering | 1 | Parameters to request a device triggering delivery. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| DeviceTriggering | 1 | 201 Created | The long term transaction for the device triggering was created successfully. The SCEF shall return a data structure of type "DeviceTriggering" in the response content.The URI of the created resource shall be returned in the "Location" HTTP header |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.7.3.2.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-device-triggering/v1/{scsAsId}/transactions/{transactionId} |

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

5.7.3.3.3.5 DELETE

To cancel an ongoing device triggering delivery, the SCS/AS shall use the HTTP DELETE method on the individual "transaction" resource which is indicated by the URI in the Location header of the HTTP POST response:

The possible response messages from the SCEF, depending on whether the DELETE request is successful or unsuccessful, are shown in Table 5.7.3.3.3.5-1.

**Table 5.7.3.3.3.5-1: Data structures supported by the DELETE request/response by the resource**

|  |  |  |  |
| --- | --- | --- | --- |
| **Request body** | **Data type** | **Cardinality** | **Remarks** |
| none |  | . |
| **Response body** | **Data type** | **Cardinality** | **Response****codes** | **Remarks** |
| DeviceTriggering  | 1 | 200 OK | The Device Triggering delivery was cancelled successfully.The SCEF shall return a data structure of type "DeviceTriggering" with a "TERMINATE" status in the response body. |
| None |  | 204 No Content | The Device Triggering was cancelled successfully. The SCEF shall not return a response content.  |
| none |  | 307 Temporary Redirect | Temporary redirection, during transaction termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during transaction termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 also apply. |

**Table 5.7.3.3.3.5-2: Headers supported by the 307 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

**Table 5.7.3.3.3.5-3: Headers supported by the 308 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

5.8.2.2.2.3.4 POST

The POST method creates a new TMGI Allocation resource for a given SCS/AS. It is initiated by the SCS/AS and answered by the SCEF.

This method shall support request and response data structures, and response codes, as specified in the table 5.8.2.2.2.3.4-1.

Table 5.8.2.2.2.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| TMGIAllocation | 1 | Parameters to create a TMGI allocation resource |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| TMGIAllocation | 1 | 201 Created | The creation of a TMGI allocation was created successfully. The SCEF shall return a data structure of type "TMGI Allocation" in the response content.On success, the HTTP response shall include a "Location" HTTP header that points to the created resource URI identified by the ScsAsId and the TMGI |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.8.2.2.2.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-group-message-delivery-mb2/v1/{scsAsId}/tmgi-allocation/{tmgi} |

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

5.8.2.2.4.3.4 POST

The POST method creates a new group message delivery via MBMS resource for a given SCS/AS and TMGI selected by the SCS/AS. It is initiated by the SCS/AS and answered by the SCEF. The SCEF shall construct the URI of the created resource using that URI.

This method shall support request and response data structures, and response codes, as specified in the table 5.8.2.2.4.3.4-1.

Table 5.8.2.2.4.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByMb2 | 1 | Parameters to create and authorize a group message delivery via MBMS with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByMb2 | 1 | 201 Created | The creation of a group message delivery was created successfully. The SCEF shall return a data structure of type "GMDViaMBMSByMb2" in the response content.On success, the HTTP response shall include a "Location" HTTP header that points to the created resource URI identified by the ScsAsId and the Transaction Id. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.8.2.2.4.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-group-message-delivery-mb2/v1/{scsAsId}/tmgi-allocation/{tmgi}/delivery-via-mbms/{transactionId} |

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

5.8.2.2.5.3.2 PUT

Assuming that a group message delivery has been created using the HTTP POST method described in clause 5.8.2.2.4.3.4, replace of its properties can be performed by the SCS/AS by using the HTTP PUT method on the "delivery\_via\_mbms" instance resource as follows:

- the body of the message is encoded in JSON format with the data structure defined in table 5.8.2.2.5.3.2-1.

The content body of the group message delivery via MBMS update request shall contain updated full representation of the group message delivery resource. Only the properties "locationinfo", "accuracy", "messageDeliverystarttime" and "groupMessagepayload" can be modified.

The possible response messages from the SCEF, depending on whether the PUT request is successful or unsuccessful, are shown in table 5.8.2.2.5.3.2-1.

Table 5.8.2.2.5.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByMb2 | 1 | Parameters to replace group message delivery resource with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByMb2 | 1 | 200 OK | The group message delivery was modified successfully. The SCEF shall return an updated data structure of type "GMDViaMBMSByMb2" in the response content. |
| none |  | 204 No Content | The group message delivery is replaced successfully, and no content is to be sent in the response message body. |
| none |  | 307 Temporary Redirect | Temporary redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 also apply. |

Table 5.8.2.2.5.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.8.2.2.5.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

5.8.2.2.5.3.3 PATCH

Assuming that a group message delivery has been created using the HTTP POST method described in clause 5.8.2.2.4.3.4, partial updating of its properties can be performed by the SCS/AS by using the HTTP PATCH method on the "delivery-via-mbms" instance resource.

This method shall support request and response data structures, and response codes, as specified in the table 5.8.2.2.5.3.3-1.

Table 5.8.2.2.5.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByMb2Patch | 1 | Parameters to partially update a group message delivery with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByMb2 | 1 | 200 OK | The group message delivery was modified successfully. The SCEF shall return an updated data structure of type "GMDViaMBMSByMb2" in the response content. |
| none |  | 204 No Content | The group message delivery is modified successfully, and no content is to be sent in the response message body. |
| none |  | 307 Temporary Redirect | Temporary redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 also apply. |

Table 5.8.2.2.5.3.3-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.8.2.2.5.3.3-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

5.8.3.2.2.3.4 POST

The POST method creates a new service resource for a given SCS/AS. It is initiated by the SCS/AS and answered by the SCEF.

This method shall support request and response data structures, and response codes, as specified in the table 5.8.3.2.2.3.4-1.

Table 5.8.3.2.2.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| ServiceCreation | 1 | Parameters to create and authorize a service with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| ServiceCreation | 1 | 201 Created | The resource of a service was created successfully. The SCEF shall return a data structure of type "ServiceCreation" in the response content.On success, the HTTP response shall include a "Location" HTTP header that points to the created resource URI identified by the ScsAsId and the ServiceId. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.8.3.2.2.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-group-message-delivery-xmb/v1/{scsAsId}/services/{serviceId} |

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

5.8.3.2.4.3.4 POST

The POST method creates a new group message delivery via MBMS resource for a given SCS/AS and service Id selected by the SCS/AS. It is initiated by the SCS/AS and answered by the SCEF. This method shall support request and response data structures, and response codes, as specified in the table 5.8.3.2.4.3.4-1.

Table 5.8.3.2.4.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByxMB | 1 | Parameters to create and authorize a group message delivery via MBMS with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByxMB | 1 | 201 Created | The creation of a group message delivery was created successfully. The SCEF shall return a data structure of type "GMDViaMBMSByxMB" in the response content.On success, the HTTP response shall include a "Location" HTTP header that points to the created resource URI identified by the ScsAsId and the Transaction Id |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply. |

Table 5.8.3.2.4.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-group-message-delivery-xmb/v1/{scsAsId}/services/{serviceId}/delivery-via-mbms/{transactionId} |

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

5.8.3.2.5.3.2 PUT

Assuming that a group message delivery has been created using the HTTP POST method described in clause 5.8.3.2.4.3.4, replace of its properties can be performed by the SCS/AS by using the HTTP PUT method on the "delivery-via-mbms" instance resource as follows:

- the body of the message is encoded in JSON format with the data structure defined in table 5.8.3.1.1.3-1.

The content body of the group message delivery via MBMS update request shall contain updated full representation of the group message delivery resource. Only the properties "locationinfo", "accuracy", "messageDeliverystarttime", "messageDeliverystoptime" and "groupMessagepayload" can be modified.

The possible response messages from the SCEF, depending on whether the PUT request is successful or unsuccessful, are shown in table 5.8.3.2.5.3.2-1.

Table 5.8.3.2.5.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByxMB | 1 | Parameters to replace group message delivery resource with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByxMB | 1 | 200 OK | The group message delivery was modified successfully.The SCEF shall return an updated data structure of type "GMDViaMBMSByxMB" in the response content. |
| none |  | 204 No Content | The group message delivery was modified successfully, and no content is to be sent in the response message body. |
| none |  | 307 Temporary Redirect | Temporary redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 also apply. |

Table 5.8.3.2.5.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.8.3.2.5.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

5.8.3.2.5.3.3 PATCH

Assuming that a group message delivery has been created using the HTTP POST method described in clause 5.8.3.2.4.3.4, partial updating of its properties can be performed by the SCS/AS by using the HTTP PATCH method on the "delivery-via-mbms" instance resource.

This method shall support request and response data structures, and response codes, as specified in the table 5.8.3.2.5.3.3-1.

Table 5.8.3.2.5.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| GMDViaMBMSByxMB Patch | 1 | Parameters to partially update a group message delivery with the SCEF. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| GMDViaMBMSByxMB | 1 | 200 OK | The group message delivery was modified successfully. The SCEF shall return an updated data structure of type "GMDViaMBMSByxMB" in the response content. |
| none |  | 204 No Content | The group message delivery was modified successfully, and no content is to be sent in the response message body. |
| none |  | 307 Temporary Redirect | Temporary redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during resource modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 also apply. |

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

###### 5.10.3.2.3.4 POST

The POST method allows to create subscription for a given SCS/AS. The SCS/AS shall initiate the HTTP POST request message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.10.3.2.3.4-1.

Table 5.10.3.2.3.4-1: Data structures supported by the POST request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| CpInfo | 1 | Change information in CP parameter set. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| CpInfo | 1 | 201 Created | The subscription was created successfully. The SCEF shall return the created subscription in the response content. CpReport may be included to provide detailed failure information for some CP sets. |
| array(CpReport) | 1..N | 500 Internal Server Error | The CP parameters for all CP sets were not created successfully. CpReport is included with detailed information. |
| ProblemDetails | 0..1 | 403 Forbidden | (NOTE 2) |
| ProblemDetails | 0..1 | 404 Not Found | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the POST method listed in table 5.2.6-1 also apply.NOTE 2: Failure causes are described in clause 5.10.5. |

Table 5.10.3.2.3.4-2: Headers supported by the 201 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | Contains the URI of the newly created resource, according to the structure: {apiRoot}/3gpp-cp-parameter-provisioning/v1/{scsAsId}/subscriptions/{subscriptionId} |

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

###### 5.10.3.3.3.2 PUT

The PUT method allows to change (add/update/remove) one ore more CP parameter set(s) resource(s). The SCS/AS shall initiate the HTTP PUT request message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.14.3.3.3.2-1.

Table 5.10.3.3.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| CpInfo | 1 | Change information in CP parameter set(s). |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| CpInfo | 1 | 200 OK | The subscription was modified successfully. The SCEF shall return an updated subscription in the response content. CpReport may be included to provide detailed failure information for some CP sets. |
| none |  | 204 No Content | The subscription was modified successfully and no content is to be sent in the response message body. |
| array(CpReport) | 1..N | 500 Internal Server Error | The CP parameters for all CP sets were not created successfully. CpReport is included with detailed information. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 also apply. |

Table 5.10.3.3.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.10.3.3.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.10.3.3.3.5 DELETE

The DELETE method allows to remove an active subscription. The SCS/AS shall initiate the HTTP DELETE request message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.10.3.3.3.5-1.

Table 5.10.3.3.3.5-1.: Data structures supported by the DELETE request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| none |  |  |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| none |  | 204 No Content | The subscription was deleted successfully. The content shall be empty. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 also apply. |

Table 5.10.3.3.3.5-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.10.3.3.3.5-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.10.3.4.3.2 PUT

The PUT method allows to update a CP parameter set resource. The SCS/AS shall initiate the HTTP PUT request message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.10.3.4.3.2-1.

Table 5.10.3.4.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| CpParameterSet | 1 | Change information in CP parameter set. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| CpParameterSet | 1 | 200 OK | The CP parameter set resource was modified successfully.The SCEF shall return an updated CP parameter set resource in the response content. |
| none |  | 204 No Content | The CP parameter set resource was modified successfully and no content is to be sent in the response message body. |
| CpReport | 1 | 409 Conflict | The CP parameters for the CP set were not updated successfully, applicable for error SET\_ID\_DUPLICATED in table 5.10.2.3.5-1. |
| CpReport | 1 | 500 Internal Server Error | The CP parameters for the CP set were not updated successfully, applicable for other errors in table 5.10.2.3.5-1. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 also apply. |

Table 5.10.3.4.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.10.3.4.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.10.3.4.3.5 DELETE

The DELETE method allows to remove an active subscription. The SCS/AS shall initiate the HTTP DELETE request message and the SCEF shall respond to the message.

This method shall support request and response data structures, and response codes, as specified in the table 5.10.3.4.3.5-1.

Table 5.10.3.4.3.5-1.: Data structures supported by the DELETE request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| none |  |  |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| none |  | 204 No Content | The subscription was deleted successfully. The content shall be empty. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 also apply. |

Table 5.10.3.4.3.5-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.10.3.4.3.5-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.11.3.2.3.5 DELETE

To remove all PFDs for a given SCS/AS, the SCS/AS shall use the HTTP DELETE method on the "PFD Management Transactions" resource.

The possible response messages from the SCEF, depending on whether the DELETE request is successful or unsuccessful, are shown in table 5.11.3.2.3.5-1.

Table 5.11.3.2.3.5-1: Data structures supported by the DELETE request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| none |  |  |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| none |  | 204 No Content | All PFDs were removed successfully. The SCEF shall not return a response content. |
| none |  | 307 Temporary Redirect | Temporary redirection, during transaction termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during transaction termination. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| NOTE: The mandatory HTTP error status codes for the DELETE method listed in table 5.2.6-1 also apply. |

Table 5.11.3.2.3.5-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.11.3.2.3.5-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

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

###### 5.14.3.3.3.2 PUT

The PUT method allows changing the service information of an active subscription. The properties "ueIpv4Addr" or "ueIpv6Addr" shall remain unchanged from previously provided value.

This method shall support request and response data structures, and response codes, as specified in the table 5.14.3.3.3.2-1.

Table 5.14.3.3.3.2-1: Data structures supported by the PUT request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| AsSessionWithQoSSubscription | 1 | Set up AS session with required QoS. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| AsSessionWithQoSSubscription | 1 | 200 OK | The subscription was modified successfully.The SCEF shall return an updated subscription in the response content. |
| none |  | 204 No Content | The subscription was updated successfully. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| ProblemDetailsAsSessionWithQos | 0..1 | 403 Forbidden | (NOTE 2) |
| ProblemDetails | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the PUT method listed in table 5.2.6-1 also apply.NOTE 2: Failure cases are described in clause 5.14.5.3. |

Table 5.14.3.3.3.2-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.14.3.3.3.2-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.14.3.3.3.2-4: Headers supported by the 403 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Retry-After | string | M | 1 | Indicates the time the NF service consumer has to wait before making a new request. |

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

###### 5.14.3.3.3.3 PATCH

The PATCH method allows to change the service information of an active subscription.

This method shall support request and response data structures, and response codes, as specified in the table 5.14.3.3.3.3-1.

Table 5.14.3.3.3.3-1: Data structures supported by the PATCH request/response by the resource

|  |  |  |  |
| --- | --- | --- | --- |
| Request body | Data type | Cardinality | Remarks |
| AsSessionWithQoSSubscriptionPatch | 1 | Partial update of an AS session with required QoS. |
| Response body | Data type | Cardinality | Responsecodes | Remarks |
| AsSessionWithQoSSubscription | 1 | 200 OK | The subscription was modified successfully.The SCEF shall return an updated subscription in the response content. |
| none |  | 204 No Content | The subscription was modified successfully. |
| none |  | 307 Temporary Redirect | Temporary redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| none |  | 308 Permanent Redirect | Permanent redirection, during subscription modification. The response shall include a Location header field containing an alternative URI of the resource located in an alternative SCEF.Redirection handling is described in clause 5.2.10. |
| ProblemDetailsAsSessionWithQos | 0..1 | 403 Forbidden | (NOTE 2) |
| ProblemDetails | 0..1 | 403 Forbidden | (NOTE 2) |
| NOTE 1: The mandatory HTTP error status codes for the PATCH method listed in table 5.2.6-1 also apply.NOTE 2: Failure cases are described in clause 5.14.5.3. |

Table 5.14.3.3.3.3-2: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.14.3.3.3.3-3: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | string | M | 1 | An alternative URI of the resource located in an alternative SCEF. |

Table 5.14.3.3.3.3-4: Headers supported by the 403 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Retry-After | string | M | 1 | Indicates the time the NF service consumer has to wait before making a new request. |

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

# A.2 Data Types applicable to several APIs

For the purpose of referencing entities in the Open API file defined in this Annex, it shall be assumed that this Open API file is contained in a physical file named "TS29122\_CommonData.yaml".

NOTE: For the purpose of referencing the error status codes in the Open API file defined in this Annex, this Open API file contains all the mandatory status codes as defined in table 5.2.6-1, all the API specific error status codes defined for T8 APIs, in addition, some error status codes not used in the current release of this specification but for the purpose of referencing by other specifications.

openapi: 3.0.0

info:

 title: TS 29.122 Common Data Types

 version: 1.3.0-alpha.3

 description: |

 Data types applicable to several APIs.

 © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

externalDocs:

 description: 3GPP TS 29.122 V18.3.0 T8 reference point for Northbound APIs

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

paths: {}

components:

 schemas:

 SponsorInformation:

 description: Represents a sponsor information.

 type: object

 properties:

 sponsorId:

 type: string

 description: It indicates Sponsor ID.

 aspId:

 type: string

 description: It indicates Application Service Provider ID.

 required:

 - sponsorId

 - aspId

 UsageThreshold:

 description: Represents a usage threshold.

 type: object

 properties:

 duration:

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

 totalVolume:

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

 downlinkVolume:

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

 uplinkVolume:

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

 UsageThresholdRm:

 description: >

 Represents the same as the UsageThreshold data type but with the nullable:true property.

 type: object

 properties:

 duration:

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

 totalVolume:

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

 downlinkVolume:

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

 uplinkVolume:

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

 nullable: true

 TimeWindow:

 description: Represents a time window identified by a start time and a stop time.

 type: object

 properties:

 startTime:

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

 stopTime:

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

 required:

 - startTime

 - stopTime

 Acknowledgement:

 description: Represents a successful acknowledgement of a notification.

 type: object

 properties:

 details:

 type: string

 description: A human-readable explanation specific to this successful acknowledgement

 required:

 - details

 NotificationData:

 description: >

 Represents the information to be conveyed in a bearer level event(s) notification.

 type: object

 properties:

 transaction:

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

 eventReports:

 type: array

 items:

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

 minItems: 1

 description: Contains the reported event and applicable information

 required:

 - transaction

 - eventReports

 EventReport:

 description: Represents an event report.

 type: object

 properties:

 event:

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

 accumulatedUsage:

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

 flowIds:

 type: array

 items:

 type: integer

 minItems: 1

 description: Identifies the IP flows that were sent during event subscription

 required:

 - event

 AccumulatedUsage:

 description: Represents an accumulated usage.

 type: object

 properties:

 duration:

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

 totalVolume:

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

 downlinkVolume:

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

 uplinkVolume:

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

 FlowInfo:

 description: Represents IP flow information.

 type: object

 properties:

 flowId:

 type: integer

 description: Indicates the IP flow identifier.

 flowDescriptions:

 type: array

 items:

 type: string

 description: >

 Indicates the packet filters of the IP flow. Refer to clause 5.3.8 of 3GPP TS 29.214 for

 encoding. It shall contain UL and/or DL IP flow description.

 minItems: 1

 maxItems: 2

 tosTC:

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

 required:

 - flowId

 TestNotification:

 description: >

 Represents a notification that can be sent to test whether a chosen notification mechanism

 works.

 type: object

 properties:

 subscription:

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

 required:

 - subscription

 WebsockNotifConfig:

 description: >

 Represents the configuration information for the delivery of notifications over Websockets.

 type: object

 properties:

 websocketUri:

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

 requestWebsocketUri:

 type: boolean

 description: Set by the SCS/AS to indicate that the Websocket delivery is requested.

 LocationArea:

 description: Represents a user location area.

 type: object

 properties:

 cellIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Indicates a list of Cell Global Identities of the user which identifies the cell the UE

 is registered.

 enodeBIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates a list of eNodeB identities in which the UE is currently located.

 routingAreaIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies a list of Routing Area Identities of the user where the UE is located.

 trackingAreaIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies a list of Tracking Area Identities of the user where the UE is located.

 geographicAreas:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 minItems: 1

 description: Identifies a list of geographic area of the user where the UE is located.

 civicAddresses:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

 minItems: 1

 description: Identifies a list of civic addresses of the user where the UE is located.

 LocationArea5G:

 description: Represents a user location area when the UE is attached to 5G.

 type: object

 properties:

 geographicAreas:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 minItems: 0

 description: Identifies a list of geographic area of the user where the UE is located.

 civicAddresses:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

 minItems: 0

 description: Identifies a list of civic addresses of the user where the UE is located.

 nwAreaInfo:

 $ref: 'TS29554\_Npcf\_BDTPolicyControl.yaml#/components/schemas/NetworkAreaInfo'

 ProblemDetails:

 description: Represents additional information and details on an error response.

 type: object

 properties:

 type:

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

 title:

 type: string

 description: >

 A short, human-readable summary of the problem type. It should not change from occurrence

 to occurrence of the problem.

 status:

 type: integer

 description: The HTTP status code for this occurrence of the problem.

 detail:

 type: string

 description: A human-readable explanation specific to this occurrence of the problem.

 instance:

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

 cause:

 type: string

 description: >

 A machine-readable application error cause specific to this occurrence of the problem.

 This IE should be present and provide application-related error information, if

 available.

 invalidParams:

 type: array

 items:

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

 minItems: 1

 description: >

 Description of invalid parameters, for a request rejected due to invalid parameters.

 supportedFeatures:

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

 InvalidParam:

 description: >

 Represents the description of invalid parameters, for a request rejected due to invalid

 parameters.

 type: object

 properties:

 param:

 type: string

 description: Attribute's name encoded as a JSON Pointer, or header's name.

 reason:

 type: string

 description: A human-readable reason, e.g. "must be a positive integer".

 required:

 - param

 PlmnId:

 description: Represents the identifier of a PLMN.

 type: object

 properties:

 mcc:

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

 mnc:

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

 required:

 - mcc

 - mnc

 ConfigResult:

 description: Represents one configuration processing result for a group's members.

 type: object

 properties:

 externalIds:

 type: array

 items:

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

 minItems: 1

 description: Each element indicates an external identifier of the UE.

 msisdns:

 type: array

 items:

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

 minItems: 1

 description: >

 Each element identifies the MS internal PSTN/ISDN number allocated for the UE.

 resultReason:

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

 required:

 - resultReason

 oneOf:

 - required: [externalIds]

 - required: [msisdns]

 Bandwidth:

 type: integer

 minimum: 0

 description: integer indicating a bandwidth in bits per second.

 BdtReferenceId:

 type: string

 description: string identifying a BDT Reference ID as defined in clause 5.3.3 of 3GPP TS 29.154.

 Binary:

 type: string

 description: string with format "binary" as defined in OpenAPI Specification.

 Bytes:

 type: string

 description: >

 String with format "byte" as defined in OpenAPI Specification, i.e, base64-encoded

 characters.

 DayOfWeek:

 type: integer

 minimum: 1

 maximum: 7

 description: >

 integer between and including 1 and 7 denoting a weekday. 1 shall indicate Monday, and the

 subsequent weekdays shall be indicated with the next higher numbers. 7 shall indicate

 Sunday.

 DateTime:

 format: date-time

 type: string

 description: string with format "date-time" as defined in OpenAPI.

 DateTimeRm:

 format: date-time

 type: string

 description: >

 string with format "date-time" as defined in OpenAPI with "nullable=true" property.

 nullable: true

 DateTimeRo:

 format: date-time

 type: string

 description: >

 string with format "date-time" as defined in OpenAPI with "readOnly=true" property.

 readOnly: true

 DurationSec:

 type: integer

 minimum: 0

 description: Unsigned integer identifying a period of time in units of seconds.

 DurationSecRm:

 type: integer

 minimum: 0

 description: >

 Unsigned integer identifying a period of time in units of seconds with "nullable=true"

 property.

 nullable: true

 DurationSecRo:

 type: integer

 minimum: 0

 description: >

 Unsigned integer identifying a period of time in units of seconds with "readOnly=true"

 property.

 readOnly: true

 DurationMin:

 type: integer

 format: int32

 minimum: 0

 description: Unsigned integer identifying a period of time in units of minutes.

 ExternalId:

 type: string

 description: >

 string containing a local identifier followed by "@" and a domain identifier. Both the local

 identifier and the domain identifier shall be encoded as strings that do not contain any "@"

 characters. See Clause 4.6.2 of 3GPP TS 23.682 for more information.

 ExternalGroupId:

 type: string

 description: >

 string containing a local identifier followed by "@" and a domain identifier. Both the local

 identifier and the domain identifier shall be encoded as strings that do not contain any "@"

 characters. See Clauses 4.6.2 and 4.6.3 of 3GPP TS 23.682 for more information.

 Ipv4Addr:

 type: string

 description: >

 string identifying a Ipv4 address formatted in the "dotted decimal" notation as defined in

 IETF RFC 1166.

 Ipv6Addr:

 type: string

 description: >

 string identifying a Ipv6 address formatted according to clause 4 in IETF RFC 5952.

 The mixed Ipv4 Ipv6 notation according to clause 5 of IETF RFC 5952 shall not be used.

 Ipv4AddrRo:

 type: string

 description: >

 string identifying a Ipv4 address formatted in the "dotted decimal" notation

 as defined in IETF RFC 1166, with "readOnly=true" property.

 readOnly: true

 Ipv6AddrRo:

 type: string

 description: >

 string identifying a Ipv6 address formatted according to clause 4 in IETF RFC 5952,

 with "readOnly=true" property. The mixed Ipv4 Ipv6 notation according to clause 5 of

 IETF RFC 5952 shall not be used.

 readOnly: true

 Link:

 type: string

 description: string formatted according to IETF RFC 3986 identifying a referenced resource.

 LinkRm:

 type: string

 description: >

 String formatted according to IETF RFC 3986 identifying a referenced resource,

 but with the nullable property set to true.

 nullable: true

 Mcc:

 type: string

 description: >

 String encoding a Mobile Country Code part of the PLMN, comprising 3 digits,

 as defined in 3GPP TS 38.413.

 Mnc:

 type: string

 description: >

 String encoding a Mobile Network Code part of the PLMN, comprising 2 or 3 digits,

 as defined in 3GPP TS 38.413.

 Msisdn:

 type: string

 description: >

 string formatted according to clause 3.3 of 3GPP TS 23.003 that describes an MSISDN.

 Port:

 type: integer

 description: Unsigned integer with valid values between 0 and 65535.

 minimum: 0

 maximum: 65535

 PortRo:

 type: integer

 description: >

 Unsigned integer with valid values between 0 and 65535, with "readOnly=true" property.

 minimum: 0

 maximum: 65535

 readOnly: true

 ResourceId:

 type: string

 description: string chosen by the SCEF to serve as identifier in a resource URI.

 ScsAsId:

 type: string

 description: string that identifies an SCS/AS.

 TimeOfDay:

 type: string

 description: >

 String with format partial-time or full-time as defined in clause 5.6 of IETF RFC 3339.

 Examples, 20:15:00, 20:15:00-08:00 (for 8 hours behind UTC).

 Uri:

 type: string

 description: string providing an URI formatted according to IETF RFC 3986.

 Volume:

 type: integer

 format: int64

 minimum: 0

 description: Unsigned integer identifying a volume in units of bytes.

 VolumeRm:

 type: integer

 format: int64

 minimum: 0

 description: >

 Unsigned integer identifying a volume in units of bytes with "nullable=true" property.

 nullable: true

 EthFlowInfo:

 description: Represents Ethernet flow information.

 type: object

 properties:

 flowId:

 type: integer

 description: Indicates the Ethernet flow identifier.

 ethFlowDescriptions:

 type: array

 items:

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

 description: >

 Indicates the packet filters of the Ethernet flow. It shall contain UL and/or DL

 Ethernet flow description.

 minItems: 1

 maxItems: 2

 required:

 - flowId

 Event:

 anyOf:

 - type: string

 enum:

 - SESSION\_TERMINATION

 - LOSS\_OF\_BEARER

 - RECOVERY\_OF\_BEARER

 - RELEASE\_OF\_BEARER

 - USAGE\_REPORT

 - FAILED\_RESOURCES\_ALLOCATION

 - SUCCESSFUL\_RESOURCES\_ALLOCATION

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration and is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the event reported by the SCEF.

 Possible values are:

 - SESSION\_TERMINATION: Indicates that Rx session is terminated.

 - LOSS\_OF\_BEARER : Indicates a loss of a bearer.

 - RECOVERY\_OF\_BEARER: Indicates a recovery of a bearer.

 - RELEASE\_OF\_BEARER: Indicates a release of a bearer.

 - USAGE\_REPORT: Indicates the usage report event.

 - FAILED\_RESOURCES\_ALLOCATION: Indicates the resource allocation is failed.

 - SUCCESSFUL\_RESOURCES\_ALLOCATION: Indicates the resource allocation is successful.

 ResultReason:

 anyOf:

 - type: string

 enum:

 - ROAMING\_NOT\_ALLOWED

 - OTHER\_REASON

 - type: string

 description: >

 This string provides forward-compatibility with future extensions to the enumeration

 and is not used to encode content defined in the present version of this API.

 description: |

 Represents a failure result reason.

 Possible values are:

 - ROAMING\_NOT\_ALLOWED: Identifies the configuration parameters are not allowed by roaming

 agreement.

 - OTHER\_REASON: Identifies the configuration parameters are not configured due to other

 reason.

#

# HTTP responses

#

 responses:

 '307':

 description: Temporary Redirect

 headers:

 Location:

 description: 'An alternative URI of the resource.'

 required: true

 schema:

 type: string

 '308':

 description: Permanent Redirect

 headers:

 Location:

 description: 'An alternative URI of the resource.'

 required: true

 schema:

 type: string

 '400':

 description: Bad request

 content:

 application/problem+json:

 schema:

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

 '401':

 description: Unauthorized

 content:

 application/problem+json:

 schema:

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

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

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

 '404':

 description: Not Found

 content:

 application/problem+json:

 schema:

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

 '406':

 description: Not Acceptable

 content:

 application/problem+json:

 schema:

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

 '409':

 description: Conflict

 content:

 application/problem+json:

 schema:

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

 '411':

 description: Length Required

 content:

 application/problem+json:

 schema:

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

 '412':

 description: Precondition Failed

 content:

 application/problem+json:

 schema:

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

 '413':

 description: Content Too Large

 content:

 application/problem+json:

 schema:

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

 '414':

 description: URI Too Long

 content:

 application/problem+json:

 schema:

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

 '415':

 description: Unsupported Media Type

 content:

 application/problem+json:

 schema:

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

 '429':

 description: Too Many Requests

 content:

 application/problem+json:

 schema:

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

 '500':

 description: Internal Server Error

 content:

 application/problem+json:

 schema:

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

 '503':

 description: Service Unavailable

 content:

 application/problem+json:

 schema:

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

 default:

 description: Generic Error

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

## A.8.1 GMDviaMBMSbyMB2 API

openapi: 3.0.0

info:

 title: GMDviaMBMSbyMB2

 description: |

 API for Group Message Delivery via MBMS by MB2

 © 2022, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

 version: 1.2.0

externalDocs:

 description: 3GPP TS 29.122 V17.6.0 T8 reference point for Northbound APIs

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-group-message-delivery-mb2/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{scsAsId}/tmgi-allocation:

 get:

 summary: read all TMGI Allocation resource for a given SCS/AS

 operationId: FetchAllTMGIAllocations

 tags:

 - TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (successful query of TMGI Allocation resource)

 content:

 application/json:

 schema:

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

 '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: Creates a new TMGI Allocation resource for a given SCS/AS.

 operationId: CreateTMGIAllocation

 tags:

 - TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the TMGI Allocation to be created in the SCEF

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: successful creation of an TMGI Allocation

 content:

 application/json:

 schema:

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

 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}/tmgi-allocation/{tmgi}:

 get:

 summary: Read a TMGI Allocation resource for a given SCS/AS and a TMGI.

 operationId: FetchIndTMGIAllocation

 tags:

 - Individual TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (successful query of TMGI Allocation resource)

 content:

 application/json:

 schema:

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

 '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:

 summary: Updates an existing TMGI Allocation resource for a given SCS/AS and a TMGI.

 operationId: UpdateIndTMGIAllocation

 tags:

 - Individual TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the TMGI Allocation to be updated in the SCEF

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: successful creation of an TMGI Allocation

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The TMGI expiration time renewal is successful, and no content is to be sent in

 the response message body.

 '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:

 summary: Updates an existing TMGI Allocation resource for a given SCS/AS and a TMGI.

 operationId: ModifyIndTMGIAllocation

 tags:

 - Individual TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the TMGI Allocation to be updated in the SCEF

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: successful creation of an TMGI Allocation

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The TMGI expiration time renewal is successful, and no content is to be sent

 in the response message body.

 '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 an existing TMGI Allocation resource for a given SCS/AS and a TMGI.

 operationId: DeleteTMGIAllocation

 tags:

 - Individual TMGI Allocation Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content, successful deletion of an TMGI Allocation

 '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'

 /{scsAsId}/tmgi-allocation/{tmgi}/delivery-via-mbms:

 get:

 summary: Read all group message delivery via MBMS resource for a given SCS/AS and a TMGI.

 operationId: FecthAllGMDViaMBMSByMB2

 tags:

 - Delivery via MBMS Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK (successful query of Delivery via MBMS resource)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 '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: Creates a new delivery via MBMS for a given SCS/AS and a TMGI.

 operationId: CreateGMDViaMBMSByMB2

 tags:

 - Delivery via MBMS Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the GMD via MBMS by MB2 resource to be Created in the SCEF

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 callbacks:

 gMDByMb2Notification:

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

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDByMb2Notification'

 responses:

 '200':

 description: OK (The successful acknowledgement of the notification with a body)

 content:

 application/json:

 schema:

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

 '204':

 description: 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: successful creation of an GMD via MBMS by MB2 resource

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 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}/tmgi-allocation/{tmgi}/delivery-via-mbms/{transactionId}:

 get:

 summary: Read all group message delivery via MBMS resource for a given SCS/AS and a TMGI.

 operationId: FetchIndDeliveryViaMBMS

 tags:

 - Individual Delivery via MBMS resource Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 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 an Delivery via MBMS resource)

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 '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:

 summary: Updates a existing delivery via MBMS for a given SCS/AS, a TMGI and transaction Id.

 operationId: UpdateIndDeliveryViaMBMS

 tags:

 - Individual Delivery via MBMS resource Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 - name: transactionId

 in: path

 description: Identifier of transaction

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the GMD via MBMS by MB2 resource to be udpated in the SCEF

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 responses:

 '200':

 description: successful update of an individual GMD via MBMS by MB2 resource

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 '204':

 description: >

 The group message delivery is replaced successfully, and no content is to be sent

 in the response message body.

 '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:

 summary: Updates a existing delivery via MBMS for a given SCS/AS, a TMGI and transaction Id.

 operationId: ModifyIndDeliveryViaMBMS

 tags:

 - Individual Delivery via MBMS resource Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 - name: transactionId

 in: path

 description: Identifier of transaction

 required: true

 schema:

 type: string

 requestBody:

 description: representation of the GMD via MBMS by MB2 resource to be udpated in the SCEF

 required: true

 content:

 application/merge-patch+json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2Patch'

 responses:

 '200':

 description: successful update of an individual GMD via MBMS by MB2 resource

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/GMDViaMBMSByMb2'

 '204':

 description: >

 The group message delivery is modified successfully, and no content is to be sent

 in the response message body.

 '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 delivery via MBMS resource for a given SCS/AS, a TMGI and a transcation Id.

 operationId: DeleteIndDeliveryViaMBMS

 tags:

 - Individual Delivery via MBMS resource Operation

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of SCS/AS

 required: true

 schema:

 type: string

 - name: tmgi

 in: path

 description: TMGI

 required: true

 schema:

 type: string

 - name: transactionId

 in: path

 description: Identifier of transaction

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content, successful deletion of an resouce of deliery via MBMS

 '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:

 TMGIAllocation:

 description: Represents an individual TMGI Allocation resource.

 type: object

 properties:

 self:

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

 supportedFeatures:

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

 externalGroupId:

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

 mbmsLocArea:

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

 tmgiExpiration:

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

 GMDViaMBMSByMb2:

 description: Represents a group message delivery via MBMS by MB2.

 type: object

 properties:

 self:

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

 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 clause 5.2.5.3. Set to false or omitted otherwise.

 websockNotifConfig:

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

 externalGroupId:

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

 mbmsLocArea:

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

 messageDeliveryStartTime:

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

 groupMessagePayload:

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

 scefMessageDeliveryIPv4:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv4AddrRo'

 scefMessageDeliveryIPv6:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/Ipv6AddrRo'

 scefMessageDeliveryPort:

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

 required:

 - notificationDestination

 GMDByMb2Notification:

 description: Represents a group message delivery notification.

 type: object

 properties:

 transaction:

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

 deliveryTriggerStatus:

 type: boolean

 description: >

 Indicates whether delivery of group message payload corresponding to the TMGI was

 successful (TRUE) or not (FALSE)

 required:

 - transaction

 - deliveryTriggerStatus

 TMGIAllocationPatch:

 description: >

 Represents the parameters to request the modification of a TMGI Allocation resource.

 type: object

 properties:

 externalGroupId:

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

 mbmsLocArea:

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

 GMDViaMBMSByMb2Patch:

 description: Represents a modification request of a group message delivery via MBMS by MB2.

 type: object

 properties:

 externalGroupId:

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

 mbmsLocArea:

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

 messageDeliveryStartTime:

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

 groupMessagePayload:

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

 notificationDestination:

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

 MbmsLocArea:

 description: >

 Represents a user location area whithin which is sent a group message delivery

 via MBMS request.

 type: object

 properties:

 cellId:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Indicates a Cell Global Identification of the user which identifies the cell the

 UE is registered.

 enodeBId:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates an eNodeB in which the UE is currently located.

 geographicArea:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/GeographicArea'

 minItems: 1

 description: Identifies a geographic area of the user where the UE is located.

 mbmsServiceAreaId:

 type: array

 items:

 type: string

 minItems: 1

 description: Identifies an MBMS Service Area Identity of the user where the UE is located.

 civicAddress:

 type: array

 items:

 $ref: 'TS29572\_Nlmf\_Location.yaml#/components/schemas/CivicAddress'

 minItems: 1

 description: Identifies a civic address of the user where the UE is located.

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

# A.10 CpProvisioning API

openapi: 3.0.0

info:

 title: 3gpp-cp-parameter-provisioning

 version: 1.3.0-alpha.3

 description: |

 API for provisioning communication pattern parameters.

 © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

externalDocs:

 description: 3GPP TS 29.122 V18.3.0 T8 reference point for Northbound APIs

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-cp-parameter-provisioning/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{scsAsId}/subscriptions:

 get:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 summary: Read all active CP parameter provisioning subscription resources for a given SCS/AS.

 operationId: FetchAllCPProvisioningSubscriptions

 tags:

 - CP provisioning Subscriptions

 responses:

 '200':

 description: OK. The subscription information related to the request URI is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 summary: Create a new subscription resource of provisioning CP parameter set(s).

 operationId: CreateCPProvisioningSubscription

 tags:

 - CP provisioning Subscriptions

 requestBody:

 description: >

 Create new subscriptions for a given SCS/AS and the provisioning CP parameter sets.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. The subscription was created successfully. The SCEF shall return the created

 subscription in the response content.

 content:

 application/json:

 schema:

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

 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':

 description: >

 The CP parameters for all sets were not created successfully. CpReport may be included

 with detailed information.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /{scsAsId}/subscriptions/{subscriptionId}:

 get:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 summary: Read a CP parameter provisioning subscription resource.

 operationId: FetchIndCPProvisioningSubscription

 tags:

 - Individual CP Provisioning Subscription

 responses:

 '200':

 description: OK. The subscription information related to the request URI is returned.

 content:

 application/json:

 schema:

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

 '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:

 summary: Modify a CP parameter provisioning subscription resource.

 operationId: UpdateIndCPProvisioningSubscription

 tags:

 - Individual CP Provisioning Subscription

 requestBody:

 description: Modify a CP parameter provisioning subscription resource.

 required: true

 content:

 application/json:

 schema:

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

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 OK. The subscription was modified successfully. The SCEF shall return an updated

 subscription in the response content.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The subscription was modified successfully and no content is to be sent

 in the response message body.

 '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':

 description: >

 The CP parameters for all sets were not updated successfully. CpReport may be included

 with detailed information.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 summary: Delete a CP parameter provisioning subscription resource.

 operationId: DeleteIndCPProvisioningSubscription

 tags:

 - Individual CP Provisioning Subscription

 responses:

 '204':

 description: >

 No Content. The subscription was deleted successfully. The content shall be empty.

 '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'

 /{scsAsId}/subscriptions/{subscriptionId}/cpSets/{setId}:

 get:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 - name: setId

 in: path

 description: Identifier of the CP parameter set

 required: true

 schema:

 type: string

 summary: Read CP at individual CP set(s) level associated with a CP parameter set Id.

 operationId: FetchIndCPSetProvisioning

 tags:

 - Individual CP set Provisioning

 responses:

 '200':

 description: OK. The subscription information related to the request URI is returned.

 content:

 application/json:

 schema:

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

 '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:

 summary: Update CP at individual CP set(s) level associated with a CP parameter set Id.

 operationId: UpdateIndCPSetProvisioning

 tags:

 - Individual CP set Provisioning

 requestBody:

 description: Change information for a CP parameter set.

 required: true

 content:

 application/json:

 schema:

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

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 - name: setId

 in: path

 description: Identifier of the CP parameter set

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 OK. The CP parameter set resource was modified successfully. The SCEF shall return an

 updated CP parameter set resource in the response content.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The CP parameter set resource was modified successfully and no content

 is to be sent in the response message body.

 '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'

 '409':

 description: The CP parameters for the CP set were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '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':

 description: The CP parameters for the CP set were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: Subscription ID

 required: true

 schema:

 type: string

 - name: setId

 in: path

 description: Identifier of the CP parameter set

 required: true

 schema:

 type: string

 summary: Delete CP at individual CP set(s) level associated with a CP parameter set Id.

 operationId: DeleteIndCPSetProvisioning

 tags:

 - Individual CP set Provisioning

 responses:

 '204':

 description: >

 No Content. The subscription was deleted successfully. The content shall be empty.

 '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:

 CpInfo:

 description: Represents the resources for communication pattern parameter provisioning.

 type: object

 properties:

 self:

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

 supportedFeatures:

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

 mtcProviderId:

 type: string

 description: Identifies the MTC Service Provider and/or MTC Application.

 dnn:

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

 externalId:

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

 msisdn:

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

 externalGroupId:

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

 cpParameterSets:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies a set of CP parameter information that may be part of this CpInfo structure.

 Any string value can be used as a key of the map.

 cpReports:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Supplied by the SCEF and contains the CP set identifiers for which CP parameter(s) are

 not added or modified successfully. The failure reason is also included. Each element

 provides the related information for one or more CP set identifier(s) and is identified

 in the map via the failure identifier as key.

 readOnly: true

 snssai:

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

 ueIpAddr:

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

 ueMacAddr:

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

 required:

 - cpParameterSets

 oneOf:

 - required: [externalId]

 - required: [msisdn]

 - required: [externalGroupId]

 CpParameterSet:

 description: Represents an offered communication pattern parameter set.

 type: object

 properties:

 setId:

 type: string

 description: >

 SCS/AS-chosen correlator provided by the SCS/AS in the request to create a resource

 for CP parameter set(s).

 self:

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

 validityTime:

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

 periodicCommunicationIndicator:

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

 communicationDurationTime:

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

 periodicTime:

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

 scheduledCommunicationTime:

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

 scheduledCommunicationType:

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

 stationaryIndication:

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

 batteryInds:

 type: array

 items:

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

 minItems: 1

 trafficProfile:

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

 expectedUmts:

 type: array

 items:

 $ref: '#/components/schemas/UmtLocationArea5G'

 minItems: 1

 description: >

 Identifies the UE's expected geographical movement. The attribute is only applicable

 in 5G.

 expectedUmtDays:

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

 expectedUmtDaysAdd:

 type: array

 items:

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

 minItems: 1

 maxItems: 5

 description: Identifies the additional day(s) of the week.

 appExpUeBehvs:

 type: array

 items:

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

 minItems: 1

 description: Contains the Application Specific Expected UE Behaviour parameters.

 confidenceLevel:

 type: string

 pattern: '^[0]\.[0-9]{2}|[1.00]$'

 accuracyLevel:

 type: string

 pattern: '^[0]\.[0-9]{2}|[1.00]$'

 required:

 - setId

 ScheduledCommunicationTime:

 description: Represents an offered scheduled communication time.

 type: object

 properties:

 daysOfWeek:

 type: array

 items:

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

 minItems: 1

 maxItems: 6

 description: >

 Identifies the day(s) of the week. If absent, it indicates every day of the week.

 timeOfDayStart:

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

 timeOfDayEnd:

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

 CpReport:

 description: >

 Represents a CP report indicating the CP set identifier(s) which CP parameter(s) are not

 added or modified successfully and the corresponding failure cause(s).

 type: object

 properties:

 setIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies the CP set identifier(s) which CP parameter(s) are not added or modified

 successfully

 failureCode:

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

 required:

 - failureCode

 UmtLocationArea5G:

 description: Represents the user location area describing the UE moving trajectory.

 allOf:

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

 - type: object

 properties:

 umtTime:

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

 umtDuration:

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

 AppExpUeBehaviour:

 description: Contains the Application Specificf Expected UE Behaviour parameters.

 type: object

 properties:

 appId:

 type: string

 description: Indicates the Application Identifier.

 expPduSesInacTm:

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

 flowDescriptions:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Represents a 3-tuple with protocol, server ip and server port for UL/DL application

 traffic. The content of the string has the same encoding as the IPFilterRule AVP

 value as defined in IETF RFC 6733.

 confidenceLevel:

 type: string

 pattern: '^[0]\.[0-9]{2}|[1.00]$'

 accuracyLevel:

 type: string

 pattern: '^[0]\.[0-9]{2}|[1.00]$'

 oneOf:

 - required: [appId]

 - required: [flowDescriptions]

 CommunicationIndicator:

 anyOf:

 - type: string

 enum:

 - PERIODICALLY

 - ON\_DEMAND

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the type of the communication.

 Possible values are:

 - PERIODICALLY: Identifies the UE communicates periodically

 - ON\_DEMAND: Identifies the UE communicates on demand

 StationaryIndication:

 anyOf:

 - type: string

 enum:

 - STATIONARY

 - MOBILE

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the stationarity of the UE.

 Possible values are:

 - STATIONARY: Identifies the UE is stationary

 - MOBILE: Identifies the UE is mobile

 CpFailureCode:

 anyOf:

 - type: string

 enum:

 - MALFUNCTION

 - SET\_ID\_DUPLICATED

 - OTHER\_REASON

 - CONFIDENCE\_LEVEL\_NOT\_SUFFICIENT

 - ACCURACY\_LEVEL\_NOT\_SUFFICIENT

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the failure reason of the CP parameter provisioning.

 Possible values are

 - MALFUNCTION: This value indicates that something functions wrongly in CP parameter provisioning or the CP parameter provisioning does not function at all.

 - SET\_ID\_DUPLICATED: The received CP set identifier(s) are already provisioned.

 - OTHER\_REASON: Other reason unspecified.

 - CONFIDENCE\_LEVEL\_NOT\_SUFFICIENT: The received confidence level for the expected UE parameter is not sufficient.

 - ACCURACY\_LEVEL\_NOT\_SUFFICIENT: The received accuracy level for the expected UE parameter is not sufficient.

 BatteryIndication:

 anyOf:

 - type: string

 enum:

 - BATTERY\_RECHARGE

 - BATTERY\_REPLACE

 - BATTERY\_NO\_RECHARGE

 - BATTERY\_NO\_REPLACE

 - NO\_BATTERY

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the type of power consumption.

 Possible values are:

 - BATTERY\_RECHARGE: UE powered with rechargeable battery.

 - BATTERY\_REPLACE: UE powered with replaceable battery.

 - BATTERY\_NO\_RECHARGE: UE powered with no rechargeable battery.

 - BATTERY\_NO\_REPLACE: UE powered with no replaceable battery.

 - NO\_BATTERY: UE not battery powered.

 TrafficProfile:

 anyOf:

 - type: string

 enum:

 - SINGLE\_TRANS\_UL

 - SINGLE\_TRANS\_DL

 - DUAL\_TRANS\_UL\_FIRST

 - DUAL\_TRANS\_DL\_FIRST

 - MULTI\_TRANS

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the type of data transmission.

 Possible values are:

 - SINGLE\_TRANS\_UL: Uplink single packet transmission.

 - SINGLE\_TRANS\_DL: Downlink single packet transmission.

 - DUAL\_TRANS\_UL\_FIRST: Dual packet transmission, firstly uplink packet transmission with

 subsequent downlink packet transmission.

 - DUAL\_TRANS\_DL\_FIRST: Dual packet transmission, firstly downlink packet transmission with

 subsequent uplink packet transmission.

 - MULTI\_TRANS: Multiple packet transmission.

 ScheduledCommunicationType:

 anyOf:

 - type: string

 enum:

 - DOWNLINK

 - UPLINK

 - BIDIRECTIONAL

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the type of scheduled communication.

 Possible values are:

 - DOWNLINK: Downlink only.

 - UPLINK: Uplink only.

 - BIDIRECTIONAL: Bi-directional.

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

# A.11 PfdManagement API

openapi: 3.0.0

info:

 title: 3gpp-pfd-management

 version: 1.3.0-alpha.2

 description: |

 API for PFD management.

 © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

externalDocs:

 description: 3GPP TS 29.122 V18.2.0 T8 reference point for Northbound APIs

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-pfd-management/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{scsAsId}/transactions:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 get:

 summary: Read all or queried PFDs for a given SCS/AS.

 operationId: FetchAllPFDManagementTransactions

 tags:

 - PFD Management Transactions

 parameters:

 - name: external-app-ids

 in: query

 description: The external application identifier(s) of the requested PFD data.

 required: false

 schema:

 type: array

 items:

 type: string

 minItems: 1

 responses:

 '200':

 description: OK. All or queried transactions related to the request URI are returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 '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 PFDs for a given SCS/AS and one or more external Application Identifier(s).

 operationId: CreatePFDManagementTransaction

 tags:

 - PFD Management Transactions

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 description: Create a new transaction for PFD management.

 responses:

 '201':

 description: >

 Created. The transaction was created successfully. The SCEF shall return the created

 transaction in the response content. PfdReport may be included to provide detailed

 failure information for some applications.

 content:

 application/json:

 schema:

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

 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':

 description: >

 The PFDs for all applications were not created successfully. PfdReport is included with

 detailed information.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 callbacks:

 notificationDestination:

 '{request.body#/notificationDestination}':

 post:

 requestBody: # contents of the callback message

 required: true

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 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'

 /{scsAsId}/transactions/{transactionId}:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: transactionId

 in: path

 description: Transaction ID

 required: true

 schema:

 type: string

 get:

 summary: Read all PFDs for a given SCS/AS and a transaction for one or more external Application Identifier(s).

 operationId: FetchIndPFDManagementTransaction

 tags:

 - Individual PFD Management Transaction

 responses:

 '200':

 description: OK. The transaction information related to the request URI is returned.

 content:

 application/json:

 schema:

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

 '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:

 summary: Update PFDs for a given SCS/AS and a transaction for one or more external Application Identifier(s).

 operationId: UpdateIndPFDManagementTransaction

 tags:

 - Individual PFD Management Transaction

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 description: Change information in PFD management transaction.

 responses:

 '200':

 description: >

 OK. The transaction was modified successfully. The SCEF shall return an updated

 transaction in the response content.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content.

 '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':

 description: >

 The PFDs for all applications were not updated successfully. PfdReport is included with

 detailed information.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 patch:

 summary: Modify an existing PFD Management Transaction resource.

 operationId: ModifyIndPFDManagementTransaction

 tags:

 - Individual PFD Management Transaction

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The PFD Management Transaction was modified successfully. The SCEF shall return an

 updated representation of the resource in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content.

 '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':

 description: >

 The PFDs for all applications were not modified successfully. A set of PFD Report(s) is

 included with detailed information.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: Delete PFDs for a given SCS/AS and a transaction for one or more external Application Identifier(s).

 operationId: DeleteIndPFDManagementTransaction

 tags:

 - Individual PFD Management Transaction

 responses:

 '204':

 description: >

 No Content. The transaction was deleted successfully. The content shall be empty.

 '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'

 /{scsAsId}/transactions/{transactionId}/applications/{appId}:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: transactionId

 in: path

 description: Transaction ID

 required: true

 schema:

 type: string

 - name: appId

 in: path

 description: Identifier of the application

 required: true

 schema:

 type: string

 get:

 summary: Read PFDs at individual application level.

 operationId: FetchIndApplicationPFDManagement

 tags:

 - Individual Application PFD Management

 responses:

 '200':

 description: OK. The application information related to the request URI is returned.

 content:

 application/json:

 schema:

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

 '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:

 summary: Update PFDs at individual application level.

 operationId: UpdateIndApplicationPFDManagement

 tags:

 - Individual Application PFD Management

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 description: Change information in application.

 responses:

 '200':

 description: >

 OK. The application resource was modified successfully. The SCEF shall return an updated

 application resource in the response content.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content.

 '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':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '409':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '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':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 patch:

 summary: Update PFDs at individual application level.

 operationId: ModifyIndApplicationPFDManagement

 tags:

 - Individual Application PFD Management

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 description: Change information in PFD management transaction.

 responses:

 '200':

 description: >

 OK. The transaction was modified successfully. The SCEF shall return an updated

 transaction in the response content.

 content:

 application/json:

 schema:

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

 '204':

 description: No Content

 '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':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '404':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/404'

 '409':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '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':

 description: The PFDs for the application were not updated successfully.

 content:

 application/json:

 schema:

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

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: Delete PFDs at individual application level.

 operationId: DeleteIndApplicationPFDManagement

 tags:

 - Individual Application PFD Management

 responses:

 '204':

 description: >

 No Content. The application was deleted successfully. The content shall be empty.

 '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:

 PfdManagement:

 description: Represents a PFD management resource for a PFD management request.

 type: object

 properties:

 self:

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

 supportedFeatures:

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

 pfdDatas:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Each element uniquely identifies the PFDs for an external application identifier.

 Each element is identified in the map via an external application identifier as key.

 The response shall include successfully provisioned PFD data of application(s).

 pfdReports:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Supplied by the SCEF and contains the external application identifiers for which PFD(s)

 are not added or modified successfully. The failure reason is also included.

 Each element provides the related information for one or more external application

 identifier(s) and is identified in the map via the failure identifier as key.

 readOnly: true

 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 clause 5.2.5.3. Set to false or omitted otherwise.

 websockNotifConfig:

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

 required:

 - pfdDatas

 PfdData:

 description: >

 Represents a PFD request to add, update or remove PFD(s) for one external application

 identifier.

 type: object

 properties:

 externalAppId:

 type: string

 description: Each element uniquely external application identifier

 self:

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

 pfds:

 type: object

 additionalProperties:

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

 description: >

 Contains the PFDs of the external application identifier. Each PFD is identified in

 the map via a key containing the PFD identifier.

 allowedDelay:

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

 cachingTime:

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

 required:

 - externalAppId

 - pfds

 Pfd:

 description: Represents a PFD for an external Application Identifier.

 type: object

 properties:

 pfdId:

 type: string

 description: Identifies a PDF of an application identifier.

 flowDescriptions:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Represents a 3-tuple with protocol, server ip and server port for UL/DL application

 traffic. The content of the string has the same encoding as the IPFilterRule AVP

 value as defined in IETF RFC 6733.

 urls:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Indicates a URL or a regular expression which is used to match the significant parts

 of the URL.

 domainNames:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicates an FQDN or a regular expression as a domain name matching criteria.

 dnProtocol:

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

 required:

 - pfdId

 PfdReport:

 description: >

 Represents a PFD report indicating the external application identifier(s) which PFD(s)

 are not added or modified successfully and the corresponding failure cause(s).

 type: object

 properties:

 externalAppIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies the external application identifier(s) which PFD(s) are not added or

 modified successfully

 failureCode:

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

 cachingTime:

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

 locationArea:

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

 required:

 - externalAppIds

 - failureCode

 UserPlaneLocationArea:

 description: >

 Represents location area(s) of the user plane functions which are unable to enforce the

 provisioned PFD(s) successfully.

 type: object

 properties:

 locationArea:

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

 locationArea5G:

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

 dnais:

 type: array

 items:

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

 minItems: 0

 description: Identifies a list of DNAI which the user plane functions support.

 PfdManagementPatch:

 description: >

 Represents the parameters to request the modification of a PFD management transaction

 resource.

 type: object

 properties:

 pfdDatas:

 type: object

 additionalProperties:

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

 minProperties: 1

 notificationDestination:

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

 FailureCode:

 anyOf:

 - type: string

 enum:

 - MALFUNCTION

 - RESOURCE\_LIMITATION

 - SHORT\_DELAY

 - APP\_ID\_DUPLICATED

 - PARTIAL\_FAILURE

 - OTHER\_REASON

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the failure reason of the PFD management.

 Possible values are:

 - MALFUNCTION: This value indicates that something functions wrongly in PFD provisioning

 or the PFD provisioning does not function at all.

 - RESOURCE\_LIMITATION: This value indicates there is resource limitation for PFD storage.

 - SHORT\_DELAY: This value indicates that the allowed delay is too short and PFD(s)

 are not stored.

 - APP\_ID\_DUPLICATED: The received external application identifier(s) are already

 provisioned.

 - PARTIAL\_FAILURE: The PFD(s) are not provisioned to all PCEFs/TDFs/SMFs.

 - OTHER\_REASON: Other reason unspecified.

 DomainNameProtocol:

 anyOf:

 - type: string

 enum:

 - DNS\_QNAME

 - TLS\_SNI

 - TLS\_SAN

 - TSL\_SCN

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the type of Domain Name Protocol.

 Possible values are:

 - DNS\_QNAME: Identifies the DNS protocol and the question name in DNS query.

 - TLS\_SNI: Identifies the Server Name Indication in TLS ClientHello message.

 - TLS\_SAN: Identifies the Subject Alternative Name in TLS ServerCertificate message.

 - TSL\_SCN: Identifies the Subject Common Name in TLS ServerCertificate message.

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

# A.16 RacsParameterProvisioning API

openapi: 3.0.0

info:

 title: 3gpp-racs-parameter-provisioning

 version: 1.2.0-alpha.1

 description: |

 API for provisioning UE radio capability parameters.

 © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

 All rights reserved.

externalDocs:

 description: 3GPP TS 29.122 V18.1.0 T8 reference point for Northbound APIs

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

security:

 - {}

 - oAuth2ClientCredentials: []

servers:

 - url: '{apiRoot}/3gpp-racs-pp/v1'

 variables:

 apiRoot:

 default: https://example.com

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

paths:

 /{scsAsId}/provisionings:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 get:

 summary: Read all RACS parameter provisionings for a given AF.

 operationId: FetchAllRACSParameterProvisionings

 tags:

 - RACS Parameter Provisionings

 responses:

 '200':

 description: OK. The provisioning information related to the request URI is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 0

 '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 RACS parameter provisioning.

 operationId: CreateRACSParameterProvisioning

 tags:

 - RACS Parameter Provisionings

 requestBody:

 description: create new provisionings for a given SCS/AS.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: Created. The provisioning was created successfully.

 content:

 application/json:

 schema:

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

 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':

 description: The RACS data for all RACS IDs were not provisioned successfully.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 /{scsAsId}/provisionings/{provisioningId}:

 parameters:

 - name: scsAsId

 in: path

 description: Identifier of the SCS/AS as defined in clause 5.2.4 of 3GPP TS 29.122.

 required: true

 schema:

 type: string

 - name: provisioningId

 in: path

 description: Provisioning ID

 required: true

 schema:

 type: string

 get:

 summary: Read an existing RACS parameter provisioning.

 operationId: FetchIndRACSParameterProvisioning

 tags:

 - Individual RACS Parameter Provisioning

 responses:

 '200':

 description: OK. The provisioning information related to the request URI is returned.

 content:

 application/json:

 schema:

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

 '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: Modify some properties in an existing RACS parameter provisioning.

 operationId: ModifyIndRACSParameterProvisioning

 tags:

 - Individual RACS Parameter Provisioning

 requestBody:

 description: update an existing parameter provisioning.

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: OK. The provisioning data was updated successfully. The SCEF shall return an updated provisioning information in the response.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The provisioning data was updated successfully, and no content is to be sent in

 the response message body.

 '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':

 description: The RACS data for all RACS IDs were not provisioned successfully.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 put:

 summary: Modify all properties in an existing RACS parameter provisioning.

 operationId: UpdateIndRACSParameterProvisioning

 tags:

 - Individual RACS Parameter Provisioning

 requestBody:

 description: update an existing parameter provisioning.

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The provisioning data was updated successfully. The SCEF shall return an updated

 provisioning information in the response.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 The provisioning data was updated successfully, and no content is to be sent in

 the response message body.

 '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':

 description: The RACS data for all RACS IDs were not provisioned successfully.

 content:

 application/json:

 schema:

 type: array

 items:

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

 minItems: 1

 application/problem+json:

 schema:

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

 '503':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/503'

 default:

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

 delete:

 summary: Delete a RACS parameter provisioning.

 operationId: DeleteIndRACSParameterProvisioning

 tags:

 - Individual RACS Parameter Provisioning

 responses:

 '204':

 description: >

 No Content. The provisioning was terminated successfully. The content shall

 be empty.

 '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:

 RacsProvisioningData:

 description: Represents a UE's radio capability data.

 type: object

 properties:

 self:

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

 supportedFeatures:

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

 racsConfigs:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies the configuration related to manufacturer specific UE radio capability.

 Each element uniquely identifies an RACS configuration for an RACS ID and is identified

 in the map via the RACS ID as key. The response shall include successfully provisioned

 RACS data.

 racsReports:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Supplied by the SCEF. Contains the RACS IDs for which the RACS data are not provisioned

 successfully. Any string value can be used as a key of the map.

 readOnly: true

 required:

 - racsConfigs

 RacsFailureReport:

 description: Represents a radio capability data provisioning failure report.

 type: object

 properties:

 racsIds:

 type: array

 items:

 type: string

 minItems: 1

 description: >

 Identifies the RACS ID(s) for which the RACS data are not provisioned successfully.

 failureCode:

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

 required:

 - racsIds

 - failureCode

 RacsConfiguration:

 description: Represents a single UE radio capability configuration data.

 type: object

 properties:

 racsId:

 type: string

 description: >

 The UE radio capability ID provided by the SCS/AS to identify the UE radio capability

 data. See 3GPP TS 23.003 for the encoding.

 racsParamEps:

 type: string

 description: The UE radio capability data in EPS.

 racsParam5Gs:

 type: string

 description: The UE radio capability data in 5GS.

 imeiTacs:

 type: array

 items:

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

 minItems: 1

 description: Related UE model's IMEI-TAC values.

 anyOf:

 - required: [racsParamEps]

 - required: [racsParam5Gs]

 required:

 - racsId

 - imeiTacs

 RacsProvisioningDataPatch:

 description: >

 Represents parameters to request the modification of a UE's radio capability data.

 type: object

 properties:

 racsConfigs:

 type: object

 additionalProperties:

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

 minProperties: 1

 description: >

 Identifies the configuration related to manufactuer specific UE radio capability.

 Each element uniquely identifies an RACS configuration for an RACS ID and is identified

 in the map via the RACS ID as key.

 RacsConfigurationRm:

 description: >

 Represents the same as the RacsConfiguration data type but with the nullable:true property.

 type: object

 properties:

 racsParamEps:

 type: string

 description: The UE radio capability data in EPS.

 nullable: true

 racsParam5Gs:

 type: string

 description: The UE radio capability data in 5GS.

 nullable: true

 imeiTacs:

 type: array

 items:

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

 minItems: 1

 description: Related UE model's IMEI-TAC values.

 nullable: true

 RacsFailureCode:

 anyOf:

 - type: string

 enum:

 - MALFUNCTION

 - RESOURCE\_LIMITATION

 - RACS\_ID\_DUPLICATED

 - OTHER\_REASON

 - type: string

 description: >

 This string provides forward-compatibility with future

 extensions to the enumeration but is not used to encode

 content defined in the present version of this API.

 description: |

 Represents the failure result of UE radio capability provisioning.

 Possible values are:

 - MALFUNCTION: This value indicates that something functions wrongly in RACS provisioning or

 the RACS provisioning does not function at all.

 - RESOURCE\_LIMITATION: This value indicates there is resource limitation for RACS data

 storage.

 - RACS\_ID\_DUPLICATED: The received RACS identifier(s) are already provisioned.

 - OTHER\_REASON: Other reason unspecified.

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