**3GPP TSG-CT WG3 Meeting #122-eC3-223155**

**E-Meeting, 12th – 20th May 2022**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Pseudo-CR on the error cases update to Npcf\_MBSPolicyControl UpdateNotify Service**

**Spec: 3GPP TS 29.537 V0.2.0**

**Agenda item: 17.31 (5MBS)**

**Document for: Approval**

**1. Introduction**

TS 29.537 has been allocated under the 5MBS work item to define the MBS Policy Control services.

**2. Reason for Change**

Error cases for Npcf\_MBSPolicyControl\_UpdateNotify service operation needs to be specified. Error cases as specified in Ts 29.512 are referred and the common error cases applicable to MBS sessions are specified.

**3. Conclusions**

N/A.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 29.537 V0.2.0.

\* \* \* First Change \* \* \* \*

##### 5.2.2.3.2 PCF initiated MBS Session Policy Association Update



Figure 5.2.2.3.2-1: MBS Session Policy Association update

1. The PCF may decide to provision policies related to an Individual MBS Policy resource in response to e.g. an internal trigger within the PCF. The PCF shall send for this purpose an HTTP POST request to the NF service consumer (e.g. MB-SMF) using the URI"{notificationUri}/update" with the "notificationUri" set to the notification URI received during MBS Session Policy Association establishment procedure as defined in clause 5.2.2.2. The request message body shall contain a MbsPolicyNotif data structure that shall contain:

- the representation of the updated policies within the "mbsPolicyDecision" attribute; and

- the identifier of the Individual MBS Policy resource related to the notification, within the "mbsPolicyId" attribute.

2. In case of a successful update of MBS policies, a "204 No Content" response code shall be returned in the response.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 6.1.7

Editor's Note: The complete list of Error cases and the related status codes are FFS.

If the NF service consumer received one or more MBS PCC rules from the PCF, and the validation of all these MBS PCC Rules was unsuccessful, the NF service consumer shall reject with an HTTP "400 Bad Request" status code with the response body including the MbsErrorReport data structure. Within the MbsErrorReport data structure, the NF service consumer shall include the "error" attribute containing the "cause" attribute of the ProblemDetails data structure set to "MBS\_PCC\_RULE\_PERMANENT\_FAIL" or "MBS\_PCC\_RULE\_TEMP\_FAIL" and the "mbsRuleReports" attribute to report the PCC rule status of the affected MBS PCC rules.

Otherwise, if the validation of only some of the received PCC rules was unsuccessful, the MB-SMF shall reply to the PCF with an HTTP "200 OK" status code and may include in the corresponding response message one or more PartialMbsSuccessReport data structure(s) to report the failure for the affected MBS PCC rule(s).

Within each MbsRuleReport instance, the MB-SMF shall identify the failed MBS PCC rule(s) by including their identifiers within the "pccRuleIds" attribute, identify the failure reason code by including a "failureCode" attribute, and include the PCC rule(s) status within the "ruleStatus" attribute containing a value as follows:

- If the installation of one or more new MBS PCC rules (i.e. rules which were not previously successfully installed) fails, the MB-SMF shall set the "ruleStatus" attribute value to "INACTIVE".

- If the modification of a currently active MBS PCC rule fails, the MB-SMF shall retain the existing MBS PCC rule as active without any modification, unless the reason for the failure has an impact also on the existing MBS PCC rule.

Editor's Note: The handling of predefined rules is FFS.

Editor's Note: The complete list of attributes within PartialMbsSuccessReport and MbsErrorReport is FFS.

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

6.1.5.2.3.1 POST

This method shall support the request data structures specified in table 6.1.5.2.3.1-1 and the response data structures and response codes specified in table 6.1.5.2.3.1-2.

Table 6.1.5.2.3.1-1: Data structures supported by the POST Request Body

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | P | Cardinality | Description |
| MbsPolicyNotif | M | 1 | Provision/Update of MBS policies by the PCF. |

Table 6.1.5.2.3.1-2: Data structures supported by the POST Response Body

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data type | P | Cardinality | Response codes | Description |
| n/a |  |  | 204 No Content | The MBS policies are provisioned/updated successfully. |
| array(PartialMbsSuccessReport) | O | 1..N | 200 OK | Some of the PCC rules provisioned by the PCF are not installed successfully. |
| MbsErrorReport | M | 1 | 400 Bad Request | The MBS policies including all the PCC rules provisioned by the PCF are not installed successfully. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF service consumer (service) instance where the notification should be sent. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF service consumer (service) instance where the notification should be sent. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in Table 5.2.7.1-1 of TS 29.500 [4] also apply. |

Editor's Note: The handling of predefined rules is FFS.

Table 6.1.5.2.3.1-3: Headers supported by the 307 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | String | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected |

Table 6.1.5.2.3.1-4: Headers supported by the 308 Response Code on this resource

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Data type | P | Cardinality | Description |
| Location | String | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | String | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected |

Editor's Note: There may be updates (e.g. additional scope) depending on the progress of the related stage 2 work.

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

### 6.1.6 Data Model

#### 6.1.6.1 General

This clause specifies the application data model supported by the API.

Table 6.1.6.1-1 specifies the data types defined for the Npcf\_MBSPolicyControl service based interface protocol.

Table 6.1.6.1-1: Npcf\_MBSPolicyControl specific Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Clause defined | Description | Applicability |
| MbsPolicyCtxtData | 6.1.6.2.2 | Contains the parameters used to request the creation of an Individual MBS Policy resource. |  |
| MbsPolicyData | 6.1.6.2.4 | Contains the MBS policy data of an Individual MBS Policy resource. |  |
| MbsPolicyDecision | 6.1.6.2.3 | Contains the MBS policies authorized by the PCF. |  |
| MbsPolicyNotif | 6.1.6.2.5 | Represents an MBS policy update notification. |  |
| MbsTermNotif | 6.1.6.2.6 | Represents an MBS policy termination notification. |  |
| PartialMbsSuccessReport | 6.1.6.2.X | Includes the information reported by the NF service consumer when some of the PCC rules are not successfully installed. |  |
| MbsErrorReport | 6.1.6.2.Y | Contains the rule reports. |  |

Table 6.1.6.1-2 specifies data types re-used by the Npcf\_MBSPolicyControl service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Npcf\_MBSPolicyControl service based interface.

Table 6.1.6.1-2: Npcf\_MBSPolicyControl re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| Dnn | TS 29.571 [15] | Identifies a DNN. |  |
| MbsSessionId | TS 29.571 [15] | Represents an MBS Session Identifier. |  |
| RedirectResponse | TS 29.571 [15] | Contains redirection related information. |  |
| Snssai | TS 29.571 [15] | Identifies an S-NSSAI. |  |
| SupportedFeatures | TS 29.571 [15] | Represents the list of supported features. It is used to negotiate the applicability of the optional features. |  |
| Uri | TS 29.571 [15] | Represents a URI. |  |

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

##### 6.1.6.2.X Type: PartialMbsSuccessReport

Table 6.1.6.2.X-1: Definition of type PartialMbsSuccessReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| failureCause | FailureCause | M | 1 | Application error cause specific to this report. |  |
| mbsRuleReports | array(MbsRuleReport) | C | 1..N | Information about the MBS PCC rules provisioned by the PCF not successfully installed. |  |

Editor's Note: The complete list of attributes is FFS.

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

##### 6.1.6.2.Y Type: MbsErrorReport

Table 6.1.6.2.Y-1: Definition of type MbsErrorReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| error | ProblemDetails | M | 1 | More information on the error shall be provided in the "cause" attribute of the "ProblemDetails" structure. |  |
| mbsRuleReports | array(MbsRuleReport) | O | 1..N | Used to report the MBS PCC rule failure. |  |

Editor's Note: The complete list of attributes is FFS.

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

##### 6.1.6.2.Z Type: MbsRuleReport

Table 6.1.6.2.Z-1: Definition of type MbsRuleReport

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| pccRuleIds | array(string) | M | 1..N | Contains the identifier(s) of the affected PCC rule(s). |  |
| ruleStatus | RuleStatus | M | 1 | Indicates the status of the PCC rule(s). |  |
| failureCode | FailureCode | C | 0..1 | Indicates the reason why the PCC Rule(s) are being reported. It shall be included when the NF service consumer reports the failure of the enforcement of the PCC rule(s). |  |

Editor's Note: The complete list of attributes is FFS.

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

##### 6.2.6.3.4 Enumeration: FailureCode

 The enumeration FailureCode represents the reason for the PCC rule enforcement failure. It shall comply with the provisions defined in table 6.2.6.3.4-1.

Table 6.2.6.3.3-1: Enumeration FailureCode

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| NF\_MALFUNCTION | Indicates that the MBS PCC rule could not be successfully installed or enforced (for those already successfully installed) due to MB-SMF/MB-UPF malfunction. |  |
| NF\_RESOURCE\_UNAVAILABLE | Indicates that the MBS PCC rule could not be successfully installed or enforced (for those already successfully installed) due to resources unavailable at MB-SMF/MB-UPF. |  |
| QOS\_VALIDATION\_FAIL | This value is used to:- indicate that QoS validation has failed;  |  |

Editor's Note: The complete list of attributes is FFS.

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

##### 6.2.6.3.x Enumeration: RuleStatus

The enumeration RuleStatus represents the MBS PCC rule status. It shall comply with the provisions defined in table 6.2.6.3.x-1.

Table 6.2.6.3.x-1: Enumeration RuleStatus

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| ACTIVE | Indicates that the MBS PCC rule(s) are successfully installed. |  |
| INACTIVE | Indicates that the MBS PCC rule(s) are removed. |  |

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

##### 6.2.6.3.X Enumeration: FailureCause

 The enumeration FailureCause represents the application error. It shall comply with the provisions defined in table 6.2.6.3.X-1.

Table 6.2.6.3.X-1: Enumeration FailureCause

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| MBS\_PCC\_RULE\_PERMANENT\_FAIL | Some of the MBS PCC rules provisioned by the PCF in the request cannot be installed. It is used to inform the PCF that the request failed and should not be attempted again. |  |
| MBS\_PCC\_RULE\_TEMP\_FAIL | For some reason some of the MBS PCC rules provisioned by the PCF in the request cannot be enforced or modified successfully in a network initiated procedure. It is used to inform the PCF that the request could not be satisfied at the time it was received, but may be able to satisfy the request in the future. |  |

Editor's Note: The complete list of failure cause is FFS.

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

#### 6.1.7.3 Application Errors

The application errors defined for the Npcf\_MBSPolicyControl service are listed in Table 6.1.7.3-1.

Table 6.1.7.3-1: Application errors

|  |  |  |
| --- | --- | --- |
| Application Error | HTTP status code | Description |
| MBS\_PCC\_RULE\_PERMANENT\_FAIL | 400 Bad Request | The HTTP request is rejected because all the PCC rules provisioned by the PCF in the request cannot be installed. It is used to inform the PCF that the request failed and should not be attempted again. |
| MBS\_PCC\_RULE\_TEMP\_FAIL | 400 Bad Request | The HTTP request is rejected because for some reason all the PCC rules provisioned by the PCF in the request cannot be enforced or modified successfully in a network initiated procedure. It is used to inform the PCF that the request could not be satisfied at the time it was received but may be able to satisfy the request in the future. |

Editor's Note: The complete list of application errors is FFS.

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

# A.2 Npcf\_MBSPolicyControl API

openapi: 3.0.0

info:

 title: Npcf\_MBSPolicyControl API

 version: 1.0.0-alpha.2

 description: |

 MBS Session Policy Control Service

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externalDocs:

 description: >

 TS 29.537 V0.2.0; 5G System; Multicast/Broadcast Policy Control Services.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.537/'

security:

 - {}

 - oAuth2ClientCredentials:

 - npcf-mbspolicycontrol

servers:

 - url: '{apiRoot}/npcf-mbspolicycontrol/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501.

paths:

 /mbs-policies:

 post:

 summary: Request the creation of a new Individual MBS Policy resource.

 operationId: CreateMBSPolicy

 tags:

 - MBS Policies (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. An Individual MBS Policy resource is successfully created and

 a representation of the created resource is returned.

 content:

 application/json:

 schema:

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

 headers:

 Location:

 description: >

 Contains the URI of the newly created Individual MBS Policy resource.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 callbacks:

 MbsPolicyUpdateNotification:

 '{$request.body#/notificationUri}/update':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The MBS Policy Update Notification was successfully received.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 MbsPolicyTerminationNotification:

 '{$request.body#/notificationUri}/terminate':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The notification was successfully received.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /mbs-policies/{mbsPolicyId}:

 get:

 summary: Read an Individual MBS Policy.

 operationId: GetMBSPolicy

 tags:

 - Individual MBS Policy (Document)

 parameters:

 - name: mbsPolicyId

 in: path

 description: >

 Contains the identifier of the concerned Individual MBS Session Policy Association.

 required: true

 schema:

 type: string

 responses:

 '200':

 description: >

 OK. The requested Individual MBS Policy resource is successfully returned.

 content:

 application/json:

 schema:

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

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 delete:

 summary: Deletes an existing Individual MBS Policy resource.

 operationId: DeleteMBSPolicy

 tags:

 - Individual MBS Policy

 parameters:

 - name: mbsPolicyId

 in: path

 description: >

 Contains the identifier of the concerned Individual MBS Session Policy.

 required: true

 schema:

 type: string

 responses:

 '204':

 description: >

 No Content. The concerned Individual MBS Policy resource was successfully deleted.

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 npcf-mbspolicycontrol: Access to the Npcf\_MBSPolicyControl API

 schemas:

 MbsPolicyCtxtData:

 description: >

 Contains the parameters used to request the creation of an Individual MBS

 Policy resource.

 type: object

 properties:

 mbsSessionId:

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

 dnn:

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

 snssai:

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

 notificationUri:

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

 suppFeat:

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

 required:

 - mbsSessionId

 - dnn

 - snssai

 - notificationUri

 MbsPolicyData:

 description: Contains the MBS policy data of an Individual MBS Policy resource.

 type: object

 properties:

 mbsPolicyCtxtData:

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

 suppFeat:

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

 required:

 - mbsPolicyCtxtData

 MbsPolicyNotif:

 description: Represents an MBS Policy Update Notification.

 type: object

 properties:

 mbsSessionId:

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

 required:

 - mbsSessionId

 MbsTermNotif:

 description: Represents an MBS Policy Termination Notification.

 type: object

 properties:

 mbsSessionId:

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

 cause:

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

 required:

 - mbsSessionId

 - cause

 PartialMbsSuccessReport:

 description:>

 Includes the information reported by the MB-SMF when some of the MBS PCC rules are not

 successfully installed.

 type: object

 properties:

 failureCause:

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

 mbsRuleReports:

 type: array

 items:

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

 minItems: 1

 description:>

 Information about the MBS PCC rules provisioned by the PCF not successfully

 Installed.

 MbsErrorReport:

 description: Contains the MBS rule error reports.

 type: object

 properties:

 error:

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

 mbsRuleReports:

 type: array

 items:

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

 minItems: 1

 description: Used to report the MBS PCC rule failure.

 MbsRuleReport:

 description: Reports the status of MBS PCC.

 type: object

 properties:

 pccRuleIds:

 type: array

 items:

 type: string

 minItems: 1

 description: Contains the identifier of the affected MBS PCC rule(s).

 ruleStatus:

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

 failureCode:

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

# ENUMS:

 MbsPolicyAssociationReleaseCause:

 description: >

 Represents the cause due to which the PCF requests the termination of the MBS policy

 association.

 anyOf:

 - type: string

 enum:

 - UNSPECIFIED

 RuleStatus:

 anyOf:

 - type: string

 enum:

 - ACTIVE

 - INACTIVE

 - type: string

 FailureCode:

 anyOf:

 - type: string

 enum:

 - NF\_MALFUNCTION

 - NF\_RESOURCE\_UNAVAILABLE

 - QOS\_VALIDATION\_FAIL

 FailureCause:

 description: Indicates the cause of the failure in a Partial MBS Success Report.

 anyOf:

 - type: string

 enum:

 - MBS\_PCC\_RULE\_PERMANENT\_FAIL

 - MBS\_PCC\_RULE\_TEMP\_FAIL

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