**3GPP TSG-CT WG3 Meeting #142 *C3-253501***

**, Sweden,**

|  |
| --- |
| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *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:***  | IMS Event Exposure Notifications updates |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** | NG\_RTC\_Ph2 |  | ***Date:*** | 2025-08-27 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** | Rel-19 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | In previous versions of TS 29.522 CR C3-252509 was approved including some updates about how NEF may handle errors received from IMS-AS for non-subscriber specific and from HSS for subscriber specific IMS event subscriptions by including an IMS Failure Cause. However, it was not clear what it is notified to the AF, since it might not know what to do with this IMS Failure Cause and which is the affected Identity in case of subscriber-specific IMS event(s) subscription ).In that sense, the protocol was not properly updated to reflect the following changes:* Include HSS related errors
* Include the affected target UE Identity
* Association between affected target UE Identify and IMS Failure Cause
 |
|  |  |
| ***Summary of change:*** |  Update current IMS Event Exposure Subscription Creation and Update procedures to make use of this new notification to inform about possible subscription errors.Update IMS Event Exposure Notification content to include the association between the affected target UE Identity and the IMS Failure Cause |
|  |  |
| ***Consequences if not approved:*** | AF will not be informed about the subscription was cancelled consuming resources waiting to be notified about events which will never occur for a particular UE subscription |
|  |  |
| ***Clauses affected:*** | 4.4.47.2, 4.4.47.3, 4.4.47.5, 5.43.5.1, 5.43.5.2.3, 5.43.5.2.8 and A.41. |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 23.228 CRXXX, TS 23.502 CRXXX |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces backward compatible feature to the following APIs:TS29522\_ImsEventExposure.yaml |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 4.4.47.2 Procedure for IMS Event Exposure Subscription Creation

In order to create a new IMS Event Exposure Subscription, the AF shall send an HTTP POST request message to the NEF targeting the URI of the "IMS EE Subscriptions" Collection resource, with the request message body including the ImsEESubsc data structure defined in clause 5.43.5.2.2.

Upon reception of the HTTP POST request, the NEF shall:

- check whether the AF is authorized to perform this operation or not;

- if the AF is authorized and upon successful processing of the request, the NEF shall respond to the AF with an HTTP "201 Created" status code, with the response body including a representation of the created "Individual IMS EE Subscription" resource within the ImsEESubsc data structure, and an HTTP "Location" header containing the URI of the created resource.

- then, the NEF shall:

- for subscriber-specific IMS event(s), discover the HSS serving the given subscriber. The NEF may determine the serving HSS based on configuration or based on HSS discovery as depicted in clause AA.3.3 of 3GPP TS 23.228 [79]. Then the NEF shall interact with the HSS via the Nhss\_ImsEventExposure service as described in 3GPP TS 29.562 [80] separately for each of the targeted subscribers; or

- for non-subscriber specific IMS event(s), discover the IMS AS instance(s) which support monitoring of the related IMS event(s) based on configuration or via the Nnrf\_NFDiscovery service API as defined in 3GPP TS 29.510 [57]. Then the NEF shall interact with all the IMS AS instance(s) which support monitoring of the related IMS event(s) via the Nimsas\_ImsEventExposure service as described in 3GPP TS 29.175 [78];

and

- on failure, the NEF shall take proper error handling actions, as specified in clause 5.43.7, and respond to the AF with an appropriate error status code. If the NEF received within an error response a "ProblemDetails" data structure with a "cause" attribute indicating an application error, the NEF shall relay this error response to the AF with a corresponding application error, when applicable.

If the NEF receives an error response from all the IMS AS (for non-subscriber specific IMS event(s) subscription) and the NEF has already accepted the IMS event(s) subscription:

* the NEF may send an HTTP POST request message to the AF including the ImsEENotif data structure with the received failure result within "imsFailureCause" attribute as specified in clause 5.43.5.2.3 and targeting the notification URI provided by the AF during the corresponding IMS Event(s) subscription.

If the NEF receives an error response from the HSS (for subscriber-specific IMS event(s) subscription) and the NEF has already accepted the IMS event(s) subscription:

* the NEF may send an HTTP POST request message to the AF including the ImsEENotif data structure with the received failure result(s) for the targeted UE(s)affected by the error as specified in clause 5.43.5.2.3.

Upon reception of the notification request, the AF may acknowledge its successful reception by sending a HTTP POST response message with an HTTP "204 No Content" status code.

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

#### 4.4.47.3 Procedure for IMS Event Exposure Subscription Update

In order to update an existing IMS Event Exposure Subscription, the AF shall send an HTTP PUT/PATCH request message to the NEF targeting the URI of the corresponding "Individual IMS EE Subscription" resource, with the request message body including either:

- the ImsEESubsc data structure, in case the HTTP PUT method is used; or

- the ImsEESubscPatch data structure, in case the HTTP PATCH method is used.

Upon reception of the HTTP PUT/PATCH request, the NEF shall:

- check whether the AF is authorized to perform this operation or not;

- if the AF is authorized and upon successful processing of the request, the NEF shall respond to the AF with either:

- an HTTP "200 OK" status code with the response body containing a representation of the updated "Individual IMS EE Subscription" resource within the ImsEESubsc data structure; or

- an HTTP "204 No Content" status code.

- then, interact with the corresponding HSS separately for each of the impacted subscribers or IMS AF via the relevant services offered by the HSS or IMS AS respectively; and

- on failure, take proper error handling actions, as specified in clause 5.43.7, and respond to the AF with an appropriate error status code. If the NEF received within an error response a "ProblemDetails" data structure with a "cause" attribute indicating an application error, the NEF shall relay this error response to the AF with a corresponding application error, when applicable.

If the NEF receives an error response from all the IMS AS (for non-subscriber specific IMS event(s) subscription) and the NEF has already accepted the IMS event(s) subscription:

* the NEF may send an HTTP POST request message to the AF including the ImsEENotif data structure with a cancel indication, the IMS AS failure result within the "imsFailureCause" attribute as specified in clause 5.43.5.2.3 and targeting the notification URI provided by the AF during the corresponding IMS Event(s) subscription.

If the NEF receives an error response from the HSS (for subscriber-specific IMS event(s) subscription and the NEF has already accepted the IMS event(s) subscription:

* the NEF may send an HTTP POST request message to the AF including the ImsEENotif data structure with the the received failure result(s) for the targeted UE(s) affected by the error as specified in clause 5.43.5.2.3.

Upon reception of the notification request, the AF may acknowledge its successful reception by sending a HTTP POST response message with an HTTP "204 No Content" status code.

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

#### 5.43.5.1 General

This clause specifies the application data model supported by the ImsEventExposure API. Table 5.43.5.1-1 specifies the data types defined for the ImsEventExposure API.

Table 5.43.5.1-1: ImsEventExposuree API specific Data Types

|  |  |  |
| --- | --- | --- |
| Data type | Clause defined | Description |
| ImsEENotif | 5.43.5.2.3 | Represents the IMS Event Exposure Notification. |
| ImsEventReport | 5.43.5.2.6 | Represents the IMS Event Report. |
| ImsEventRequirement | 5.43.5.2.5 | Represnets the IMS Event related requirements. |
| ImsEventType | 5.43.5.3.3 | Represents the IMS Event Type. |
| ImsEESubsc | 5.43.5.2.2 | Represents the IMS Event Exposure Subscription. |
| ImsEESubscPatch | 5.43.5.2.4 | Represents the requested modifications to an IMS EE Subscription. |
| ImsEECeasedSubscription | 5.43.5.2.X | Represents the IMS Event Exposure Ceased Subscription. |

Table 5.43.5.1-2 specifies data types re-used by the ImsEventExposure API from other specifications, including a reference to their respective specifications, and when needed, a short description of their use within the ImsEventExposure API.

Table 5.43.5.1-2: ImsEventExposure API re-used Data Types

|  |  |  |  |
| --- | --- | --- | --- |
| Data type | Reference | Comments | Applicability |
| DateTime | 3GPP TS 29.122 [4] | Represents a date and a time. |  |
| ImsEvent | 3GPP TS 29.571 [8] | Represents the IMS Event. |  |
| ImsEventConfiguration | 3GPP TS 29.571 [8] | Represents the IMS event configuration requirements. |  |
| ImsEventReportInfo | 3GPP TS 29.571 [8] | Represents the IMS event report information. |  |
| ImsReportingOptions | 3GPP TS 29.571 [8] | Represents the IMS reporting requirement options. |  |
| PublicIdentity | 3GPP TS 29.562 [80] | Represents the Public Identity of an IMS subscriber. |  |
| SessionId | 3GPP TS 29.571 [8] | The IMS session ID. |  |

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

##### 5.43.5.2.3 Type: ImsEENotif

Table 5.43.5.2.3-1: Definition of type ImsEENotif

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| subscriptionId | string | M | 1 | Contains the identifier of the subscription to which the notification is related. |  |
| sessionId | SessionId | O | 0..1 | Identifies the session ID. |  |
| reports | array(ImsEventReport) | O | 1..N | Contains the IMS event report(s).(NOTE) |  |
|  |  |  |  |  |  |
| ceasedSubscriptions | array(ImsEECeasedSubscription) | O | 1..N | It contains the identifier of the UE affected by the cancelation of the subscription together with the failure cause provided by IMS AS or HSS.(NOTE) |  |
| NOTE: These attributes are mutually exclusive and only one of them shall be present. |

\*\*\* 6th Change \*\*\*

##### 5.43.5.2.8 Type: ImsEECeasedSubscription

Table 5.43.5.2.9-1: Definition of type ImsEECeasedSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| tgtUeId | PublicIdentity | C | 0..1 | Contains the identifier of the UE affected by the revocation of the IMS EE subscription.(NOTE) |  |
| anyUeInd | boolean | C | 0..1 | Indicates whether the subscription is for any UE.- "true" indicates that the subscription is for any UE.When present, this attribute shall be set to "true". The presence of this attribute set to the value "false" is forbidden.(NOTE) |  |
| failureCause | string | O | 0..1 | Contains the failure cause provided by the IMS AS or HSS. |  |
| NOTE: These attributes are mutually exclusive and only one of them shall be present. |

\*\*\* 7th Change \*\*\*

A.41 ImsEventExposure API

openapi: 3.0.0

info:

 title: 3gpp-ims-ee

 version: 1.0.0-alpha.3

 description: |

 API for IMS Event Exposure Services.

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externalDocs:

 description: >

 3GPP TS 29.522 V19.3.0; 5G System; Network Exposure Function Northbound APIs.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.522/'

servers:

 - url: '{apiRoot}/3gpp-ims-ee/v1'

 variables:

 apiRoot:

 default: https://example.com

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

security:

 - {}

 - oAuth2ClientCredentials: []

paths:

 /{afId}/subscriptions:

 parameters:

 - name: afId

 in: path

 description: Represents the identifier of the AF.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve all the active IMS EE Subscriptions managed by the NEF.

 operationId: GetImsEESubsc

 tags:

 - IMS EE Subscriptions (Collection)

 responses:

 '200':

 description: >

 OK. All the Individual IMS EE Subscription resource(s) managed by the NEF

 are returned.

 If there are no active Individual IMS EE Subscription resources at the NEF,

 an empty array is returned.

 content:

 application/json:

 schema:

 type: array

 items:

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

 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: Request the creation of a new IMS EE Subscription.

 operationId: CreateImsEESubsc

 tags:

 - IMS EE Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '201':

 description: >

 Created. A representation of the created IMS EE Subscription resource is

 returned in the response body.

 content:

 application/json:

 schema:

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

 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'

 callbacks:

 IMSEENotif:

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

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '204':

 description: >

 No Content. The IMS EE Notification is successfully received and acknowledged.

 '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'

 /{afId}/subscriptions/{subscriptionId}:

 parameters:

 - name: afId

 in: path

 description: Represents the identifier of the AF.

 required: true

 schema:

 type: string

 - name: subscriptionId

 in: path

 description: >

 Represents the identifier of the Individual IMS EE Subscription.

 resource.

 required: true

 schema:

 type: string

 get:

 summary: Retrieve an existing Individual IMS EE Subscription resource.

 operationId: GetIndImsEESubsc

 tags:

 - Individual IMS EE Subscription (Document)

 responses:

 '200':

 description: >

 OK. The requested Individual IMS EE Subscription resource is successfully

 returned in the response body.

 content:

 application/json:

 schema:

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

 '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: Request the update of an existing Individual IMS EE Subscription resource.

 operationId: UpdateIndImsEESubsc

 tags:

 - Individual IMS EE Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual IMS EE Subscription resource is successfully updated and

 a representation of the updated resource is returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual IMS EE Subscription resource is successfully updated and

 no content is returned in the response 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: Request the modification of an existing Individual IMS EE Subscription resource.

 operationId: ModifyIndImsEESubsc

 tags:

 - Individual IMS EE Subscription (Document)

 requestBody:

 required: true

 content:

 application/merge-patch+json:

 schema:

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

 responses:

 '200':

 description: >

 OK. The Individual IMS EE Subscription resource is successfully modified and

 a representation of the updated resource is returned in the response body.

 content:

 application/json:

 schema:

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

 '204':

 description: >

 No Content. The Individual IMS EE Subscription resource is successfully modified and

 no content is returned in the response 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: Request the deletion of an existing Individual IMS EE Subscription resource.

 operationId: DeleteIndImsEESubsc

 tags:

 - Individual IMS EE Subscription (Document)

 responses:

 '204':

 description: >

 No Content. The Individual IMS EE Subscription resource is successfully deleted.

 '307':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/403'

 '404':

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

 '429':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29122\_CommonData.yaml#/components/responses/500'

 '503':

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

 default:

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

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{tokenUrl}'

 scopes: {}

 schemas:

#

# STRUCTURED DATA TYPES

#

 ImsEESubsc:

 description: Represents an IMS Event Exposure Subscription.

 type: object

 properties:

 eventReqs:

 type: array

 items:

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

 minItems: 1

 imsReptReq:

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

 immReports:

 type: array

 items:

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

 minItems: 1

 tgtUeIds:

 type: array

 items:

 $ref: 'TS29562\_Nhss\_imsSDM.yaml#/components/schemas/PublicIdentity'

 minItems: 1

 anyUeInd:

 type: boolean

 enum:

 - true

 description: >

 Identifies whether the subscription is for any UE.

 true indicates that the subscription is for any UE.

 When present, this attribute shall be set to true. The presence of this attribute set to

 the value false is forbidden.

 notifUri:

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

 required:

 - eventReqs

 - imsReptReq

 - notifUri

 oneOf:

 - required: [tgtUeIds]

 - required: [anyUeInd]

 ImsEESubscPatch:

 description: Represents the requested modifications to an IMS Event Exposure Subscription.

 type: object

 properties:

 eventReqs:

 type: array

 items:

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

 minItems: 1

 notifUri:

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

 ImsEENotif:

 description: Represents an IMS Event Exposure Notification.

 type: object

 properties:

 subscriptionId:

 type: string

 sessionId:

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

 reports:

 type: array

 items:

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

 minItems: 1

 ceasedSubscriptions:

 type: array

 items:

 type: '#/components/schemas/ImsEECeasedSubscription

 description: It contains the identifiers of the UEs affected by the cancelation of the subscription together with the failure cause provided by IMS AS or HSS.

 required:

 - subscriptionId

 ImsEventRequirement:

 description: Represnets the IMS Event Requirements.

 type: object

 properties:

 imsEventType:

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

 imsEventConfig:

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

 required:

 - imsEventType

 - imsEventConfig

 ImsEventReport:

 description: Represents an IMS Event Report.

 type: object

 properties:

 imsEvent:

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

 timeStamp:

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

 eventRptInfo:

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

 required:

 - imsEvent

 - timeStamp

 ImsEECeasedSubscription:

 description: Represents the cancelled EE subscriptions events.

 type: object

 properties:

 tgtUeId:

 $ref: 'TS29562\_Nhss\_imsSDM.yaml#/components/schemas/PublicIdentity'

 anyUeInd:

 type: boolean

 enum:

 - true

 description: >

 Identifies whether the subscription is for any UE.

 imsFailureCause:

 type: string

 description: Contains the failure cause provided by the IMS AS or HSS.

 oneOf:

 - required: [tgtUeId]

 - required: [anyUeInd]

#

# SIMPLE DATA TYPES

#

#

# ENUMERATIONS DATA TYPES

#

 ImsEventType:

 anyOf:

 - type: string

 enum:

 - SUBSCRIBER\_SPECIFIC

 - NON\_SUBSCRIBER\_SPECIFIC

 - 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 IMS Event Type.

 Possible values are:

 - SUBSCRIBER\_SPECIFIC: Indicates that the IMS Event type is Subscriber Specific for data

 channel.

 - NON\_SUBSCRIBER\_SPECIFIC: Indicates that the IMS Event type is Subscriber Specific for

 Data channel.

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