**3GPP TSG-CT WG3 Meeting #113eC3-210183\_r1**

**E-Meeting, 25th – 29th January 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.514** | **CR** | **0278** | **rev** | **1** | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Correction to resource identifiers descriptions used in notifications | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | C3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_eSBA | | | | |  | ***Date:*** | | | 2021-01-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | TS 29.500, 6.5.3.3 specifies that in case the NF (service) instance changes, only the apiRoot of the resource URI actually changes.  The description of the "evSubsUri" and "resUri" attributes need to be updated to indicate that there can be deployments where either the complete resource URI or only the apiSpecificResourceUriPart of the resource URI is used to identify an individual resource. In both cases, only the "apiSpecificResourceUriPart" of the resource URI included in the corresponding attribute remains unchanged during the lifetime of the individual resource at PCF (service) instance changes | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Update of the clauses 4.2.5.2, 4.2.5.3, 5.6.2.9 and 5.6.2.12 to indicate that that either the complete resource URI or the apiSpecificResourceUriPart of the resource URI can be used to identify the individual SM policy resource associated to a notification. Add that "apiSpecificResourceUriPart" of the resource URI included "resourceUri" attribute remains unchanged during the lifetime of the Individual SM Policy resource at PCF (service) instance changes. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incorrect specification that leads to misinterpretations and implementation mistakes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.5.2, 4.2.5.3, 5.6.2.9, 5.6.2.12 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR does not impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**…**

**Proposed changes:**

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

#### 4.2.5.2 Notification about application session context event

This procedure is invoked by the PCF to notify the AF when a certain, previously subscribed, application session context event occurs, as defined in 3GPP TS 23.501 [2], 3GPP TS 23.502 [3] and 3GPP TS 23.503 [4].

Figure 4.2.5.2-1 illustrates the notification about application session context event.



Figure 4.2.5.2-1: Notification about application session context event

When the PCF determines that the event for the existing AF application session context, to which the AF has subscribed to, occurred e.g. upon reception of an event notification for a PDU session from the SMF as described in 3GPP TS 29.512 [8], the PCF shall invoke the Npcf\_PolicyAuthorization\_Notify service operation by sending the HTTP POST request (as shown in figure 4.2.5.2-1, step 1) to the AF using the notification URI received in the subscription creation (or modification), as specified in subclause 4.2.6, and appending the "notify" segment path at the end of the URI. The PCF shall provide in the body of the HTTP POST request the "EventsNotification" data type including:

- the Events Subscription resource identifier related with the notification in the "evSubsUri" attribute; and

- the list of the reported events in the "evNotifs" attribute. For each reported event, the "AfEventNotification" data type shall include the event identifier and may include additional event information.

The PCF shall include:

- if the AF subscribed to the "PLMN\_CHG" event, the "event" attribute set to "PLMN\_CHG" and the "plmnId" attribute including the PLMN identifier and, if available, the NID if the PCF has requested to be updated with this information in the SMF;

- if the AF subscribed to the event "ACCESS\_TYPE\_CHANGE" in the HTTP POST request, the "event" attribute set to "ACCESS\_TYPE\_CHANGE" and:

i. the "accessType" attribute including the access type, and the "ratType" attribute including the RAT type when applicable for the notified access type; and/or

ii. if the "ATSSS" feature is supported and the PDU session is a MA PDU session:

a. if it is the first access type report, and both, 3GPP and non-3GPP access information is available, the "addAccessInfo" attribute. The "addAccessInfo" attribute contains the additional access type information, where the access type is encoded in the "accessType" attribute, and the RAT type is encoded in the "ratType" attribute when applicable for the notified access type;

b. if it is a subsequent access type change report:

- if a new access type is added to the MA PDU session, the"addAccessInfo" attribute with the added access type encoded in the "accessType" attribute, and the RAT type encoded in the "ratType" attribute when applicable for the notified access type;

- if an access type is released to the MA PDU session, the "relAccessInfo" attribute with the released access type encoded in the "accessType" attribute, and the RAT type encoded in the "ratType" attribute when applicable for the notified access type; and

NOTE: For a MA PDU session, if the "ATSSS" feature is not supported by the AF the PCF shall include the "accessType" attribute and the "ratType" attribute with a currently active combination of access type and RAT type. When both 3GPP and non-3GPP accesses are available, the PCF includes the information corresponding to the 3GPP access and only changes on activation and deactivation of 3GPP access are reported.

iii. the "anGwAddr" attribute including access network gateway address when available; and

- if the "IMS\_SBI" feature is supported and if the AF subscribed to the "CHARGING\_CORRELATION" event, the "event" attribute set to "CHARGING\_CORRELATION" and may include the "anChargIds" attribute containing the access network charging identifier(s) and the "anChargAddr" attribute containing the access network charging address.

The AF notification of other specific events using the Npcf\_PolicyAuthorization\_Notify request is described in the related subclauses.

Upon the reception of the HTTP POST request from the PCF indicating that the PDU session and/or service related event occurred, the AF shall acknowledge that request by sending an HTTP response message with the corresponding status code.

If the HTTP POST request from the PCF is accepted, the AF shall acknowledge the receipt of the event notification with a "204 No Content" response to HTTP POST request, as shown in figure 4.2.5.2-1, step 2.

If the HTTP POST request from the PCF is not accepted, the AF shall indicate in the response to HTTP POST request the cause for the rejection or, if the feature "ES3XX" is supported, the cause for redirection as specified in subclause 5.7.

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

#### 4.2.5.3 Notification about application session context termination

This procedure is invoked by the PCF to notify the AF that the application session context is no longer valid, as defined in 3GPP TS 23.501 [2], 3GPP TS 23.502 [3] and 3GPP TS 23.503 [4].

Figure 4.2.5.3-1 illustrates the notification about application session context termination.



Figure 4.2.5.3-1: Notification about application session context termination

When the PCF determines that the AF application session context is no longer valid, the PCF shall invoke the Npcf\_PolicyAuthorization\_Notify service operation by sending the HTTP POST request (as shown in figure 4.2.5.3-1, step 1) using the notification URI received in the "Individual Application Session Context" context creation, as specified in subclause 4.2.2 and subclause 4.2.6.3, and appending the "termination" segment path at the end of the URI, to trigger the AF to request the application session context termination (see subclause 4.2.4.2). The PCF shall provide in the body of the HTTP POST request the "TerminationInfo" data type including:

- the Individual Application Session Context resource identifier related to the termination notification in the "resUri" attribute; and

- the application session context termination cause in the "termCause" attribute of the "TerminationCause" data type, indicating:

i) "PDU\_SESSION\_TERMINATION" when the PCF received from the SMF the indication of SM Policy Context termination without a specific PDU session release cause value;

ii) "ALL\_SDF\_DEACTIVATION" when the PCF received from the SMF the indication that all the SDFs of the Individual Application Session Context resource are deactivated because other reasons than "PS\_TO\_CS\_HAN";

iii) "PS\_TO\_CS\_HO" if the "IMS\_SBI" feature is supported and the PCF received from the SMF:

a) the PDU session release cause value "PS\_TO\_CS\_HO"; or

b) the failure code value "PS\_TO\_CS\_HAN" for all the SDFs of the Individual Application Session Context resource.

Upon the reception of the HTTP POST request from the PCF requesting the application session context termination, the AF shall acknowledge that request by sending an HTTP response message with the corresponding status code.

If the HTTP POST request from the PCF is accepted, the AF shall acknowledge the receipt of the application session context termination request with a "204 No Content" response to HTTP POST request (as shown in figure 4.2.5.3-1, step 2) and shall invoke the Npcf\_PolicyAuthorization\_Delete service operation to the PCF as described in subclause 4.2.4.

If the HTTP POST request from the PCF is not accepted, the AF shall indicate in the response to HTTP POST request the cause for the rejection or, if the feature "ES3XX" is supported, the cause for redirection as specified in subclause 5.7.

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

#### 5.6.2.9 Type EventsNotification

Table 5.6.2.9-1: Definition of type EventsNotification

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| accessType | AccessType | C | 0..1 | Includes the access type. It shall be present when the notified event is "ACCESS\_TYPE\_CHANGE". |  |
| addAccessInfo | AdditionalAccessInfo | O | 0..1 | Indicates the additional combination of Access Type and RAT Type available for MA PDU session. It may be present when the notified event is "ACCESS\_TYPE\_CHANGE" and the PDU session is a Multi-Access PDU session. | ATSSS |
| relAccessInfo | AdditionalAccessInfo | O | 0..1 | Indicates the released combination of Access Type and RAT Type previously available for MA PDU session. It may be present when the notified event is "ACCESS\_TYPE\_CHANGE" and the PDU session is a Multi-Access PDU session. | ATSSS |
| anChargAddr | AccNetChargingAddress | O | 0..1 | Includes the access network charging address. It shall be present if available when the notified event is "CHARGING\_CORRELATION". | IMS\_SBI |
| anChargIds | array(AccessNetChargingIdentifier) | C | 1..N | Includes the access network charging identifier(s). It shall be present when the notified event is "CHARGING\_CORRELATION". | IMS\_SBI |
| anGwAddr | AnGwAddress | O | 0..1 | Access network Gateway Address. It shall be present, if applicable, when the notified event is "ACCESS\_TYPE\_CHANGE". |  |
| evSubsUri | Uri | M | 1 | The Events Subscription URI. Identifies the Events Subscription sub-resource that triggered the notification.  (NOTE) |  |
| evNotifs | array(AfEventNotification) | M | 1..N | Notifications about individual events. |  |
| failedResourcAllocReports | array(ResourcesAllocationInfo) | C | 1..N | Indicates the status of the PCC rule(s) related to certain failed media components. It shall be included when the event trigger is "FAILED\_RESOURCES\_ALLOCATION". |  |
| succResourcAllocReports | array(ResourcesAllocationInfo) | O | 1..N | Indicates the alternative service requirement the NG-RAN can guarantee to certain media components. It may be included when the event trigger is "SUCCESSFUL\_RESOURCES\_ALLOCATION". | AuthorizationWithRequiredQoS |
| noNetLocSupp | NetLocAccessSupport | O | 0..1 | Indicates the access network does not support the report of the requested access network information. | NetLoc |
| outOfCredReports | array(OutOfCreditInformation) | C | 1..N | Out of credit information per service data flow. It shall be present when the notified event is "OUT\_OF\_CREDIT". | IMS\_SBI |
| plmnId | PlmnIdNid | C | 0..1 | PLMN Identifier and, for an SNPN, also the NID. It shall be present when the notified event is "PLMN\_CHG" or, if location information is required but is not available when the notified event is "ANI\_REPORT". It shall be present if available when the notified event is "RAN\_NAS\_CAUSE". |  |
| qncReports | array(QosNotificationControlInfo) | C | 1..N | QoS notification control information. It shall be present when the notified event is "QOS\_NOTIF". |  |
| qosMonReports | array(QosMonitoringReport) | C | 1..N | QoS Monitoring reporting information. It shall be present when the notified event is "QOS\_MONITORING". | QoSMonitoring |
| ranNasRelCauses | array(RanNasRelCause) | C | 1..N | RAN-NAS release cause. It shall be present if available when the notified event is "RAN\_NAS\_CAUSE". | RAN-NAS-Cause |
| ratType | RatType | O | 0..1 | RAT type. It shall be present, if applicable, when the notified event is "ACCESS\_TYPE\_CHANGE". |  |
| ueLoc | UserLocation | O | 0..1 | E-UTRA, NR, or non-3GPP trusted and untrusted access user location information. "n3gppTai" and "n3IwfId" attributes within the "N3gaLocation" data type shall not be supplied. It shall be present if required and available when the notified event is "ANI\_REPORT". It shall be present if available when the notified event is "RAN\_NAS\_CAUSE". | NetLoc, RAN-NAS-Cause |
| ueTimeZone | TimeZone | O | 0..1 | UE time zone.  It shall be present if required and available when the notified event is "ANI\_REPORT". It shall be present if available when the notified event is "RAN\_NAS\_CAUSE". | NetLoc, RAN-NAS-Cause |
| usgRep | AccumulatedUsage | C | 0..1 | Indicates the measured volume and/or time for sponsored data connectivity. It shall be present when the notified event is "USAGE\_REPORT". | SponsoredConnectivity |
| tsnBridgeInfo | TsnBridgeInfo | O | 0..1 | Reports the TSN bridge information. | TimeSensitiveNetworking |
| tsnBridgeManCont | BridgeManagementContainer | O | 0..1 | Transports TSN bridge management information. | TimeSensitiveNetworking |
| tsnPortManContDstt | PortManagementContainer | O | 0..1 | Transports TSN port management information for the DS-TT port. | TimeSensitiveNetworking |
| tsnPortManContNwtts | array(PortManagementContainer) | O | 1..N | Transports TSN port management information for one or more NW-TT ports. | TimeSensitiveNetworking |
| NOTE: Either the complete resource URI included in the "evSubsUri" attribute or the "apiSpecificResourceUriPart" component (see subclause 5.1) of the resource URI included in the "evSubsUri" attribute can be used by the AF for the identification of the Individual Application Session Context resource related to the notification. Note that only the "apiSpecificResourceUriPart" of the resource URI included "resourceUri" attribute remains unchanged during the lifetime of the Individual Application Session Context resource at PCF (service) instance changes, as specified in 3GPP TS 29.500 [4], subclause 6.5. | | | | | |

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

#### 5.6.2.12 Type TerminationInfo

Table 5.6.2.12-1: Definition of type TerminationInfo

| Attribute name | Data type | P | Cardinality | Description | Applicability |
| --- | --- | --- | --- | --- | --- |
| termCause | TerminationCause | M | 1 | Indicates the cause for requesting the deletion of the Individual Application Session Context resource. |  |
| resUri | Uri | M | 1 | Identifies the Individual Application Session Context that triggered the termination notification.  (NOTE) |  |
| NOTE: Either the complete resource URI included in the "evSubsUri" attribute or the "apiSpecificResourceUriPart" component (see subclause 5.1) of the resource URI included in the "evSubsUri" attribute can be used by the AF for the identification of the Individual Application Session Context resource related to the notification. Note that only the "apiSpecificResourceUriPart" of the resource URI included "resourceUri" attribute remains unchanged during the lifetime of the Individual Application Session Context resource at PCF (service) instance changes, as specified in 3GPP TS 29.500 [4], subclause 6.5. | | | | | |

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