**3GPP TSG-CT WG4 Meeting #111-eC4-224nnn**

**E-Meeting, 18th – 26th August 2022 *was C4-224157, C4-224106***

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.503** | **CR** | **0916** | **rev** | **1** | **Current version:** | **17.7.0** |  |
|  | | | | | | | | |
| *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:*** | Expires timer for explicit unsubscribe | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Hewlett Packard Enterprise, Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc17 | | | | |  | ***Date:*** | | | 2022-08-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The SdmSubscription allows the NF Service Consumer to indiate that a suscription to data change is implicitly unsubscribed when the associated registration is cancelled/deregistered/purged.  Although the behavior with the expires attribute of the SdmSubscription covers the case when the subscription is not implicitly unsubscribed or implicitly unsubscribed and not registered, the behavior that the expires attribute is not applicable to the Unsubscribe case for a registered NF Service Consumer is not described explicitly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The description to the implicitUnsubscribe attribute of the SdmSubscription type is updated to describe that the expires attribute is not applicable when the implicitUnsubscribe attribute is set and the NF Service Consumer is registered. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Interoperability issues that may result in orphaned subscriptions in the NF Service Consumer if the NF Service Consumer ignores the expires attribute for implicitly unsubscribed subscriptions and the UDM/UDR removes subscriptions upon expiry where a valid registration exist. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.6.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 any OpenAPI specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1: Merge with C4-224106 Add a new attribute – implicitUnsubscribeWithExpiry to indicate that the Consumer NF supports implicit unsubscribe with a confirmed expiry time | | | | | | | | |

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

##### 6.1.6.2.3 Type: SdmSubscription

Table 6.1.6.2.3-1: Definition of type SdmSubscription

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| nfInstanceId | NfInstanceId | M | 1 | Identity of the NF Instance creating the subscription. |  |
| implicitUnsubscribe | boolean | O | 0..1 | If present with value true indicates that the subscription expires when the subscribing NF (AMF, SMF, SMSF) identified by the nfInstanceId ceases to be registered at the UDM.  When the subscribing NF is an SMF, this means that the subscription is terminated by UDM when the last PDU session of such SMF is deregistered for a given SUPI.  If the subscribing NF (AMF. SMF, SMSF) is not registered when the SDM subscription with implicitUnsubscribe indicator set to true is received by the UDM, the UDM should return a confirmed expiry time in the expires attribute to the subscribing NF even when the expires attribute is absent from the request. Otherwise, i.e., if the subscribing NF (AMF. SMF, SMSF) is registered when the SDM subscription with implicitUnsubscribe indicator set to true is received by the UDM, the UDM shall not include the expires attribute in the response even if the expires attribute is present in the request.  See NOTE 1. |  |
| implicitUnsubscribeWithExpiry | boolean | O | 0..1 | If present with value true indicates that the subscription expires when the subscribing NF (AMF, SMF, SMSF) identified by the nfInstanceId ceases to be registered at the UDM or at the time indicated by the confirmed expiry time indicated by the expires attribute (whichever occurs first).  When the subscribing NF is an SMF, this means that the subscription is terminated by UDM when the last PDU session of such SMF is deregistered for a given SUPI or at the time of the confirmed expiry time as indicated by the expires attribute (whichever occurs first). |  |
| expires | DateTime | C | 0..1 | If present, indicates the point in time at which the subscription expires.  Shall be present if implicitUnsubscribe is absent or false in the request.  Shall be present in the POST response if implicitUnsubscribeWithExpiry is present and set to true in the request. Otherwise should be absent when sent in a POST request. Within a POST request the proposed expiry time is conveyed whereas in a POST response or PATCH response the confirmed expiry time is returned. |  |
| callbackReference | Uri | M | 1 | URI provided by the NF service consumer to receive notifications |  |
| amfServiceName | ServiceName | O | 0..1 | When present, this IE shall contain the name of the AMF service to which Data Change Notifications are to be sent (see clause 6.5.2.2 of 3GPP TS 29.500 [4]). This IE may be included if the NF service consumer is an AMF. |  |
| monitoredResourceUris | array(Uri) | M | 1..N | A set of URIs that identify the resources for which a change triggers a notification.  The URI shall take the form of either an absolute URI or an absolute-path reference as defined in IETF RFC 3986 [31].  See NOTE 3.  Monitored Resource URIs should not contain query parameters. Instead, attributes within the SdmSubscription (e.g. singleNssai, dnn, plmnId) may be used for filtering. Received query parameters may be ignored by the UDM. |  |
| singleNssai | Snssai | O | 0..1 | This IE may be present if the consumer is SMF.  This attribute shall be also used as filter for the Nudr notifications when sdmSubscription is included in subscriptionDataSubscription in Nudr POST operation.  See NOTE 2. |  |
| dnn | Dnn | O | 0..1 | This IE may be present if the consumer is SMF.  This attribute shall be also used as filter for the Nudr notifications when sdmSubscription is included in subscriptionDataSubscription in Nudr POST operation.  When present, this IE shall contain the Network Identifier only, or Wildcard DNN.  See NOTE 2. |  |
| subscriptionId | string | C | 0..1 | This attribute shall be present if the SdmSubscription is sent in a GET response message on Nudr. It identifies the individual sdmSubscription stored in the UDR and may be used by the UDM to delete an expired or implicitly unsubscribed sdmSubscription. |  |
| plmnId | PlmnId | C | 0..1 | If present, it indicates the PLMN of the NF Instance creating the subscription (i.e., the PLMN serving the UE).  It shall be present if the NF Instance is located in a different PLMN than the UDM.  If absent, the Home PLMN ID is used as default. |  |
| immediateReport | boolean | O | 0..1 | This IE indicates whether immediate report is needed or not.  When present, this IE shall be set as following:  - true: immediate report is required  - false (default) immediate report is not required | ImmediateReport |
| report | ImmediateReport | C | 0..1 | This IE shall be present in Subscribe response, if the immediateReport attribute is set to "true" in Subscribe request.  When present, this IE shall contain the representation of subscription data sets that to be monitored, i.e. listed in monitoredResourceUris attribute. | ImmediateReport |
| supportedFeatures | SupportedFeatures | O | 0..1 | See clause 6.1.8  These are the features supported by the NF subscribing at the UDM. |  |
| contextInfo | ContextInfo | C | 0..1 | This IE if present may contain e.g. the headers received by the UDM along with the SdmSubscription.  Shall be absent on Nudm and may be present on Nudr. |  |
| nfChangeFilter | boolean | O | 0..1 | It may be present when monitoredResourceUris is related to the ue-context-in-amf-data and ue-context-in-smf-data.  If present, it indicates the consumer NF wants notification when NF is changed in the ue-context-in-amf-data and ue-context-in-smf-data. | ENA |
| uniqueSubscription | boolean | O | 0..1 | When present, this IE shall be set to indicate whether the subscription is a unique subscription, as specified in clause 5.2.2.3.2 and clause 5.2.2.3.3:  - true: the subscription is unique  - false: the subscription is not unique | LimitedSubscriptions |
| resetIds | array(string) | O | 1..N | May be present in subscribe response messages. The NF service consumer may decide to re-subscribe at the UDM when receiving a data restoration notification containing a matching resetId. |  |
| ueConSmfDataSubFilter | UeContextInSmfDataSubFilter | O | 0..1 | This IE may be present to receive the notification on changes for information in UeContextInSmfData related to specific PDU sessions. | UeConSmfDataSubFilter |
| NOTE 1: The subscription expires if the last registration identified by the nfInstanceId for the UE is deregistered at the UDM, e.g. the UDM shall remove the SdmSubscription of the SMF, if the UE's last PDU session SMF registration of this SMF is deregistered.  NOTE 2: If "singleNssai" is not included, and "dnn" is not included, the UDM shall notify the data change of all DNN configurations and network slice(s).  If "singleNssai" is included, and "dnn" is not included, the UDM shall notify the data change of network slice identified by "singleNssai" and all DNN configurations for the requested network slice identified by "singleNssai".  If "singleNssai" is not included, and "dnn" is included, the UDM shall notify the data change of all network slices where such DNN is available and all DNN configurations identified by "dnn".  If "singleNssai" is included, and "dnn" is included, the UDM shall notify the data change of network slice identified by "singleNssai" where such DNN is available and the DNN configuration identified by "dnn", if such DNN is available in the network slice identified by "singleNssai".  NOTE 3: The UDM should handle only the relative-path part (apiSpecificResourceUriPart, see 3GPP TS 29.501 [5] clause 4.4.1) and ignore possible inconsistencies in the base URI part. | | | | | |

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