**3GPP TSG-CT4 Meeting #99-e *C4-204238***

**Online, , 18th Aug 2020 - 28th Aug 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.510** | **CR** | **0381** | **rev** | **1** | **Current version:** | **16.4.0** |  |
|  | | | | | | | | |
| *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:*** | Making reqNfType as Conditional IE in SubscriptionData | | | | | | | | | |
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| ***Source to WG:*** | Cisco Systems | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | | 2020-08-11 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | There is a inconsistency in NRF notification sent to consumer NFs in the current design. This is explained in detail in the discussion paper C4-204237 with use cases and call flow. | | | | | | | | |
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| ***Summary of change:*** | | Make reqNfType as Conditional parameter in SubscriptionData | | | | | | | | |
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| ***Consequences if not approved:*** | | The NRF notfication towards consumers will be inconsistent. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1.6.2.16 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **N** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR does not introduce OpenAPI changes. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | The reqNFType is made conditional and OpenAPI changes removed to keep the changes backward compatible.  Coverpage is corrected for rev, Source to TSG, Clause affected and Other comments.  Title is also corrected to reflect that the reqNFType IE will be conditional not mandatory. | | | | | | | | |

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

##### 6.1.6.2.16 Type: SubscriptionData

Table 6.1.6.2.16-1: Definition of type SubscriptionData

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| nfStatusNotificationUri | Uri | M | 1 | Callback URI where the NF Service Consumer will receive the notifications from NRF. |
| reqNfInstanceId | NfInstanceId | O | 0..1 | If present, this IE shall contain the NF instance id of the NF service consumer. |
| subscrCond | SubscrCond | O | 0..1 | If present, this attributed shall contain the conditions identifying the set of NF Instances whose status is requested to be monitored. If this attribute is not present, it means that the NF Service Consumer requests a subscription to all NFs in the NRF (NOTE 1). |
| subscriptionId | string | C | 0..1 | Subscription ID for the newly created resource. This parameter shall be absent in the request to the NRF and shall be included by NRF in the response to the subscription creation request.  Read-Only: true  Pattern: "^([0-9]{5,6}-)?[^-]+$" |
| validityTime | DateTime | C | 0..1 | Time instant after which the subscription becomes invalid. This parameter may be sent by the client, as a hint to the server, but it shall be always sent back by the server (regardless of the presence of the attribute in the request) in the response to the subscription creation request. |
| reqNotifEvents | array(NotificationEventType) | O | 1..N | If present, this attribute shall contain the list of event types that the NF Service Consumer is interested in receiving.  If this attribute is not present, it means that notifications for all event types are requested. |
| reqNfType | NFType | C | 0..1 | An NF Service Consumer complying with this version of the specification shall include this IE.  If included, this IE shall contain the NF type of the NF Service Consumer that is requesting the creation of the subscription. The NRF shall use it for authorizing the request, in the same way as the "requester-nf-type" is used in the NF Discovery service (see Table 6.2.3.2.3.1-1).  When the subscription is for a set of NF Instances, the subscription may be accepted by NRF, but it shall only generate notifications from NF Instances whose authorization parameters allow the NF Service Consumer to access their services (NOTE 2). |
| reqNfFqdn | Fqdn | O | 0..1 | This IE may be present for a subscription request within the same PLMN as the NRF.  If included, this IE shall contain the FQDN of the NF Service Consumer that is requesting the creation of the subscription. The NRF shall use it for authorizing the request, in the same way as the "requester-nf-instance-fqdn" is used in the NF Discovery service (see Table 6.2.3.2.3.1-1).  This IE shall be ignored by the NRF if it is received from a requester NF belonging to a different PLMN.  When the subscription is for a set of NF Instances, the subscription may be accepted by NRF, but it shall only generate notifications from NF Instances whose authorization parameters allow the NF Service Consumer to access their services (NOTE 2). |
| reqSnssais | array(Snssai) | O | 0..1 | If included, this IE shall contain the list of S-NSSAIs of the NF Service Consumer that is requesting the creation of the subscription. If this IE is included in a subscription request in a different PLMN, the requester NF shall provide S-NSSAI values of the target PLMN, that correspond to the S-NSSAI values of the requester NF. The NRF shall use it for authorizing the request, in the same way as the "requester-snssais" is used in the NF Discovery service (see Table 6.2.3.2.3.1-1).  When the subscription is for a set of NF Instances, the subscription may be accepted by NRF, but it shall only generate notifications from NF Instances whose authorization parameters allow the NF Service Consumer to access their services (NOTE 2). |
| plmnId | PlmnId | O | 0..1 | If present, this attribute contains the target PLMN ID of the NF Instance(s) whose status is requested to be monitored. |
| nid | Nid | O | 0..1 | If present, this attribute contains the target NID that, together with the plmnId attribute, identifies the SNPN of the NF Instance(s) whose status is requested to be monitored. |
| notifCondition | NotifCondition | O | 0..1 | If present, this attribute contains the conditions that trigger a notification from NRF; this attribute shall only be present if the NF Service Consumer has subscribed to changes on the NF Profile (i.e., reqNotifEvents contains the value "NF\_PROFILE\_CHANGED", or reqNotifEvents attribute is absent) (NOTE 3).  If this attribute is absent, it means that the NF Service Consumer does not indicate any restriction, or condition, on which attributes of the NF Profile shall trigger a notification from NRF.  (NOTE 5). |
| reqPlmnList | array(PlmnId) | C | 1..N | This IE shall be included when subscribing to NF services in a different PLMN. When included, this IE shall contain the PLMN ID(s) of the requester NF.  (NOTE 2) |
| reqSnpnList | array(PlmnIdNid) | C | 1..N | This IE shall be included when the subscribing NF belongs to one or several SNPNs and it subscribes to NF services of a specific SNPN. When included, this IE shall contain the SNPN ID(s) of the requester NF.  When the subscription is for a set of NF Instances, the subscription may be accepted by NRF, but it shall only generate notifications from NF Instances whose authorization parameters allow the NF Service Consumer to access their services.  (NOTE 2) |
| servingScope | array(string) | O | 1..N | If present, this attribute indicates the target served area(s) of the NF instance(s) whose status is required to be monitored. (NOTE 4) |
| requesterFeatures | SupportedFeatures | C | 0..1 | Nnrf\_NFManagement features supported by the NF Service Consumer that is invoking the Nnrf\_NFManagement service. See clause 6.1.9.  This IE shall be included if at least one feature is supported by the NF Service Consumer.  Write-Only: true  (NOTE 6) |
| nrfSupportedFeatures | SupportedFeatures | C | 0..1 | Features supported by the NRF in the Nnrf\_NFManagement service. See clause 6.1.9.  This IE shall be included if at least one feature is supported by the NRF.  Read-Only: true |
| NOTE 1: The "subscription to all NFs" may be quite demanding in terms of resources in NRF and also in terms of network traffic of the resulting notifications, so it should be authorized by NRF under very strict policies (e.g. only to a specific requesting NF, as indicated by reqNfType and reqNfFqdn attributes).  NOTE 2: The authorization parameters in NF Profile are those used by NRF to determine whether a given NF Instance / NF Service Instance can be discovered by an NF Service Consumer in order to consume its offered services (e.g. "allowedNfTypes", "allowedNfDomains", etc.). Based on operator's policies, a subscription request not including the requester's information necessary to validate the authorization parameters in NF Profiles may be rejected or may be accepted but with only generating notifications from NF Instances whose authorization parameters allow any NF Service Consumer to access their services.  NOTE 3: The subscription to load changes may be quite demanding in terms of network traffic of the resulting notifications, thus it may be limited by the NRF via appropriate configuration (e.g. granularity threshold)  NOTE 4: An NF instance may explicitly indicate the served areas in the NF profile when registered to NRF. When this IE is present, the NRF shall only monitor the NF instance(s) indicating at least one of the served areas in the list. If an NF instance has not indicated any served area in its NF profile, it shall not be monitored.  NOTE 5: If the attributes to be monitored or excluded from monitoring, included as part of the "notifCondition" attribute, refer to a specific element of an array (e.g. they refer to a specifc array index of the "nfServices" attribute of the NFProfile), the NRF shall apply the same condition to all elements of the same array.  NOTE 6: If the NF Service Consumer that issued the subscription request indicated support for the "Service-Map" feature, the NRF shall send notifications of profile changes (see clause 6.1.6.2.17) affecting the list of NF Service Instances, as modifications of specific attributes of the "nfServiceList" map. Otherwise, the NRF shall send those notifications as a complete replacement of the "nfServices" array attribute. | | | | |

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