**3GPP TSG-SA WG2 Meeting #143E e-meetingS2-21XXXXX**

**Elbonia, February 24 – March 09, 2021**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.502** | **CR** | **XXXX** | **rev** | **-** | **Current version:** | **17.x.x (temporary 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:*** | Network Slice Quota Control Function (NSQCF) services definition | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | NEC, Apple | | | | | | | | | |
| ***Source to TSG:*** | S2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNS\_Ph2 | | | | |  | ***Date:*** | | | 2021-01-13 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | New eNS\_Ph2 feature addition (KI#1, KI#2) | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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's revision history:*** | |  | | | | | | | | |

**\* \* \* \* start of the change \* \* \* \***

### 5.2.xx NSQCF services

#### 5.2.xx.1 General

The following table illustrates the NSQCF services.

Table 5.2.xx-1: List of NSQCF services

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation Semantics | Example Consumer(s) |
| Nnsqcf\_NSQuota | Availability | Request/Response | AMF, SMF |
|  | Update | Request/Response | AMF, SMF |
|  |  |  |  |

#### 5.2.xx.2 Nnsqcf\_NSQuota services

##### 5.2.xx.2.1 General

**Service Description:** The NSQCF provides network slice quota management services for the NFs.

The AMF can check for the number of registered UEs per network slice quota availability at registration and it can also update the available quota when the UE registration status for a network slice changes (e.g. at UE registration or deregistration).

The SMF can check for the number of PDU sessions per network slice per UE quota availability at PDU session establishment procedure and it can also update this quota when new PDU sessions are stablished or existing PDU sessions are released.

##### 5.2.xx.2.2 Nnsqcf\_NSQuotaAvailability service operation

**Service Operation name:** Nnsqac\_NSQuotaAvailability

**Description:** Checks the network slice quota availability.

**Inputs, Required:** S-NSSAI(s), UE identity, quota type.

The S-NSSAI(s) parameter is a list of one or more network slices for which the quota availability check is required.

The UE identity is used to check whether the UE identity is in the list of UEs registered with a network slice when the service operation is triggered by the AMF. If the UE Identity is found in the list of UEs registered with a certain S-NSSAI, then the quota for that S-NSSAI is available regardless of whether the max number of registered UEs per that network slice quota is reached or not.

The quota type parameter defines the type of the quota, i.e. the number of UEs per network slice or the number of PDU sessions per network slice per UE.

**Outputs, Required:** Result indication.

##### 5.2.xx.2.3 Nnsqcf\_NSQuotaUpdate service operation

**Service Operation name:** Nnsqcf\_NSQuotaUpdate

**Description:** Updates the network slice quota.

**Inputs, Required:** S-NSSAI(s), UE identity, quota type, quota update flag.

The S-NSSAI(s) parameter is a list of one or more network slices for which the quota The AMF or SMF input one is to be updated.

The UE identity is used to check whether the UE identity is in the list of UEs registered with a network slice when the service operation is triggered by the AMF.

The quota type parameter defines the type of the network slice quota, i.e. the number of UEs per network slice quota when the service operation is triggered by the AMF or the number of PDU sessions per network slice per UE quota when the service operation is triggered by the SMF.

The quota update flag defines whether the available network slice quota is to be decreased (e.g. at registration) or increased (e.g. at deregistration). For example, if the quota update flag indicates number of UEs registered with a network slice quota decrease however, the UE Id is found in the list of the UEs registered with the network slice, then the quota is not updated (i.e. not decreased) as the UE is already registered with that network slice.

**Outputs, Required:** Result indication.

**\* \* \* \* end of the change \* \* \* \***