**3GPP TSG-WG SA2 Meeting #138E e-meeting  *S2-200xxxx***

**Elbonia, April 20 – 24, 2020 (revision of S2-2002969, 3045)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.502** | **CR** | **2236** | **rev** |  | **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:*** | Remove the Nnef\_NetworkStatus service | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon, CATT | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNA | | | | |  | ***Date:*** | | | 2020-04-10 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As replied to S2-2002968/C3-201499, the functionality of Nnef\_NetworkStatus service can be achieved by the Nnef\_AnalyticsExposure service by setting the Analytics Id to "User Data Congestion" to enable the AF to retrieve the user data congestion information from the NWDAF via the NEF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Remove the Nnef\_NetworkStatus service in TS 23.502. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Redundant stage 2 requirement. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.15.7, 5.2.6.1, 5.2.16, 5.2.6.20 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* \* First change \* \* \* \*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1], TS 23.501 [2] and TS 23.503 [20] apply. An abbreviation defined in TS 23.501 [2] or TS 23.503 [20] takes precedence over the definition of the same abbreviation, if any, in any other specifications.

NSR Network Status Result

\* \* \* \* Next change \* \* \* \*

### 4.15.7 Network status reporting

This clause contains the detailed description and the procedures for the network status reporting capability.

An AF may request for being notified about the network status, in a specific geographical area or for a specific UE.

The following methods are supported:

- The AF requests to be informed, one-time, about the network status. This procedure is referred to as one-time network status request;

- The AF requests to be informed, continuously, about the network status. This procedure is referred to as continuous network status request;

After receiving the request for network status notification from the AF, the NEF retrieves user data congestion analyticsinformation from NWDAF, as defined in clause 6.8 of TS 23.288 [50].

Based on the user data congestion analytics information the NEF receives from the NWDAF, the NEF derives and reports the network status for the geographical area or for the UE as Network Status Result (NSR) to the AF. When reporting to the AF, the NSR shall not include any 3GPP location information.

NOTE 1: Either exact values for congestion status, as reported by NWDAF to NEF or abstracted values e.g. (High, Medium, Low) can be reported by the NEF to the AF. The calculation and the reporting of the NSR to the AF depends on operator configuration (e.g. SLAs, usage etc.).

When an AF requests one-time Network Status from the NEF, the NEF can optionally provide a time interval at which the AF is allowed to re-issue the same request for network status.

NOTE 2: The time interval provided by NEF can be ignored by the AF if the subsequent request on network status is considerably different with regards to the geographical area or the UE.

The procedure as described in clause 6.1.1.2 or clause 6.1.2.2 of TS 23.288 [50] is used by an AF to retrieve Network Status Result (NSR) from the network for a specific geographic area or for a specific UE.

\* \* \* \* Next change \* \* \* \*

#### 5.2.6.1 General

The following table shows the NEF Services and Service Operations:

Table 5.2.6.1-1: NF Services provided by the NEF

|  |  |  |  |
| --- | --- | --- | --- |
| Service Name | Service Operations | Operation  Semantics | Example Consumer(s) |
| **Nnef\_EventExposure** | Subscribe | Subscribe/Notify | AF, NWDAF |
|  | Unsubscribe |  | AF, NWDAF |
|  | Notify |  | AF, NWDAF |
| **Nnef\_PFDManagement** | Fetch | Request/Response | SMF |
|  | Subscribe | Subscribe/Notify | SMF |
|  | Notify |  | SMF |
|  | Unsubscribe |  | SMF |
|  | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Delete | Request/Response | AF |
| **Nnef\_ParameterProvision** | Update | Request/Response | AF |
|  | Create | Request/Response | AF |
|  | Delete | Request/Response | AF |
|  | Get | Request/Response | AF |
| **Nnef\_Trigger** | Delivery | Request/Response | AF |
|  | DeliveryNotify | Subscribe/Notify | AF |
| **Nnef\_BDTPNegotiation** | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Notify |  | AF |
| **Nnef\_TrafficInfluence** | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Delete | Request/Response | AF |
|  | Get | Request/Response | AF |
|  | Notify | Subscribe/Notify | AF |
|  | AppRelocationInfo | Subscribe/Notify | AF |
| **Nnef\_ChargeableParty** | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Notify | Request/Response | AF |
| **Nnef\_AFsessionWithQoS** | Create | Request/Response | AF |
|  | Notify | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Revoke | Request/Response | AF |
| **Nnef\_MSISDN-less\_MO\_SMS** | Notify | Notify | AF |
| **Nnef\_ServiceParameter** | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Delete | Request/Response | AF |
|  | Get | Request/Response | AF |
| **Nnef\_APISupportCapability** | Subscribe | Subscribe/Notify | AF |
|  | Unsubscribe | Subscribe/Notify | AF |
|  | Notify | Subscribe/Notify | AF |
| **Nnef\_NIDDConfiguration** | Create | Request/Response | AF |
|  | TriggerNotify | Subscribe/Notify | AF |
|  | UpdateNotify | Subscribe/Notify | AF |
|  | Delete | Request/Response | AF |
| **Nnef\_NIDD** | Delivery | Request/Response | AF |
|  | DeliveryNotify | Subscribe/Notify | AF |
|  | GroupDeliveryNotify | Notify | AF |
| **Nnef\_SMContext** | Create | Request/Response | SMF |
|  | Delete | Request/Response | SMF |
|  | DeleteNotify | Subscribe/Notify | SMF |
|  | Delivery | Request/Response | SMF |
| **Nnef\_AnalyticsExposure** | Subscribe | Subscribe/Notify | AF |
|  | Unsubscribe |  | AF |
|  | Notify |  | AF |
|  | Fetch | Request/Response | AF |
| **Nnef\_UCMFProvisioning** | Create | Request/Response | AF |
|  | Delete | Request/Response | AF |
|  | Update | Request/Response | AF |
| **Nnef\_ECRestriction** | Get | Request/Response | AF |
|  | Update | Request/Response | AF |
| **Nnef\_ApplyPolicy** | Create | Request/Response | AF |
|  | Update | Request/Response | AF |
|  | Delete | Request/Response | AF |
| **Nnef\_Location** | LocationUpdateNotify | Notify | AF |

\* \* \* \* Next change \* \* \* \*

#### 5.2.6.16 Nnef\_AnalyticsExposure service

#### 5.2.6.16.1 General

This service is for allowing NF Service Consumer to ask analytics information as specified in TS 23.288 [50].

##### 5.2.6.16.2 Nnef\_AnalyticsExposure\_Subscribe operation

**Service operation name:** Nnef\_AnalyticsExposure\_Subscribe

**Description:** The NF consumer subscribes or modifies an existing subscription on analytics information.

**Inputs (required):** (Set of) Analytic ID(s), Analytic Filter Information, Target of Analytic Reporting (UEs (e.g. GPSIs), External Group Identifier, any UEs), Analytic Reporting Information, Notification Target Address (+ Notification Correlation ID), Geographical area. These input parameters are detailed in TS 23.288 [50].

NOTE: When the Analytics ID is set to "User Data Congestion", either Geographical area or GPSI is provided.

**Inputs (optional):** Subscription Correlation ID (in the case of modification of the analytic subscription), Expiry time, Duration, slice specific information.

**Outputs (required):** When the subscription is accepted: Subscription Correlation ID, Expiry time (required if the subscription can be expired based on the operator's policy).

**Outputs (optional):** First corresponding analytic report is included, if available.

##### 5.2.6.16.3 Nnef\_AnalyticsExposure\_Unsubscribe service operation

**Service operation name:** Nnef\_AnalyticsExposure\_Unsubscribe

**Description:** The NF consumer unsubscribes to an existing subscription on analytics information.

**Inputs (required):** Subscription Correlation ID.

**Outputs (required):** Operation execution result indication.

##### 5.2.6.16.4 Nnef\_AnalyticsExposure\_Notify service operation

**Service operation name:** Nnef\_AnalyticsExposure\_Notify

**Description:** NEF reports the analytics to the NF consumer that has previously subscribed.

**Inputs (required):** Analytic ID(s), Notification Correlation Information, Analytic information (defined on a per Analytic ID basis). These input parameters are detailed in TS 23.288 [50].

**Inputs (optional):** Timestamp of analytics generation, Probability assertion, specified in TS 23.288 [50].

**Outputs (required):** Operation execution result indication.

##### 5.2.6.16.5 Nnef\_AnalyticsExposure\_Fetch service operation

**Service operation name:** Nnef\_AnalyticsExposure\_Fetch

**Description:** The NF consumer requests analytics information.

**Inputs Required:** Analytic ID, Analytic Filter Information, Target of Analytic Reporting (UEs, External Group Identifier, any UEs), Analytic Reporting Information. These input parameters are detailed in TS 23.288 [50].

**Inputs, Optional:** None.

**Outputs Required:** Analytic information (defined on a per Analytic ID basis) specified in TS 23.288 [50].

**Outputs, Optional:** Timestamp of analytics generation, Probability assertion, specified in TS 23.288 [50].

\* \* \* \* Next change \* \* \* \*

#### 5.2.6.20 Void

\* \* \* \* End of changes \* \* \* \*