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| CHANGE REQUEST |
| Meeting ID:\* | SDS #46.1 |
| Source:\* | Kenichi Yamamoto, KDDI, kc-yamamoto@kddi.com |
| Date:\* | 2020-08-11 |
| Reason for Change/s:\* | Editorial correction for Network Monitoring Request |
| CR against: Release\* | Rel-4 |
| CR against: WI\* | [x]  Active WI-0080[ ]  MNT maintenance / < Work Item number(optional)>Is this a mirror CR? Yes [ ]  No [ ] mirror CR number: (Note to Rapporteur - use latest agreed revision)[ ]  STE Small Technical Enhancements / < Work Item number (optional)>Only ONE of the above shall be ticked |
| CR against: TS/TR\* | TS-0026 v4.5.0 |
| Clauses \* | 7.15 |
| Type of change: \* | [ ]  Editorial change[x]  Bug Fix or Correction[ ]  Change to existing feature or functionality[ ]  New feature or functionalityOnly ONE of the above shall be ticked |
| Other TS/TR(s) impacted | TS-0001, TS-0004 Release 4 |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES [x]  NO [ ] This CR may break backwards compatibility with the last approved version of the TS? YES [ ]  NO [x]  |
| Template Version: January 2019 (do not modify) |

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GUIDELINES for Change Requests:

Provide an informative introduction containing the problem(s) being solved, and a summary list of proposals.

Each CR should contain changes related to only one particular issue/problem.

In case of a correction, and the change apply to previous releases, a separate “mirror CR” should be posted at the same time of this CR

Mirror CR: applies only when the text, including clause numbering are exactly the same.

Companion CR: applies when the change means the same but the baselines differ in some way (e.g. clause number).

Follow the principle of completeness, where all changes related to the issue or problem within a deliverable are simultaneously proposed to be made E.g. A change impacting 5 tables should not only include a proposal to change only 3 tables. Includes any changes to references, definitions, and acronyms in the same deliverable.

Follow the drafting rules.

All pictures must be editable.

Check spelling and grammar to the extent practicable.

Use Change bars for modifications.

The change should include the current and surrounding clauses to clearly show where a change is located and to provide technical context of the proposed change. Additions of complete clauses need not show surrounding clauses as long as the proposed clause number clearly shows where the new clause is proposed to be located.

Multiple changes in a single CR shall be clearly separated by horizontal lines with embedded text such as, start of change 1, end of change 1, start of new clause, end of new clause.

When subsequent changes are made to content of a CR, then the accepted version should not show changes over changes. The accepted version of the CR should only show changes relative to the baseline approved text.

## Introduction

This contribution addresses following editorial corrections for Network Monitoring Requmest procedures while doing stage 3 work.

* The configuration of *monitorEnable* attribute is added to Step 1.
* Deletion procedures of Network Status Report API in Step 7 and Step 8 are incorrect. All of the API procedures with SCEF interaction are within Step 3a. So the procedures are moved to Step 3a.
* Remove the subscription description in Step 1.
* Update the figure based on the corrections above.

### ----------------------start of change 1 ----------------------------------------------------

## 7.15 Network Monitoring Request

### 7.15.1 Overview

This clause provides details on how an AE (Originator) exchanges with an underlying 3GPP network parameters to be used for optimizing the data traffic over the underlying 3GPP network for a set of Field Domain Nodes hosted on UEs. If the AE (Originator) sets the type of network request with the associated attributes such as a geographic area, congestion threshold and External Group ID, the Hosting CSE determines the corresponding T8 API(s) based on the type of network request, maps the attributes to the T8 API(s), and communicates with the SCEF. When the SCEF returns a response to the Hosting CSE, the Hosting CSE maps the response to the specified oneM2M resource and sends a response to the AE (Originator). Based on the information, the AE (Originator) may adjust data processing/transfer for the Field Domain Nodes (ASN/MN/ADN).

### 7.15.2 Resource Structure

Refer to the clause 9.6.64 Resource Type <*nwMonitoringReq*> of oneM2M TS-0001[1].

### 7.15.3 Procedures

Figure 7.15.3.1 depicts a procedure to retrieve an underlying 3GPP network information in a particular geographic area initiated by a request from an AE. The following T8 APIs are applicable for this procedure.

* Network Status Reports API
* Monitoring Event API (Monitoring Type: Number of UEs in an Area)



**Figure 7.15.3-1: Procedure to retrieve an underlying 3GPP network information in a particular geographic area**

**Pre-conditions:**

There is a relationship in place between the Service Provider and MNO allowing the AE (Originator) to request 3GPP T8 API information from the underlying 3GPP network. The method for establishing this relationship is outside the scope of the present document.

If the deployment uses External Group Identifier (*externalGroupId*) as described in 3GPP TS29.122 [4], when ASN/MN-CSEs or ADN-AEs register with the Hosting CSE (SCS), then they use *externalGroupId* information to configure the *externalGroupID* of the corresponding <*remoteCSE*> or <*AE*> resources (see clause 6.3 when *externalGroupID* is configured).

The Hosting CSE is configured with system defaults as described in clause 7.8 and/or clause 7.4.8.

**Step 1: CREATE *<nwMonitoringReq>* Request & Response**

An Originator (AE) requests the creation of a <*nwMonitoringReq*> resource at the Hosting CSE. The request shall include the following parameter as specified in clause 9.6.64 of oneM2M TS-0001[1]:

* *monitorEnable* shall be set to disable.

If the operation is successful, the Originator receives a response message.

**Step 2: UPDATE *<nwMonitoringReq*> Request for enable network monitoring**

In order to initiate a monitoring request**,** the Originator sends a request to update the *monitorEnable* attribute of the *<nwMonitoringReq>* resource.

* *monitorEnable* shall be set to the type of network monitoring request (e.g. congestion status in an area, the number of devices in an area, both congestion status and the number of devices in an area, disable).
* *geographicArea* shall be set to the geographic area where the Originator wants to retrieve an underlying 3GPP network information.
* *externalGroupID* shall be set to the group of interest in the request, in which case the Monitoring Event Request is for the number of group-member UEs present in the area of interest. The Hosting CSE gets the *externalGroupID* information according to the attribute *externalGroupID* of the resource <*remoteCSE*> and <*AE*> of the UEs which location are in the area of interest. If there are multiple *externalGroupID*s*,* the Hosting CSE uses local policies to determine the value sent in this request. For example, the Hosting CSE may determine to send separate requests for each *externalGroupID* or it may determine to send this request without an *externalGroupID* and filter the received information.
* *congestionLevel* shall be set to one of following values:
	+ The list of congestion level(s) with exact value and specify what congestion threshold(s) the Originator wants to receive a report for.
	+ The list of enumerated types with values HIGH, MEDIUM and LOW that specify the type of congestion status the Originator would like to receive a report for.

**Step 3a: Process Network Status Reports Request**

If the *monitorEnable* attribute is set to “enable congestion status in an area” or “enable both number of devices and congestion status in an area”, the Hosting CSE maps the attributes of the *<nwMonitoringReq>* resource to the following attributes of Network Status Reports API as described in clause 7.8*.*

* The Hosting CSE sets the fixed parameters with the corresponding attributes of the API (e.g. *URI, monitorExpireTime, supportedFeatures*).
* *geographicArea* of the <*nwMonitoringReq*> resource shall be set to *locationArea*.
* If *congestionLevel* indicates an abstracted value for congestion level(s) (e.g. HIGH, MEDIUM or LOW), *thresholdTypes* shall be set to the abstracted value of the *congestionLevel.* If *congestionLevel* indicates an exact value for congestion level(s) (e.g. between 0 and 31), *thresholdValues* shall be set to the exact value of the *congestionLevel.*

Then the Hosting CSE communicates with SCEF by using the procedures for Network Status Reports API described clause 7.8.

When the the Hosting CSE returns a response having a response code of 204 NO CONTENT to SCEF in Step 7 of clause 7.8, the Hosting CSE proceeds to Step 9 of clause 7.4.8 for cancellation procedures.

**Step 3b: Process Monitoring Event (Number of UEs in an area) Request**

If the *monitorEnable* attribute of the *<nwMonitoringReq>* resource is set to “enable number of devices in an area” or “enable both number of devices and congestion status in an area”, the Hosting CSE maps the attributes of the *<nwMonitoringReq>* resource to the following attributes of Monitoring Event API (Number of UEs in an area) described clause 7.4.8.

* The Hosting CSE shall set the fixed parameters with the corresponding attributes of the API (e.g. *URI, supportedFeatures*).
* *geographicArea* of the <*nwMonitoringReq*> resource shall be set to *locationArea* or *locationArea5G*.
* *externalGroupId* shall be set to the *externalGroupID* if in step 2 the Hosting CSE monitoring request targets identifying the number of UEs from a specific group in the area and the Hosting CSE determined an *externalGroupID* to be monitored.

Then the Hosting CSE communicates with SCEF by using the procedures for Monitoring Event API (Number of UEs in an area) described clause 7.4.8.

**Step 4: UPDATE *<nwMonitoringReq>* Response**

After completion of Step 3a and/or 3b, the Hosting CSE shall map the response of 3GPP T8 API to the following attributes of the *<nwMonitoringReq>* resource as detailed below. The update *<nwMonitoringReq>* resource generates a corresponding response to the Originator.

* If the response indicates *nsiValue* or *nsiType,* the Hosting CSE shall set the *congestionStatus* parameter of the *<nwMonitoringReq>* resource.
* If the response indicates *ueCount,* the Hosting CSE shall set the *numberOfDevices* parameter of the *<nwMonitoringReq>* resource. If an *externalGroupId* has been provided in the request, the count indicates the number of UEs from the given group which are found at the location.
* If the response indicates *externalIds,* the Hosting CSE shall configure to indicate *M2M-Ext-ID* attribute of the *<nwMonitoringReq>* resource.

**Step 5: The Originator adjusts data processing/transfer for Field Domain Nodes (ASN/MN/ADN)**

The Originator may use the information provided in step 4 in order to adjusts data processing/transfer for Field Domain Nodes (ASN/MN/ADN).

**Step 6 (Optional): DELETE *<nwMonitoringReq>* Request**

The Originator sends a request to delete the <*nwMonitoringReq*> resource.

**Step 7 (Optional): The Hosting CSE returns response to the Originator.**

The Hosting CSE sends a DELETE response back to the Originator.

See clause 8.3 for a list of possible error scenarios and error handling options for the Hosting CSE.

### ----------------------end of change 1 -----------------------------------------------------