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| CHANGE REQUEST | |
| Meeting ID:\* | SDS #47 |
| Source:\* | Kenichi Yamamoto, KDDI, [kc-yamamoto@kddi.com](mailto:kc-yamamoto@kddi.com) |
| Date:\* | 2020-10-15 |
| Reason for Change/s:\* | Editorial correction for <nwMonitoringReq> |
| CR against: Release\* | Rel-4 |
| CR against: WI\* | 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-0001 v4.6.0 |
| Clauses \* | 9.6.64, 10.2.23 |
| Type of change: \* | Editorial change  Bug Fix or Correction  Change to existing feature or functionality  New feature or functionality  Only ONE of the above shall be ticked |
| Other TS/TR(s) impacted | TS-0001, TS-0026 Release 4 |
| Post Freeze checking:\* | This CR contains only essential changes and corrections? YES  NO  This CR may break backwards compatibility with the last approved version of the TS? YES  NO |
| 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 <nwMonitoringReq> resource while doing stage 3 work.

* Remove <*subscription*> resource in Change 1 and Change 3.
* The multiplicity of *geographicArea* attribute is changed for a single region and optional use in table 9.6.64-1 of Change 1.
* Remove the *announcedTo* attribute in Change 1 and Change 3.
* The combination between *monitorEnable* attribute and *congestionLevel* /*externalGroupID/ geographicArea* attributes are added to table 9.6.64-1 of Change 1 and Create/Update operation of Change 2.
* Remove the SCEF/NSE procedures in Delete operation of Change 2.

R01 updates based on SDS discussion.

* Undo the subscription resource with additional descriptions.
* Add subscription procedures to CREATE operation.
* Revice UPDATE operation for NSE interaction.
* Add description to DELETE operation for NSE interaction.

R02 updates based on agreed TS-0004 contributions (SDS-0019R08) .

* The Disabled of *monitorEnable* is not allowed for Update operation. So the limitations for the operations are added.
* If the value of *monitorEnable* is set and other mandatory attribute is not present (e.g. *congestionLevel* attribute) for Update operation, the Receiver shall not process the request. So error handling operations for the Receiver are added.
* Additional Update is not allowed to align with POST methods of 3GPP SCEF APIs. So the limitations for the Update operations are added
* Apply enum values of monitorEnable attribute in <nwMonitoringReq> Resource type and CRUD operations.

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

### 9.6.64 Resource Type *nwMonitoringReq*

The <*nwMonitoringReq*> resource is used by an Originator (e.g. AE) to request network status information from an Underlying Network. The resource provides the status information for a particular geographic area of an Underlying Network such as congestion status and number of devices.

The <*nwMonitoringReq*> resource contains the child resources specified in Table 9.6.64-1.

Table 9.6.64-1: Child resources of *<nwMonitoringReq>* resource

| **Child Resources of <*nwMonitoringReq*>** | Child Resource Type | Multiplicity | Description |
| --- | --- | --- | --- |
| *[variable]* | *<subscription>* | 0..n | See clause 9.6.8. |

The <*nwMonitoringReq*> resource contains the attributes specified in table 9.6.64-2.

Table 9.6.64‑1: Attributes of *<nwMonitoringReq>* Resource

| Attributes of *<nwMonitoringReq>* | Multiplicity | RW/  RO/  WO | Description |
| --- | --- | --- | --- |
| *resourceType* | 1 | RO | See clause 9.6.1.3 |
| *resourceID* | 1 | RO | See clause 9.6.1.3 |
| *resourceName* | 1 | WO | See clause 9.6.1.3 |
| *parentID* | 1 | RO | See clause 9.6.1.3 |
| *creationTime* | 1 | RO | See clause 9.6.1.3 |
| *lastModifiedTime* | 1 | RO | See clause 9.6.1.3 |
| *expirationTime* | 1 | RW | See clause 9.6.1.3 |
| *accessControlPolicyIDs* | 0..1 (L) | RW | See clause 9.6.1.3 |
| *dynamicAuthorizationConsultationIDs* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *owner* | 0..1 | RW | See clause 9.6.1.3. |
| *labels* | 0..1 (L) | RW | See clause 9.6.1.3. |
| *monitorEnable* | 1 | RW | Indicates the type of network monitoring request.   * Disabled * MonitorCongestion * MonitorDeviceNumber * MonitorCongestionAndDeviceNumber |
| *geographicArea* | 0..1 | RW | Indicates a list of geographic area where the Originator wants to retrieve an Underling Network information. This attribute shall be configured if *monitorEnable* is set to MonitorCongestion, MonitorDeviceNumber or MonitorCongestionAndDeviceNumber. |
| *congestionLevel* | 0..1(L) | RW | Indicates a list of congestion level(s) with abstracted value (e.g. HIGH, MEDIUM or LOW) or exact value (e.g. between 0 and 31) that the IN-CSE requests to be informed of when reached. This attribute shall be configured if *monitorEnable* is set to MonitorCongestion or MonitorCongestionAndDeviceNumber. |
| *congestionStatus* | 0..1 | RO | Indicates the network status indicator that is abstracted value for congestion status (e.g. HIGH, MEDIUM or LOW) or exact value for congestion status (e.g. between 0 and 31) received from the NSE. |
| *numberOfDevices* | 0..1 | RO | Indicates the network status indicator that is an integer for congestion status or the number of devices. |
| *externalGroupID* | 0..1 | RW | It is used by an M2M Service Provider (M2M SP) when services targeted to a group of M2M Devices are requested from the Underlying Network. It is assumed to be a globally unique ID exposed by the underlying network to identify a group of M2M Devices (e.g. ADN, ASN, MN) for group related services. This attribute may be configured if *monitorEnable* is set to MonitorDeviceNumber or MonitorCongestionAndDeviceNumber. |
| *M2M-Ext-IDs* | 0..1(L) | RO | See clause 7.1.8 where this attribute is described. This attribute is used only for the case of dynamic association between the M2M-Ext-ID with the CSE-ID or AE-ID. |

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

### ----------------------start of change 2 ----------------------------------------------------

### 10.2.23 Network Monitoring Request

#### 10.2.23.1 Introduction

This clause describes the procedures for creation, retrieval, update and deletion of the *<nwMonitoringReq*> resource. The corresponding procedures over the Mcn reference point are described in TS-0026 [15] when the underlying network is 3GPP.

#### 10.2.23.2 Create <*nwMonitoringReq*>

This procedure shall be used for creating an *<nwMonitoringReq>* resource

**Table 10.2.23.2-1: *<nwMonitoringReq>* CREATE**

| ***<nwMonitoringReq>* CREATE** | |
| --- | --- |
| Information in Request message | All parameters defined in table 8.1.2-3 apply with the specific details for:  ***Content:*** The resource content shall provide the information as defined in clause 9.6.64 |
| Processing at Originator before sending Request | According to clause 10.1.2 with the following modifications:   * The Originator shall set the *monitorEnable* attribute to Disabled. |
| Processing at Receiver | According to clause 10.1.2. |
| Information in Response message | According to clause 10.1.2 |
| Processing at Originator after receiving Response | According to clause 10.1.2 with the following modifications:  The Originator shall create the <*subscription*> resource as the child of <*nwMonitoringReq*> resource to get notified of network monitoring status. |
| Exceptions | According to clause 10.1.2. |

#### 10.2.23.3 Retrieve<*nwMonitoringReq*>

This procedure shall be used for retrieving the representation of the *<nwMonitoringReq>* resource.

**Table 10.2.23.3-1: *<nwMonitoringReq>* RETRIEVE**

|  |  |
| --- | --- |
| ***<nwMonitoringReq>* RETRIEVE** | |
| Information in Request message | All parameters defined in table 8.1.2-3 |
| Processing at Originator before sending Request | According to clause 10.1.3 |
| Processing at Receiver | According to clause 10.1.3 |
| Information in Response message | All parameters defined in table 8.1.3-1 apply with the specific details for:  ***Content***: attributes of the *<nwMonitoringReq>* resource as defined in clause 9.6.64 |
| Processing at Originator after receiving Response | According to clause 10.1.3 |
| Exceptions | According to clause 10.1.3 |

#### 10.2.23.4 Update <*nwMonitoringReq*>

This procedure shall be used for updating the attributes and the actual data of an *<nwMonitoringReq>* resource.

**Table 10.2.23.4-1: *<nwMonitoringReq>* UPDATE**

|  |  |
| --- | --- |
| ***<nwMonitoringReq>* UPDATE** | |
| Information in Request message | All parameters defined in table 8.1.2-3 apply with the specific details for:  ***Content*:** attributes of the *<nwMonitoringReq>* resource as defined in clause 9.6.64 which need be updated |
| Processing at Originator before sending Request | According to clause 10.1.4 with the following additions:   * If the Originator sends a request for congestion status in an area, the Originator shall set the *monitorEnable* attribute to MonitorCongestion, and set the *congestionLevel* attribute and *geographicArea* attribute. * If the Originator sends a request for number of devices in an area, the Originator shall set the *monitorEnable* attribute to MonitorDeviceNumber, and set the *geographicArea* attribute. * If the Originator sends a request for congestion status and number of devices in an area, the Originator shall set the *monitorEnable* attribute to MonitorCongestionAndDeviceNumber, and set the *congestionLevel* attribute and *geographicArea* attribute. * The Originator may also configure other optional attributes defined in clause 9.6.64. * The Originator shall not set the value of the *monitorEnable* attribute to Disabled. * If the Update operation is performed successfully, the Originator shall not send an additional Update request. |
| Processing at Receiver | According to clause 10.1.4 with the following additions:   * If the value of *monitorE*nable is MonitorCongestion or MonitorCongestionAndDeviceNumber, the Receiver shall check if *congestionLevel* attribute and *geographicArea* attribute are included in the request. If not, the Receiver shall respond with an error. * If the value of *monitorE*nable is MonitorDeviceNumber, the Receiver shall check if *geographicArea* attribute is included in the request. If not, the Receiver shall respond with an error. * If the value of *monitorE*nable is Disabled, the Receiver shall respond with an error. |
| Information in Response message | According to clause 10.1.4 |
| Processing at Originator after receiving Response | According to clause 10.1.4 |
| Exceptions | According to clause 10.1.4 with the following additions:   * Once the Hosting CSE sends a UPDATE response, the Hosting CSE shall submit a network monitoring request to the appropriate NSE using the appropriate Mcn protocol. The message shall contain information needed by the NSE to update the network monitoring request for the corresponding underlying network. For example, for a 3GPP network monitoring request the required information needed within the network monitoring request message is captured in TS-0026 [11]. * The Receiver shall check the value of monitorEnable in the *<nwMonitoringReq>* resource prior to the Update. If the value of monitorEnable is not Disabled, the Receiver shall not update the *<nwMonitoringReq>* resource and shall return an error response to the Originator. |

#### 10.2.23.5 Delete <*nwMonitoringReq*>

This procedure shall be used for deleting the *<nwMonitoringReq>* resource with all related information.

**Table 10.2.23.5-1: *<nwMonitoringReq>* DELETE**

|  |  |
| --- | --- |
| ***<nwMonitoringReq>* DELETE** | |
| Information in Request message | All parameters defined in table 8.1.2-3 apply |
| Processing at Originator before sending Request | According to clause 10.1.5 |
| Processing at Receiver | According to clause 10.1.5 with the following modifications:  Depending on the procedures of the Underlying Network, the CSE shall submit a network monitoring delete request to the appropriate NSE using the appropriate Mcn protocol. The message shall contain information needed by the NSE to delete the network monitoring request for the corresponding underlying network. For example, for a 3GPP network monitoring delete request the required information needed within the network monitoring request message is captured in TS-0026 [11].  If the CSE receives a confirmation from the NSE that the network monitoring delete was accepted, the CSE shall delete the applicable <*nwMonitoringReq*> resource and return a successful response to the Originator. If the CSE receives an indication that the network monitoring delete request was not accepted, the CSE shall return an error response to the Originator and shall not update the <*nwMonitoringReq*> resource. . |
| Information in Response message | According to clause 10.1.5 |
| Processing at Originator after receiving Response | According to clause 10.1.5 |
| Exceptions | According to clause 10.1.5 |

### ----------------------end of change 2 -----------------------------------------------------