**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  |
| *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 | **X** | Core Network | **X** |

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| ***Title:***  |  |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** | SA5 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *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 canbe 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | Examples on how to use CRUD operations in the HTTP/JSON solution are provided. However, there is no example for sending an alarm. |
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| ***Summary of change:*** | An example for sending an alarm is added. |
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| ***Consequences if not approved:*** | Missing example for sending an alarm may result in interoperability issues. |
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| ***Clauses affected:*** | A.1.4 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| **Begin of modifications** |

### A.1.4 Examples

**Sending alarm notifications**

This example shows how a "notifyNewAlarm" notification is sent.

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| POST /3gpp-management/alarm-notification-sink HTTP/1.1Host: example.orgContent-Type: application/json{ "href": "https://example.org/SubNetwork=SN1/ManagedElement=ME1", "notificationId": 123456789, "notificationType": "notifyNewAlarm", "eventTime": "2024-08-21T16:39:57-08:00", "systemDN": "DC=example.org,SubNetwork=SN1,MnsAgent=MA1", "alarmId": "alarm-id-1", "alarmType": "EQUIPMENT\_ALARM", "probableCause": "Indeterminate", "perceivedSeverity": "CRITICAL"} |

**Retrieving alarms**

This example shows how to retrieve an alarm based on its "alarmId".

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| GET /SubNetwork=SN1/AlarmList=AL1?\ fields=/attributes/alarmRecords/alarmId1 HTTP/1.1 |

Multiple alarms can be retrieved with the following request.

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| GET /SubNetwork=SN1/AlarmList=AL1?\ fields=/attributes/alarmRecords/(alarmId1 | alarmId2) HTTP/1.1 |

The next example shows how all alarms with a perceived severity of major or critical can be retrieved.

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| GET /SubNetwork=SN1/AlarmList=AL1?\ filter=/AlarmList[id="AL1"]/attributes/alarmRecords\ /\*[perceivedSeverity="MAJOR" or perceivedSeverity="CRITICAL"] HTTP/1.1 |

To retrieve all alarms for a specific managed object instance identified by "DN1" the MnS consumer may send the following request.

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| GET /SubNetwork=SN1/AlarmList=AL1?\ filter=/AlarmList[id="AL1"]/attributes/alarmRecords\ /\*[objectInstance="DN1"] HTTP/1.1 |

A MnS consumer wants to retrieve often all alarms from one Managed Element. A Manged Element is modelled in the management system by an object tree whose base object is a "ManagedElement" instance. In the example below this instance is identified by the DN "example.com/SubNetwork=SN1/ManagedElement=ME1". The Jex expression in the query parameter "selection" evaluates to true for all DNs, that contain (start) with this DN, i.e. for all objects in the object subtree of interest.

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| GET /SubNetwork=SN1/AlarmList=AL1?\ filter=/AlarmList[id="AL1"]/attributes/alarmRecords\ /\*[contains(objectInstance,"example.com/SubNetwork=SN1/ManagedElement=ME1")] |

**Acknowledging alarms**

To acknowledge an alarm a MnS consumer has multiple alternatives. With JSON Patch the request may look as follows.

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| PATCH /SubNetwork=SN1/AlarmList=AL1 HTTP/1.1Host: example.orgContent-Type: application/json-patch+json[ { "op": "add", "path": "/attributes/alarmRecords/alarmId1/ackUserId", "value": "userId1" }, { "op": "add", "path": "/attributes/alarmRecords/alarmId1/ackSystemId", "value": "systemId1" }, { "op": "replace", "path": "/attributes/alarmRecords/alarmId1/ackState", "value": "ACKNOWLEDGED" }] |

3GPP JSON Patch allows for a more compact request.

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| PATCH /SubNetwork=SN1/AlarmList=AL1 HTTP/1.1Host: example.orgContent-Type: application/vnd.3gpp.json-patch+json[ { "op": "merge", "path": "#/attributes/alarmRecords/alarmId1", "value": { "ackUserId": "userId1", "ackSystemId": "systemId1", "ackState": "ACKNOWLEDGED" } }] |

Also JSON Merge Patch is quite compact.

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| PATCH /SubNetwork=SN1/AlarmList=AL1 HTTP/1.1Host: example.orgContent-Type: application/merge-patch+json{ "id": "AL1", "attributes": { "alarmRecords": { "alarmId1": { "ackUserId": "userId1", "ackSystemId": "systemId1", "ackState": "ACKNOWLEDGED" } } }} |

**Commenting alarms**

In this example a comment is added to an alarm identified with its "alarmId".

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| PATCH /SubNetwork=SN1/AlarmList=AL1 HTTP/1.1Host: example.orgContent-Type: application/json-patch+json[ { "op": "add", "path": "/attributes/alarmRecords/alarmId1/comments/-", "value": { "commentUserId": "userId1", "commentSystemId": "systemId1", "commentText": "Here is the comment text" } }] |

The MnS producer adds the "commentTime" attribute to the alarm record. The response may be as follows.

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| HTTP/1.1 200 OKDate: Tue, 06 Aug 2019 16:50:26 GMTContent-Type: application/json{ "commentTime": "2019-08-06T16:50:26Z", "commentUserId": "id", "commentSystemId": "id", "commentText": "Here is the comment text"} |

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| **End of modifications** |