**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 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-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 ... | | |
|  | |  | | | | | | | | |
| ***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/1.1  Host: example.org  Content-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.

|  |
| --- |
| 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.

|  |
| --- |
| 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.

|  |
| --- |
| 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/1.1  Host: example.org  Content-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/1.1  Host: example.org  Content-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.

|  |
| --- |
| PATCH /SubNetwork=SN1/AlarmList=AL1 HTTP/1.1  Host: example.org  Content-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/1.1  Host: example.org  Content-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.

|  |
| --- |
| HTTP/1.1 200 OK  Date: Tue, 06 Aug 2019 16:50:26 GMT  Content-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** |