**3GPP TSG-SA5 Meeting #129e *S5-201277***

**e-meeting, 24 February – 4 March 2020**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **28.532** | **CR** | **0094** | **rev** | **-** | **Current version:** | **16.2.0** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Correction of MnS Stage 3 solution sets for integration with ONAP VES |
|  |  |
| ***Source to WG:*** | AT&T, Ericsson, Nokia, Orange |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | ONAP3GPP |  | ***Date:*** | 2020-02-25 |
|  |  |  |  |  |
| ***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 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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | The Provisioning MnS, Fault Supervision MnS and Heartbeat Stage 3 solution sets for integration with ONAP VES shall not contain any normative mapping between Stage 2 notification parameters and VES common event header fields. |
|  |  |
| ***Summary of change:*** | Remove notification parameter mapping principles from the normative parts.Add a new informative annex to provide guidelines for the integration of 3GPP notifications with ONAP VES, as agreed with ONAP. |
|  |  |
| ***Consequences if not approved:*** | No interworking between 3GPP notification producers and the ONAP VES collector. |
|  |  |
| ***Clauses affected:*** | 12.1.2.2.1.2, 12.1.2.2.2, 12.1.2.2.3, 12.1.2.2.4, 12.2.2.2.1.2, 12.2.2.2.2, 12.2.2.2.3, 12.2.2.2.4, 12.2.2.2.5, 12.2.2.2.6, 12.2.2.2.7, 12.2.2.2.8, 12.2.2.2.9, 12.2.2.2.10, 12.2.2.2.11, 12.4.2, A.1.0 (New), A.2.0 (New), A.5.0 (New), A.5.2, Annex X (new) |
|  |  |
|  | **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:*** |  |

|  |
| --- |
| **1st Change** |

###### 12.1.2.2.1.2 Notification parameter mapping principles

3GPP provisioning notification parameters are mapped to solution set equivalent as follows.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

NOTE 1: Void.

NOTE 2: Void.

NOTE 3: Void.

NOTE 4: Void.

##### 12.1.2.2.2 Notification notifyMOICreation

See clause 12.1.1.2.2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

##### 12.1.2.2.3 Notification notifyMOIDeletion

See clause 12.1.1.2.3.

.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

##### 12.1.2.2.4 Notification notifyMOIAttributeValueChange

See clause 12.1.1.2.4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

|  |
| --- |
| **Next Change** |

###### 12.2.2.2.1.2 Notification parameter mapping principles

3GPP IS fault supervision alarm notification parameters are mapped to solution set equivalent as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

NOTE 1: Void.

NOTE 2: Void.

NOTE 3: Void.

NOTE 4: Void.

##### 12.2.2.2.2 Notification notifyNewAlarm

See clause 12.2.1.2.2.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.3 Notification notifyNewSecurityAlarm

See clause 12.2.1.2.3.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.4 Notification notifyAckStateChanged

See clause 12.2.1.2.4.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.5 Notification notifyClearedAlarm

See clause 12.2.1.2.5.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.6 Notification notifyAlarmListRebuilt

See clause 12.2.1.2.6.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.7 Notification notifyChangedAlarm

See clause 12.2.1.2.7.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.8 Notification notifyComments

See clause 12.2.1.2.8.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.9 Notification notifyPotentialFaultyAlarmList

See clause 12.2.1.2.9.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.10 Notification notifyCorrelatedNotificationChanged

See clause 12.2.1.2.10.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

##### 12.2.2.2.11 Notification notifyChangedAlarmGeneral

See clause 12.2.1.2.11.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |
| --- |
| **Next Change** |

### 12.4.2 RESTful HTTP-based solution set for integration with ONAP VES API

NOTE: Void.

#### 12.4.2.1 Mapping of operations

See clause 12.1.1.1.

#### 12.4.2.2 Mapping of notifications

##### 12.4.2.2.1 Introduction

###### 12.4.2.2.1.1 General

The 3GPP IS heartbeat notifications are mapped to SS equivalents according to table 12.4.2.2.1.1-1.

Table 12.4.2.2.1.1-1: Mapping of 3GPP IS notifications to SS equivalents

|  |  |  |  |
| --- | --- | --- | --- |
| **3GPP IS notifications** | **HTTP Method** | **Resource URI** | **SQ** |
| notifyHeartbeat | POST | /eventListener | M |

###### 12.4.2.2.1.2 Notification parameter mapping principles

3GPP IS fault supervision alarm notification parameters are mapped to solution set equivalent as follows:

##### 12.4.2.2.2 Notification notifyHeartbeat

See clause 12.4.1.2.2.

|  |
| --- |
| **Next Change** |

# A.1 Provisioning management service

### A.1.0 Introduction

Clause A.1.1 contains the OpenAPI specification of the generic provisioning MnS.

Clause A.1.2 contains the JSON schema for the content of the generic provisioning MnS notifications when the consumer of these notifications suports the ONAP VES API. This content is sent as payload of VES events (see Annex X).

The content of the notifications in both cases is the same.

|  |
| --- |
| **Next Change** |

# A.2 Generic fault supervision management service

### A.2.0 Introduction

Clause A.2.1 contains the OpenAPI specification of the generic fault supervision MnS.

Clause A.2.2 contains the JSON schema for the content of the generic fault supervision MnS notifications when the consumer of these notifications supports the ONAP VES API. This content is sent as payload of VES events (see Annex X).

The content of the notifications in both cases is the same.

|  |
| --- |
| **Next Change** |

## A.2.2 JSON schema of ‘fault3gppFields’ for integration with ONAP VES

{

 "fault3gppFields": {

 "description": "fields specific to 3GPP fault supervision notifications for integration with ONAP VES",

 "type": "object",

 "properties": {

 "fault3gppFieldsVersion": {

 "description": "version of the fault3gppFields block",

 "type": "string",

 "enum": ["16.x"]

 },

 "faultSupervisionNotifications": {

 "oneOf": [

 {"$ref": "#/definitions/notifyNewAlarm-NotifType"},

 {"$ref": "#/definitions/notifyNewSecurityAlarm-NotifType"},

 {"$ref": "#/definitions/notifyAckStateChanged-NotifType"},

 {"$ref": "#/definitions/notifyClearedAlarm-NotifType"},

 {"$ref": "#/definitions/notifyAlarmListRebuilt-NotifType"},

 {"$ref": "#/definitions/notifyChangedAlarm-NotifType"},

 {"$ref": "#/definitions/notifyComments-NotifType"},

 {"$ref": "#/definitions/notifyPotentialFaultyAlarmList-NotifType"},

 {"$ref": "#/definitions/notifyCorrelatedNotificationChanged-NotifType"},

 {"$ref": "#/definitions/notifyChangedAlarmGeneral-NotifType"}

 ]

 }

 },

 "definitions": {

 "notifyNewAlarm-NotifType": {

 "description": "fields specific to 3GPP notification NotifyNewAlarm",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "specificProblem": {

 "$ref": "#/components/schemas/specificProblem-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "backedUpStatus": {

 "$ref": "#/components/schemas/backedUpStatus-Type"

 },

 "backUpObject": {

 "$ref": "#/components/schemas/backUpObject-Type"

 },

 "trendIndication": {

 "$ref": "#/components/schemas/trendIndication-Type"

 },

 "thresholdInfo": {

 "$ref": "#/components/schemas/thresholdInfo-Type"

 },

 "correlatedNotifications": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/correlatedNotification-Type"

 }

 },

 "stateChangeDefinition": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeValueChange-Type"

 }

 },

 "monitoredAttributes": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "proposedRepairActions": {

 "$ref": "#/components/schemas/proposedRepairActions-Type"

 },

 "additionalText": {

 "$ref": "#/components/schemas/additionalText-Type"

 },

 "additionalInformation": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "rootCauseIndicator": {

 "$ref": "#/components/schemas/rootCauseIndicator-Type"

 }

 }

 }

 }

 },

 "notifyNewSecurityAlarm-NotifType": {

 "description": "fields specific to 3GPP notification NotifyNewSecurityAlarm",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "specificProblem": {

 "$ref": "#/components/schemas/specificProblem-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "correlatedNotifications": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/correlatedNotification-Type"

 }

 },

 "additionalText": {

 "$ref": "#/components/schemas/additionalText-Type"

 },

 "additionalInformation": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "rootCauseIndicator": {

 "$ref": "#/components/schemas/rootCauseIndicator-Type"

 },

 "serviceUser": {

 "$ref": "#/components/schemas/serviceUser-Type"

 },

 "serviceProvider": {

 "$ref": "#/components/schemas/serviceProvider-Type"

 },

 "securityAlarmDetector": {

 "$ref": "#/components/schemas/securityAlarmDetector-Type"

 }

 }

 }

 }

 },

 "notifyAckStateChanged-NotifType": {

 "description": "fields specific to 3GPP notification NotifyAckStateChanged",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "ackstate": {

 "$ref": "#/components/schemas/ackState-Type"

 },

 "ackUserId": {

 "$ref": "#/components/schemas/ackUserId-Type"

 },

 "ackSystemId": {

 "$ref": "#/components/schemas/ackSystemId-Type"

 }

 }

 }

 }

 },

 "notifyClearedAlarm-NotifType": {

 "description": "fields specific to 3GPP notification NotifyClearedAlarm",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "correlatedNotifications": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/correlatedNotification-Type"

 }

 },

 "clearUserId": {

 "$ref": "#/components/schemas/clearUserId-Type"

 },

 "clearSystemId": {

 "$ref": "#/components/schemas/clearSystemId-Type"

 }

 }

 }

 }

 },

 "notifyAlarmListRebuilt-NotifType": {

 "description": "fields specific to 3GPP notification NotifyAlarmListRebuilt",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "reason": {

 "$ref": "#/components/schemas/reason-Type"

 },

 "alarmListAlignmentRequirement": {

 "$ref": "#/components/schemas/alarmListAlignmentRequirement-Type"

 }

 }

 }

 }

 },

 "notifyChangedAlarm-NotifType": {

 "description": "fields specific to 3GPP notification NotifyChangedAlarm",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 }

 }

 }

 }

 },

 "notifyComments-NotifType": {

 "description": "fields specific to 3GPP notification NotifyComments",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "comments": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/comment-ResourceType"

 }

 }

 }

 }

 }

 },

 "notifyPotentialFaultyAlarmList-NotifType": {

 "description": "fields specific to 3GPP notification NotifyPotentialFaultyAlarmList",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "reason": {

 "$ref": "#/components/schemas/reason-Type"

 }

 }

 }

 }

 },

 "notifyCorrelatedNotificationChanged-NotifType": {

 "description": "fields specific to 3GPP notification notifyCorrelatedNotificationChanged",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "rootCauseIndicator": {

 "$ref": "#/components/schemas/rootCauseIndicator-Type"

 },

 "correlatedNotifications": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/correlatedNotification-Type"

 }

 },

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 }

 }

 }

 }

 },

 "notifyChangedAlarmGeneral-NotifType": {

 "description": "fields specific to 3GPP notification notifyChangedAlarmGeneral",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "alarmType": {

 "$ref": "#/components/schemas/alarmType-Type"

 },

 "alarmId": {

 "$ref": "#/components/schemas/alarmId-Type"

 },

 "probableCause": {

 "$ref": "#/components/schemas/probableCause-Type"

 },

 "perceivedSeverity": {

 "$ref": "#/components/schemas/perceivedSeverity-Type"

 },

 "rootCauseIndicator": {

 "$ref": "#/components/schemas/rootCauseIndicator-Type"

 },

 "specificProblem": {

 "$ref": "#/components/schemas/specificProblem-Type"

 },

 "correlatedNotifications": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/correlatedNotification-Type"

 }

 },

 "backedUpStatus": {

 "$ref": "#/components/schemas/backedUpStatus-Type"

 },

 "trendIndication": {

 "$ref": "#/components/schemas/trendIndication-Type"

 },

 "thresholdInfo": {

 "$ref": "#/components/schemas/thresholdInfo-Type"

 },

 "stateChangeDefinition": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeValueChange-Type"

 }

 },

 "monitoredAttributes": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "proposedRepairActions": {

 "$ref": "#/components/schemas/proposedRepairActions-Type"

 },

 "additionalText": {

 "$ref": "#/components/schemas/additionalText-Type"

 },

 "additionalInformation": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "changedAlarmAttributes": {

 "type": "array",

 "items": {

 "$ref": "#/components/schemas/attributeNameValuePair-Type"

 }

 },

 "backUpObject": {

 "$ref": "#/components/schemas/backUpObject-Type"

 }

 }

 }

 }

 },

 "header-Type": {

 "description": "Header used in notifications as notification header",

 "type": "object",

 "properties": {

 "uri": {

 "$ref": "#/components/schemas/uri-Type"

 },

 "notificationId": {

 "$ref": "#/components/schemas/notificationId-Type"

 },

 "notificationType": {

 "$ref": "#/components/schemas/notificationType-Type"

 },

 "eventTime": {

 "$ref": "#/components/schemas/dateTime-Type"

 }

 }

 },

 "probableCause-Type": {

 "type": "string"

 },

 "perceivedSeverity-Type": {

 "type": "string",

 "enum": [

 "Critical",

 "Major",

 "Minor",

 "Warning",

 "Indeterminate",

 "Cleared"

 ]

 },

 "alarmType-Type": {

 "type": "string",

 "enum": [

 "Communications Alarm",

 "Processing Error Alarm",

 "Environmental Alarm",

 "Quality Of Service Alarm",

 "Equipment Alarm",

 "Integrity Violation",

 "Operational Violation",

 "Physical Violation",

 "Security Service or Mechanism Violation",

 "Time Domain Violation"

 ]

 },

 "correlatedNotification-Type": {

 "type": "object",

 "properties": {

 "source": {

 "$ref": "#/definitions/uri-Type"

 },

 "notificationIds": {

 "type": "array",

 "items": {

 "$ref": "#/definitions/notificationId-Type"

 }

 }

 }

 },

 "ackState-Type": {

 "type": "string",

 "enum": [

 "acknowledged",

 "unacknowledged"

 ]

 },

 "ackUserId-Type": {

 "type": "string"

 },

 "ackSystemId-Type": {

 "type": "string"

 },

 "alarmId-Type": {

 "type": "string"

 },

 "specificProblem-Type": {

 "type": "string"

 },

 "rootCauseIndicator-Type": {

 "type": "boolean"

 },

 "backedUpStatus-Type": {

 "type": "boolean"

 },

 "backUpObject-Type": {

 "$ref": "#/definitions/uri-Type"

 },

 "trendIndication-Type": {

 "type": "string",

 "enum": [

 "More severe",

 "No change",

 "Less severe"

 ]

 },

 "thresholdInfo-Type": {

 "type": "object",

 "properties": {

 "attributeName": {

 "type": "string"

 },

 "observedValue": {

 "$ref": "#/definitions/float-Type"

 },

 "thresholdLevel": {

 "$ref": "#/definitions/thresholdLevel-Type"

 },

 "armTime": {

 "$ref": "#/definitions/dateTime-Type"

 }

 }

 },

 "thresholdLevel-Type": {

 "type": "object",

 "properties": {

 "indication": {

 "$ref": "#/definitions/indication-Type"

 },

 "low": {

 "$ref": "#/definitions/float-Type"

 },

 "high": {

 "$ref": "#/definitions/float-Type"

 }

 }

 },

 "dateTime-Type": {

 "type": "string",

 "format": "date-Time"

 },

 "float-Type": {

 "type": "string",

 "format": "float"

 },

 "indication-Type": {

 "type": "string",

 "enum": [

 "Up",

 "Down"

 ]

 },

 "attributeValueChange-Type": {

 "type": "object",

 "properties": {

 "attributeName": {

 "type": "string"

 },

 "oldAttributeValue": {},

 "newAttributeValue": {}

 }

 },

 "attributeNameValuePair-Type": {

 "type": "object",

 "properties": {

 "attributeName": {

 "type": "string"

 },

 "attributeValue": {}

 }

 },

 "proposedRepairActions-Type": {

 "type": "string"

 },

 "additionalText-Type": {

 "type": "string"

 },

 "serviceProvider-Type": {

 "type": "string"

 },

 "serviceUser-Type": {

 "type": "string"

 },

 "securityAlarmDetector-Type": {

 "type": "string"

 },

 "clearSystemId-Type": {

 "type": "string"

 },

 "clearUserId-Type": {

 "type": "string"

 },

 "reason-Type": {

 "type": "string"

 },

 "comments-Type": {

 "type": "string"

 },

 "dN-Type": {

 "type": "string"

 },

 "systemDN-Type": {

 "type": "string"

 },

 "notificationType-Type": {

 "type": "string",

 "enum": [

 "notifyNewAlarm",

 "notifyNewSecurityAlarm",

 "notifyAckStateChanged",

 "notifyClearedAlarm",

 "notifyAlarmListRebuilt",

 "notifyChangedAlarm",

 "notifyComments",

 "notifyPotentialFaultyAlarmList",

 "notifyCorrelatedNotificationChanged",

 "notifyChangedAlarmGeneral"

 ]

 }

 }

}

}

|  |
| --- |
| **Next Change** |

# A.5 Heartbeat

### A.5.0 Introduction

Clause A.5.1 contains the OpenAPI specification of the heartbeat management capability.

Clause A.5.2 contains the JSON schema for the content of the heartbeat management capability notifications when the consumer of these notifications supports the ONAP VES API. This content is sent as payload of VES events (see Annex X).

The content of the notifications in both cases is the same.

|  |
| --- |
| **Next Change** |

### A.5.2 Heartbeat for integration with ONAP VES

NOTE: Void.

{

 "heartbeat3gppFields": {

 "description": "fields specific to 3GPP heartbeat notifications for integration with ONAP VES",

 "type": "object",

 "properties": {

 "heartbeatFieldsVersion": {

 "description": "version of the heartbeat3gppFields block",

 "type": "string",

 "enum": ["16.x"]

 },

 "heartbeatNotifications": {

 "oneOf": [

 {"$ref": "#/definitions/notifyHeartbeat-NotifType"}

 ]

 }

 },

 "definitions": {

 "notifyHeartbeat-NotifType": {

 "description": "fields specific to 3GPP notification NotifyHeartbeat",

 "type": "object",

 "properties": {

 "header": {

 "$ref": "#/components/schemas/header-Type"

 },

 "body": {

 "type": "object",

 "properties": {

 "systemDN": {

 "$ref": "#/components/schemas/systemDN-Type"

 },

 "heartbeatPeriod": {

 "$ref": "#/definitions/heartbeatPeriod-Type"

 },

 "additionalProperties": false,

 "required": [ "heartbeatPeriod" ]

 },

 "dN-Type": {

 "type": "string"

 },

 "systemDN-Type": {

 "type": "string"

 },

 "triggerFlag-Type": {

 "type": "string",

 "enum": [

 "MnSConsumer",

 "HBMnSProvider"

 ]

 },

 "hBMnSConsumerRef-Type": {

 "type": "string"

 }

 }

 }

 }

 },

 "header-Type": {

 "description": "Header used in notifications as notification header",

 "type": "object",

 "properties": {

 "uri": {

 "$ref": "#/components/schemas/uri-Type"

 },

 "notificationId": {

 "$ref": "#/components/schemas/notificationId-Type"

 },

 "notificationType": {

 "$ref": "#/components/schemas/notificationType-Type"

 },

 "eventTime": {

 "$ref": "#/components/schemas/dateTime-Type"

 }

 }

 },

 "uri-Type": {

 "type": "string"

 },

 "notificationId-Type": {

 "$ref": "#/components/schemas/long-Type"

 },

 "notificationType-Type": {

 "type": "string",

 "enum": [

 "notifyHeartbeat"

 ]

 },

 "long-Type": {

 "type": "string",

 "format": "long"

 },

 "dateTime-Type": {

 "type": "string",

 "format": "date-Time"

 }

 }

}

|  |
| --- |
| **Next Change** |

Annex X (Informative):
Guidelines for the integration of 3GPP MnS notifications with ONAP VES

In case the consumer of the 3GPP MnS notifications specified in the present document is an ONAP VES collector, the following guidelines are for the developer of the corresponding 3GPP MnS notification producer:

- The produced notification conforms to ONAP-defined VES specification;

- The VES Common Event Header fields are populated by the producer is as follows:

- The domain ‘stndDefined’ is used,

- The ‘stndDefinedNamespace’ field value is the concatenation of ‘3GPP-‘ and the name of the 3GPP MnS which the 3GPP IS notification is part of. In this version of this document, allowed values are:

- ‘3GPP-Provisioning’,

- ‘3GPP-FaultSupervision’,

- ‘3GPP-PerformanceAssurance’,

- ‘3GPP-Heartbeat’,

- How the other fields of the Common Event Header are populated is not in the scope of the present document;

- The payload part of the VES event specification conforms to definitions of clause A.1.2 (for provisioning MnS notifications), A.2.2 (for the fault supervision MnS notifications) and A.5.2 (for the heartbeat notifications) of the present document.



Figure X-1. 3GPP MnS notifications consumed by ONAP VES Collector(s).

|  |
| --- |
| **End of changes** |