

Bronze use case: Health-Check

In the Bronze release, the following use case will be supported by SMO supporting O1 interface.

Related **YANG** data modules in [scp/oam/modeling](https://oam.modeling).

[Health-Check Use Case](#) (entire use case)

[O1 Managed Function \(O-CU/O-DU/O-RU\) Health-Check \(Flow #4\)](#)
(focus on O1 interface)

For the part "O1 MF health status retrieval" a common **yang module** is required. O-RAN Alliance WG4 developed a yang module for this purpose called "o-ran-fm.yang".

In order to give all the O-RAN Alliance working groups and O-RAN-SC project the flexibility to define the alarms/faults needed for their domain, yang provides mechanisms to add items to an extensible enum - called identities.

Those yang capabilities will be exposed by NetConf-Servers to NetConf-Client(s) on SMO in the NetConf Hello-Message so that SMO can learn the supported alarms by each of the different components.

Instructions how to create such yang are described in <https://tools.ietf.org/html/rfc8632> - see "Appendix A. Vendor-Specific Alarm Types Example" and think of "O-RAN-Managed-Function-Specific" instead of "Vendor-Specific".

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AlarmList

Under discussion with O-RAN Alliance - the alarm-list compared to RFC8632

```
...
ro alarm-list
| + ro number-of-alarms? yang:gauge32
| + ro last-changed? yang:date-and-time
| +ro alarm* [resource alarm-type-id alarm-type-qualifier]
| | +ro resource resource
| | +ro alarm-type-id alarm-type-id
| + ro alarm-type-qualifier alarm-type-qualifier
| | +ro alt-resource* resource
| | +ro related-alarm* [resource alarm-type-id alarm-type-qualifier] {alarm-correlation}?
| | | +ro resource -> /alarms/alarm-list/alarm/resource
| | | +ro alarm-type-id -> /alarms/alarm-list/alarm/resource=current()/../resource/alarm-type-id
| | | +ro alarm-type-qualifier -> /alarms/alarm-list/alarm/resource=current()/../resource/alarm-type-id=current()/../alarm-type-id/alarm-type-qualifier
| | +ro impacted-resource* resource {service-impact-analysis}?
| | +ro root-cause-resource* resource {root-cause-analysis}?
| | +ro time-created yang:date-and-time
| + ro is-cleared boolean
| + ro last-raised yang:date-and-time
| + ro last-changed yang:date-and-time
| | +ro perceived-severity severity
```

Mapping YANG to VES

VES format:

https://gerrit.onap.org/r/gitweb?p=dcaegen2/collectors/ves.git;a=blob;f=etc/CommonEventFormat_30.0.1.json;h=49c7f9320b7aad6dee22ccb4fc401c81521142bd;hb=7547ad7dbd45fff19c948da675ab09d72775f973

VES	NetConf Alarm
ves:eventSeverity	severity
ves:eventSeverity = NORMAL	is-cleared = true
ves:faultFields:alarmCondition	yang-model namespace + ":" + alarm-type-id
ves:faultFields:alarmAdditionalInformation	description of alarm-type-id

```

| | +-ro alarm-text alarm-text
| | | +-ro status-change? [time] {alarm-history}?
| | | | +-ro time yang:date-and-time
| | | | +-ro perceived-severity severity-with-clear
| | | | +-ro alarm-text alarm-text
| | | +-ro operator-state-change? [time] {operator-
actions}?
| | | | +-ro time yang:date-and-time
| | | | +-ro operator-string
| | | | +-ro state operator-state
| | | | +-ro text? string
| | | +-x set-operator-state {operator-actions}?
| | | | +-w input
| | | | +-w state writable-operator-state
| | | | +-w text? string
| | | +-n operator-action {operator-actions}?
| | | | +-time yang:date-and-time
| | | | +-operator-string
| | | | +-state operator-state
| | | | +-text? string
| | +-x purge-alarms
| | | +-w input
| | | | +-w alarm-clearance-status enumeration
| | | | +-w older-than!
| | | | | +-w (age-spec)?
| | | | | | +-!(seconds)
| | | | | | +-w seconds? uint16
| | | | | | | +-!(minutes)
| | | | | | +-w minutes? uint16
| | | | | | | +-!(hours)
| | | | | | +-w hours? uint16
| | | | | | | +-!(days)
| | | | | | +-w days? uint16
| | | | | | | +-!(weeks)
| | | | | | +-w weeks? uint16
| | | | | +-w severity!
| | | | | | +-w (sev-spec)?
| | | | | | | +-!(below)
| | | | | | +-w below? severity
| | | | | | | +-!(is)
| | | | | | +-w is? severity
| | | | | | | +-!(above)
| | | | | +-w above? severity
| | | | +-w operator-state-filter! {operator-actions}?
| | | +-w state? operator-state
| | | +-w user? string
| | +-ro output
| | | +-ro purged-alarms? uint32
| +-x compress-alarms {alarm-history}?
| | +-w input
| | | +-w resource? resource-match
| | | +-w alarm-type-id? -> /alarms/alarm-list/alarm
/alarm-type-id
| | | +-w alarm-type-qualifier? -> /alarms/alarm-list
/alarm/alarm-type-qualifier
| | +-ro output
| +-ro compressed-alarms? uint32

```

...