

I-Release

blocked URL

(<https://en.wikipedia.org/wiki/I>)

Table of Contents

- [Target](#)
 - [Specifications](#)
 - [VES JSON-Schemas](#)
 - [Reference to docker images](#)

Sub pages

The OAM project focus on the following topics:

Provide complete implementation for OAM functions (FCAPS).

Target

- support of O-RAN WG10 VES message bodies
- support of O-RAN WG4 optional VES bodies
- update of OAM-Controller to ODL version Argon-SR1
- support of other O-RAN-SC projects (e.g. SMO, Non-RT-Ric, O-DU, INT) based on RSAC and other input.
- intergration of wireshark for api analysis
- integration of jenkins for test-automation

Specifications

The following Specifications needs to be considered for software updates:

<https://orandownloadswb.azurewebsites.net/specifications>

- **O-RAN Architecture Description 9.0 - June 2023**
O-RAN.WG1.OAD-R003-v09.00
- **O-RAN Use Cases Detailed Specification 11.0 - June 2023**
O-RAN.WG1.Use-Cases-Detailed-Specification-R003-v11.00
- **O-RAN Operations and Maintenance Architecture 9.0 - June 2023**
O-RAN.WG10.OAM-Architecture-R003-v09.00
- **O-RAN Operations and Maintenance Interface Specification 10.0 - June 2023**
O-RAN.WG10.O1-Interface.0-R003-v10.00
- **O-RAN Management Plane Specification 12.0 - June 2023**
O-RAN.WG4.MP.0-R003-v12.00
- **O-RAN Management Plane Specification - YANG Models 12.0 - June 2023**
O-RAN.WG4.MP-YANGs-R003-v12.00
- **O-RAN Conformance Test Specification 8.0 - June 2023**
O-RAN.WG4.CONF.0-R003-v08.00 (just management-plane)
- **O-RAN O1 Interface specification for O-DU 7.0 - June 2023**
O-RAN.WG5.O-DU-O1.0-R003-v07.00
- **O-RAN O1 Interface specification for O-CU-UP and O-CU-CP 5.0 - June 2023**
O-RAN.WG5.O-CU-O1.0-R003-v05.00
- **O-RAN O1 Interface for O-DU 6.0 - YANG Models - March 2023**
O-RAN.WG5.O-DU-O1.0-R003-v06.00-YANGs
- **O-RAN O1 Interface for O-DU 6.0 - configuration tables - March 2023**
O-RAN.WG5.O-DU-O1.0-R003-v06.00-AnnexD
- **O-RAN O1 Interface for O-CU-UP and O-CU-CP - YANG Models 4.0 - October 2022**
O-RAN.WG5.O-CU-O1.0-YANGs-v04.00
- **O-RAN Management interfaces for Transport Network Elements 6.0 - June 2023**
O-RAN.WG9.XTRP-MGT.0-R003-v06.0

VES JSON-Schemas

- [ONAP VES 7.2.1](#)
- [3GPP TS 28.532 V17.1.1](#)
(according to O-RAN Operations and Maintenance Interface Specification 10.0 and its 'Harmonized VES format')
 - Annex B (Informative):
Guidelines for the integration of 3GPP MnS notifications with ONAP VES
 - Configuration Management Notifications
 - **notifyMOIAttributeValueChanges**
 - **notifyMOICreation**
 - **notifyMOIDeletion**
 - **notifyMOIChanges**
 - Fault Management Notifications
 - **notifyNewAlarm**
 - **notifyChangedAlarmGeneral** and/or
 - [notifyChangedAlarm](#)
 - [notifyCorrelatedNotificationChanged](#)
 - [notifyAckStateChanged](#)
 - **notifyClearedAlarm**
 - **notifyAlarmListRebuilt**
 - FileReady Notification (as part of Performance Monitoring)
 - **notifyFileReady**
 - PM Streaming
 - based on WebSockets and ASN.1 (no contributions expected)

- Software Management
 - 3GPP-specified notifyFileDownload vs O-RAN-specified o1NotifyFileDownload
 - Heartbeat
 - **notifyHeartbeat**
- O-RAN Operations and Maintenance Interface Specification 10.0 June 2023
 - PNF Registration
 - **o1NotifyPNFRegistration**
Idea: WordTable YANG OpenAPISpecification
 - CNF Registration
 - **o1NotifyCloudNFRegistration**
(reference to: 'O-RAN Information Model and Data Models Specification' which does not include o1NotifyCloudNFRegistration yet)
- [O-RAN Management Plane Specification 12.0 June 2023](#)
- [O-RAN-SC PM-Measurement streaming](#)

Function	Source of Data model O-RAN-SC
Fault	3GPP: _3gpp-common-fm (Fallback from Bronze RFC8632: ietf-alarms)
Configuration	(see next lines)
• interfaces and /or termination points	O-RAN-FH: RFC8343: ietf-interfaces 3GPP:
• synchronization	(see next lines)
-- Network Time Protocol	RFC7317: ietf-system.yang
-- Precision Time Protocol	RFC8575: ietf-ptp.yang (check if new IEEE standard was adopted)
• DCN ◦ OAM IF	
• Ethernet OAM	• Loopback config • Link supervision
• others	to be updated based on SDO progress
Accounting	not scope of O-RAN and O-RAN-SC - listed just for completeness of FCAPS
Performance	3GPP-xml, file, VES
Security	(see next lines)
• Protocol TLS (for Rest, RestConf and NetConf)	RFC8446: Transport Layer Security
• User Management	RFC7317: ietf-system.yang Open: o-ran-user-management
Inventory (hardware)	RFC8348: ietf-hardware.yang and iana-hardware.yang and of cause o-ran-hardware@2019-07-03.yang for the O-RAN identities. Open: only for O-RU and O-DU; O-DU anyhow optional

Software Management	Management interfaces: • xran-software-management.yang • o-ran-software-management.yang • 3GPP and/or o-ran-o1 software-management (once exists) • OpenROADM manifest file Use case: Start with and xRan-fronthaul radio unit and perform and upgrade to an o-ru with the OpenFronthaul M-plane and upgrade further to an O-RU with an O-RAN/3GPP common O1 management interface.
Backup and restore	OpenROADM manifest file
xApp onboarding (from O1 point of view)	under development by WG2 and Near-RT-RIC project
Subscription for VES	_3gpp-common-subscription-control Open: RFC8639: ietf-subscribed-notifications augmented by opnfv-ves-push.yang

Reference to docker images

SMO Area	Short name	Image	Version
oam	(oam-)controller	nexus3.onap.org:10001/onap/sdnc-image	2.4.2
oam	odlux	nexus3.onap.org:10001/onap/sdnc-web-image	2.4.4
oam	ves-collector	nexus3.onap.org:10001/onap/org.onap.dcaeagen2.collectors.ves.vescollector	1.10.1
common	gateway	traefik	v2.9
common	identity	bitnami/keycloak	18.0.2
common	identitydb	bitnami/postgresql	13
common	persistence	docker.elastic.co/elasticsearch/elasticsearch-oss	7.9.3
common	topology	nexus3.o-ran-sc.org:10002/o-ran-sc/smo-nts-ng-topology-server	1.5.2
common	messages	nexus3.onap.org:10001/onap/dmaap/dmaap-mr	1.1.18
common	kafka-bridge	quay.io/strimzi/kafka-bridge	0.25.0
common	kafka	nexus3.onap.org:10001/onap/dmaap/kafka111	1.0.4
common	zookeeper	nexus3.onap.org:10001/onap/dmaap/zookeeper	6.0.3
apps	flows	nodered/node-red	v3.0.2
apps	wireshark	lscr.io/linuxserver/wireshark	4.0.6
apps	jenkins	jenkins/jenkins	2.401.2-lts-jdk11