O-RAN A1 Policies in ONAP

KEY INFORMATION

Gerrit: repo: *https://gerrit.onap.org/r/admin/repos/ccsdk/oran*

Meetings: https://wiki.o-ran-sc.org/display/RICNR/Meetings & ONAP/O-RAN-SC/SMO Meetings

Docs: *https://docs.onap.org/projects/onap-ccsdk-oran/en/latest/index.html*

Email List: ONAP "discuss" mailing list: onap-discuss@lists.onap.org

Related work in OSC: https://wiki.o-ran-sc.org/display/RICNR

JIRA (Epics):

- **CCSDK-2475** - Getting issue details... STATUS
- **CCSDK-2476** - Getting issue details... STATUS
- **CCSDK-2991** - Getting issue details... STATUS
- **CCSDK-3229** - Getting issue details... STATUS
- **CCSDK-3463** - Getting issue details... STATUS
- **CCSDK-3617** - Getting issue details... STATUS
- **CCSDK-3809** - Getting issue details... STATUS
- **CCSDK-3909** - Getting issue details... STATUS
- **CCSDK-3965** - Getting issue details... STATUS

Requirements (Older):

- **REQ-38** - Getting issue details... STATUS (Frankfurt)
- **REQ-352** - Getting issue details... STATUS (Guilin)
- **REQ-457** - Getting issue details... STATUS (Honolulu
- **REQ-722** - Getting issue details... STATUS (Istanbul)
- **REQ-1045** - Getting issue details... STATUS (Jakarta)
- **REQ-1256** - Getting issue details... STATUS (Kohn)
- **REQ-1391** - Getting issue details... STATUS (London)

PROPOSALS BY RELEASE

The following table shows the progression of the O-RAN A1 Policy functions by release.

RELEASE	WIKI PAGE
R6 Frankfurt	A1 Adapter in ONAP

R7 Guilin	ONAP/3GPP & ORAN Alignment: A1 Adapter extensions
R8 Honolulu	R8 A1 Adapter and Policy Management Extension
R9 Istanbul	R9 A1 Policy Function Extensions
R10 Jakarta	R10 Proposals: A1 Policy Function Extensions

GUIDES & DOCS BY RELEASE

The following table shows the developer guides and documentation sites for the O-RAN A1 Policy functions.

RELEASE	WIKI PAGE	Docs
R7 Guilin (Q4 2020)	O-RAN A1 Policies in ONAP Guilin	
R8 Honolulu (Q2 2021)	O-RAN A1 Policies in ONAP Honolulu	
R9 Istanbul (Q4 2021)	O-RAN A1 Policies in ONAP Istanbul	https://docs.onap.org/projects/onap-ccsdk-oran/en/istanbul/
R10 Jakarta (Q2 2022)	O-RAN A1 Policies in ONAP Jakarta	https://docs.onap.org/projects/onap-ccsdk-oran/en/jakarta/
R10 Kohn (Q4 2022)	O-RAN A1 Policies in ONAP Kohn	https://docs.onap.org/projects/onap-ccsdk-oran/en/kohn
R11 London (Q2 2023)	O-RAN A1 Policies in ONAP London	https://docs.onap.org/projects/onap-ccsdk-oran/en/london/
R12 Montreal (Q4 2023)	O-RAN A1 Policies in ONAP Montreal	https://docs.onap.org/projects/onap-ccsdk-oran/en/montreal/
R13 New Delhi	O-RAN A1 Policies in ONAP New Delhi	https://docs.onap.org/projects/onap-ccsdk-oran/en/latest/

DESCRIPTION

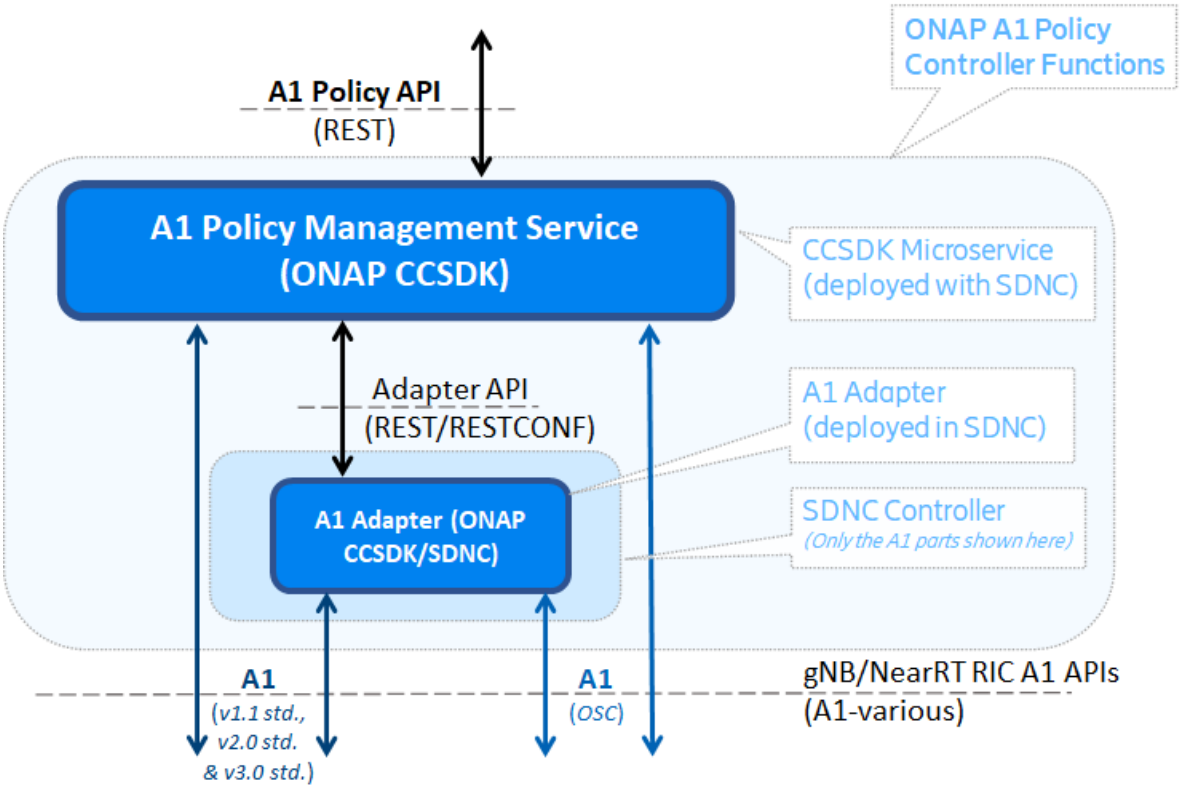
The O-RAN Alliance defines a new management interface "**A1**" for Radio Access Network (RAN) Management. This interface interconnects a new logical "Non-RealTime RAN Intelligent Controller (Non-RT-RIC)" function in the Service Management & Orchestration (SMO) layer with a new logical "Near-RealTime RAN Intelligent Controller (near-RT-RIC)" function in the RAN. This new A1 interface allows the Non-RT-RIC to provide Policy Guidance to the RAN (near-RT-RIC) to steer its operation. These policies are defined by the O-RAN Alliance as "**A1 Policies**". The specifications for the A1 Interface, including A1 Policy support, can be found on the O-RAN Alliance Specifications portal

New functions to support A1 Policies have been added to ONAP. The A1 Policy functions are Orchestration and Automation functions for non-real-time intelligent management of RAN functions. The primary goal of the A1 Policy functions is to support non-real-time radio resource management, higher layer procedure optimization, policy optimization in RAN, and providing guidance, parameters, policies and AI/ML models to support the operation of Near-RealTime RIC (RAN Intelligent Controller) functions in the RAN to achieve higher-level non-real-time objectives.

A1 Policy functions form part of a Non-Realtime RIC as defined by O-RAN Alliance. Non-Realtime RIC functions include service and policy management, RAN analytics, and model-training for the Near-RealTime RICs. The ONAP A1 Policy work provides concepts, specifications, architecture and reference implementations for A1 Policy support as defined and described in the O-RAN architecture.

As shown in the Component Architecture diagram below, the A1 Policy functions exist within the ONAP eco-system, leveraging existing infrastructure to support non-real-time control of the RAN (Radio Access Network).

Functional view of ONAP A1 Policy functions



The figure above shows a functional view of the A1 Policy functions in ONAP.

GERRIT

- (ONAP) A1 Policy functions: ***https://gerrit.onap.org/r/admin/repos/ccsdk/oran***
- (OSC) sim/a1-interface: *https://gerrit.o-ran-sc.org/r/admin/repos/sim/a1-interface*