

O-RAN Software Community Integration and Testing

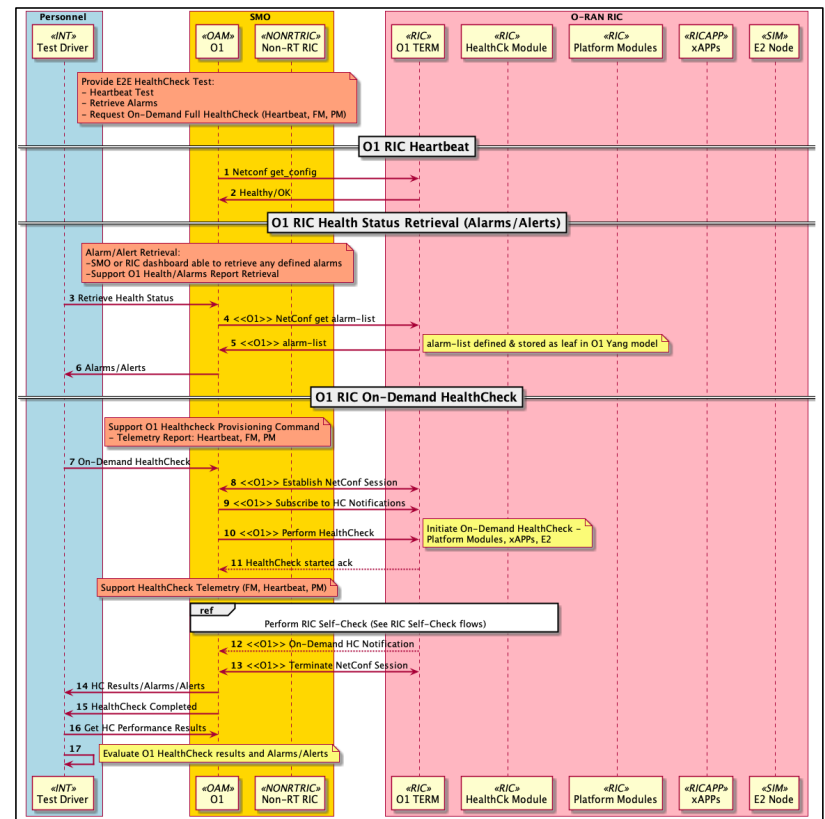
2020-02-22

Bronze Release Objectives

- Supporting RSAC use cases (<https://wiki.o-ran-sc.org/display/RSAC/Contributions>)
 - Health check
 - monitoring and reporting of the health of the Open RAN
 - Traffic Steering
 - Intelligently steering traffic among multiple cells, via a closed-loop UE-level performance monitoring and control, for improving UE QoE
- CICD development/testing experience

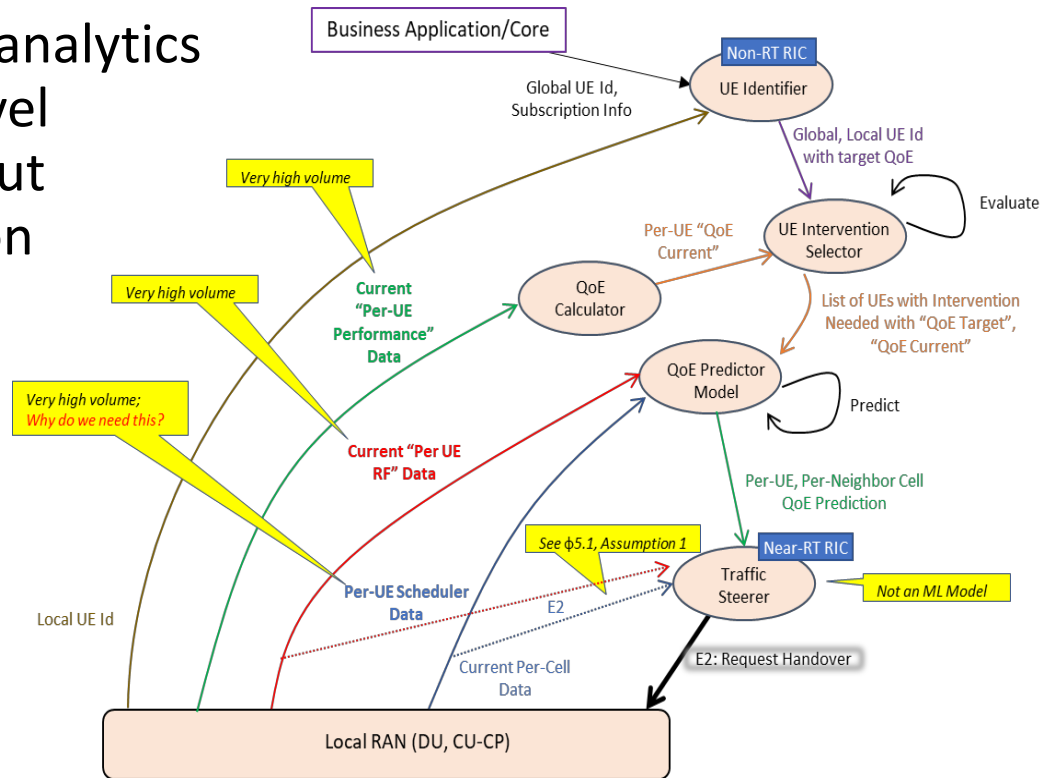
Healthcheck

- Use case:
 - O-RAN Components to perform periodic self-health-checks
 - O-RAN system to support on-demand health-checks and queries
 - Report alarms, alerts and other data based on health-check results
- In-scope components
 - SMO (Non-RT RIC / OAM)
 - Near RT RIC
 - External RIC interfaces (O1, A1, E2),
 - xAPPs deployed on RIC,
 - RAN (i.e., O-CU, O-DU, O-RU).
 - O-CU can be further subcategorized into O-CU-UP and O-CU-CP for specific health-checks.
 - OTF as UI trigger for on-demand check



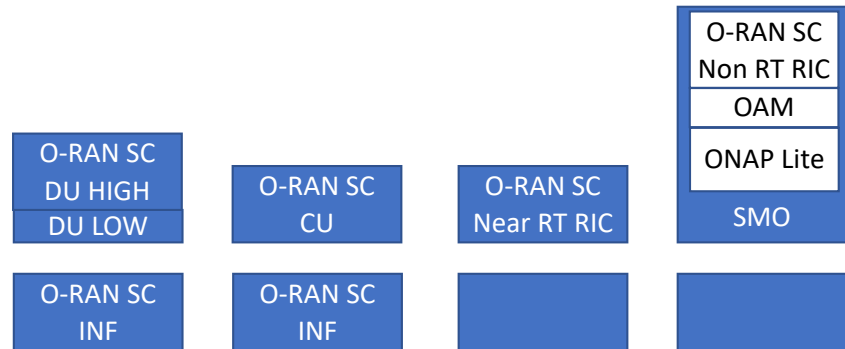
Traffic Steering

- Using ML based predictive analytics algorithm to provide UE-level average UE PDCP throughput monitoring and optimization
- Involved components
 - Non RT RIC
 - Near RT RIC
 - CU (CP)
 - DU
 - SIM



Bronze INT Deployment/Integration Epics

- Deploy Bronze Near RT RIC
- Deploy Bronze SMO
 - ONAP Lite: VES, DMaaP, Portal (AAF), SDN-C/SDN-R, Policy GUI
 - Non RT RIC
 - OAM
 - RIC Dashboard
 - Kibana
- Deploy Bronze Simulations
 - E2
 - O1
- Deploy Bronze O-DU HIGH
- Deploy Bronze O-DU LOW
- Deploy Bronze O-CU
- Deploy Bronze Infrastructure



CICD Objectives

- What Amber achieved: a set of Jenkins jobs are defined for each gerrit repos.
 - Verify job: triggered by new code submission, performing a code build and unit test run in a docker container
 - Merge job: triggered by committers merging code onto master branch, performing a code build and unit test run in a docker container and pushing build result to artifact repo
 - Release job: triggered by a new change in the “release” or “.release” directory, performing a push of artifact from staging repo to release repo
 - SONAR job (some repos): run static code analysis and scan, push report to sonarcloud.io
- Objectives for Bronze
 - SONAR job for all language
 - CI based integrated testing
 - Test plan for
- Community lab for inter-project testing and demo
 - OWL
 - Azure
 - Community help greatly appreciated

Bronze INT CICD Epics

- CICD
 - Static code analysis quality reporting: SONAR Cloud integration
 - C/C++ repos
 - Java repos
 - Python repos
 - Go repos
 - Jenkins based Integrated System Testing
 - Near RT RIC Platform
 - BOM based testing flow
 - Deployment of Bronze components in OWL (Rutger)
 - Deployment in Bronze components in Azure VM environment

Bronze INT OTF Epics (In progress)

- Objectives
 - Supporting use case testing