

Poznań, Poland, 13.09.2022 r.

Rimedo Labs integrates QoS-based Resource Allocation xApp (QRA-xAPP) with ONF's Open Source SD-RAN Project

Rimedo Labs has integrated a new xApp into the SD-RAN near real-time RIC from ONF to complement the previously provided algorithm by enabling control of O-DU functionality, namely scheduler. This is the second Rimedo's xApp integrated with the ONF's SD-RAN platform utilizing the AI interface for policy control. As part of the ONF's SD-RAN project, the joint collaboration supports a broad range of automation services in the form of software services, called xApps by O-RAN, that run on the RAN intelligent controller (RIC).

Rimedo Labs, a provider of xApps and consulting services in the area of O-RAN, joined the Open Networking Foundation (ONF) last year. As a member of the ONF, Rimedo Labs contributes to the Software-Defined Radio Access Network (SD-RAN™) project which includes a community comprised of leading operators and technology companies focusing on building open source components for the Open RAN space in compliance with the O-RAN Alliance's architecture and specifications. The key element of the SD-RAN project is the development of an open-source Near-Real-Time RAN Intelligent Controller (Near RT-RIC) along with a set of exemplar xApps for controlling the RAN.

As part of SD-RAN version 1.4, Rimedo Labs implemented the QoS-based Resource Allocation (QRA) xApp with an aim of dynamic allocation of radio resources. Within each slice different user demands on QoS can be distinguished in more detail due to the introduction of QoS flows. While each 5G cell has defined radio resources, it is an important task to effectively allocate them to network slices, in order to meet the SLAs, and individual QoS flow requirements, e.g., minimum required user throughput, packet loss rate and maximum delay. An efficient approach to this challenge is to split the radio resources dynamically according to the actual traffic demands. The Rimedo Labs xApp dynamically controls the quota of Physical Resource Blocks (PRBs) that should be allocated to the different network slices to meet the SLA requirements and at the same time, adjust them, depending on the temporary traffic demand. The xApp sends the E2 commands to the O-DU, where the Medium Access Control (MAC) scheduler operates, to control the policy for slice management (see Fig. 1). The policies, by which the QRA-xApp is controlled, are provided through the AI interface represented by AI Termination (AIT) component of the SD-RAN environment. The AIP messages are implemented based on O-RAN Alliance specifications.

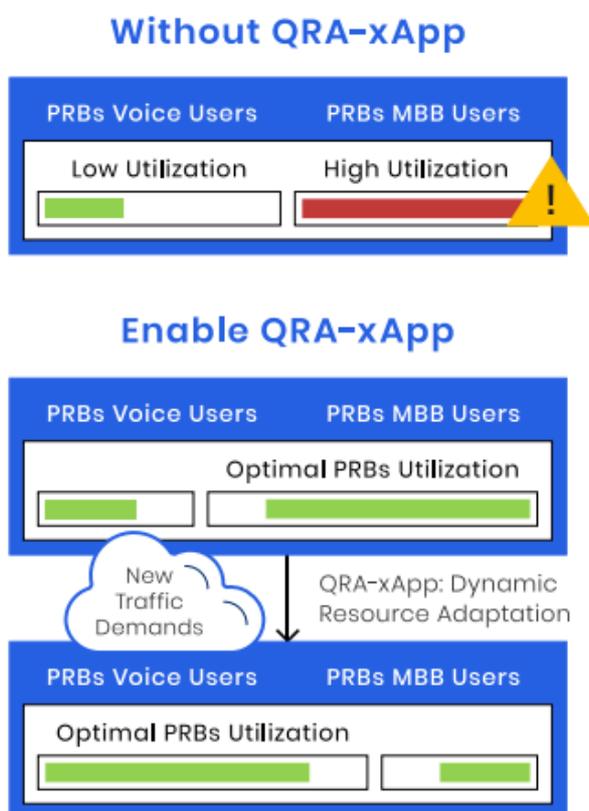


Fig. 1. Example of the QRA-xApp operation

“It is great to have Rimedo Labs as a member of the SD-RAN community. Rimedo has developed a level of xApp expertise and mastery of the SD-RAN environment that is enabling them to play an important role in bringing innovative xApps to market. Their most recent QoS-Based Resource Allocation xApp helps deliver on the vision of dynamic network slicing, and we are delighted to see them continuing to bring this type of innovation to the SD-RAN ecosystem.”

Timon Sloane, General Manager, ONF.

“Making hay while the sun shines, Rimedo focused on enriching its xApp portfolio focusing this time on the lower level of the protocol stack. Quality-of-Service based Resource Allocation, shortly QRA, by assumption impacts the near real-time applications and again it benefits from the SD-RAN environment. Integration of QRA was enabled by the earlier implementation of TS and our experience, which made it smooth and straightforward once you know the platform. Contrary to TS, which controls the O-CU-CP functions (RRC), QRA aims at scheduler control sitting at the O-DU. Thus, these two xApps are complementing each other.”

dr Adrian Kliks, CTO, Rimedo Labs.

QRA-xApp Features:

- addresses the use case of RAN Slice SLA Assurance as identified by the O-RAN Alliance. The main objective of the use case is to optimize resource allocation to fulfill Service Level Specifications (SLS);
- can be used by MNOs to improve the radio resource utilization through dynamic adaptation of PRBs quota within network slices;
- is suitable for radio resource management in heterogeneous networks, e.g., small cells can be configured to prioritize Mobile Broadband services (like video streaming), while macro cells can be configured to prioritize voice users;

- can be adapted to the use-case of QoS-based resource optimization as defined by the O-RAN Alliance, by setting UE-oriented priority levels to meet the QoS Flow requirements;
- the radio resource allocation can be driven either by the policies defined by the MNOs or independently by the internal intelligence of QRA-xApp, i.e., Machine Learning.

The technical specification of QRA-xApp is available at: [O-RAN QoS-based Resource Allocator xApp - Technical Specification](#)

The demo video of the QRA-xApp operation is available at: [Rimedo Labs QoS-based Resource Allocator xApp on ONF's SD-RAN \(DEMO\)](#)



Rimedo Labs integrates QRA-xApp into ONF SD-RAN

 Rimedo Labs integrates QoS-based Resource Allocation xApp with ONF's SD-RAN Project



www.rimedolabs.com



All things wireless. ●

More resources

- You can find details about Rimedo Labs' integration of another xApp with ONF SD-RAN, namely Traffic Steering xApp, here: [Rimedo Labs to Integrate and Open Source TS xApp with ONF's SD-RAN](#)
- You can download Rimedo Labs' [Open RAN xApp portfolio here](#).

About Rimedo Labs

RIMEDO Labs specializes in providing high-quality and substantive consulting, implementation, and R&D services in the field of modern wireless systems. We implement this through an individual and open approach to the client, constantly improving the team operationally and substantively, updating knowledge and a unique combination of science and business applications. RIMEDO Labs is a spin-off from the Poznan University of Technology, Poland from the Institute of Radiocommunications. In addition to the industrial and implementation projects using a licensed know-how solution in the field of effective allocation of resources in wireless networks, RIMEDO Labs also provides consulting and education in the field of O-RAN. The company's clients and partners are and can be both domestic and foreign entities with various profiles. For more information, please visit <https://www.rimedolabs.com/>

RIMEDO Labs

ul. Polanka 3, 61-131 Poznań, Poland

Tel.: +48 61 665 38 17

rimedolabs.com

info@rimedolabs.com

About the Open Networking Foundation

The Open Networking Foundation (ONF) is an operator-led consortium spearheading disruptive network transformation. Now the recognized leader for open-source solutions for operators, the ONF first launched in 2011 as the standard bearer for Software Defined Networking (SDN). Led by its operator partners AT&T, China Unicom, Deutsche Telekom, Google, NTT Group and Türk Telekom, the ONF is driving vast transformation across the operator space. For further information, visit <https://www.opennetworking.org/>