

Senior Software Developer - Radio Access Network (RAN)

About the Aether Project (<https://www.opennetworking.org/aether/>)

Aether is the first open source Enterprise 5G/LTE Edge-Cloud-as-a-Service platform (ECaaS). It is an operational platform while under development with sites connected globally being updated daily through CI/CD processes.

It provides mobile connectivity and edge cloud services for distributed enterprise networks, all provisioned and managed from a centralized cloud. Aether is an open source platform optimized for multi-cloud deployments, and it simultaneously supports wireless devices over licensed, unlicensed and lightly-licensed (CBRS) spectrum.

Aether [announcement](#) and [white paper](#).

About the role

ONF is adding a key role to its small development team to work very closely with universities, operators, and vendors in their Aether deployments. A key component of Aether is the Radio Access Network (RAN) which is in the process of being disaggregated to run natively in a multi-cloud deployment. The role is on the Aether development team, contributing to the open source codebase of the project. It is a great opportunity to immerse yourself in the world of 5G/Connected Edge Cloud while learning about and building modern cloud infrastructure through cutting edge technologies.

- It is a hands-on role, spending most time developing open source software.
- The candidate will become an expert in the Aether code base.
- Activities in the role span development, deployment, functional and unit testing - it is a mid to senior level role with growth opportunity within the team.

Background desired:

We are looking for an experienced L2-L3 RAN stack software engineer to implement advanced algorithms on general purpose processors. We are looking for proficient candidates in the 3GPP and O-RAN specifications-based 4G and 5G stack.

Mandatory Requirements

- Must have significant hands on experience implementing LTE/5G-NR RRC, SDAP, and PDCP layer procedures on eNB/gNB/CU side
- Excellent C/C++/Go programming and object-oriented design skills

- Strong systems programming background well versed in writing and debugging efficient large scale, real time sensitive and highly concurrent software
- Proficient in design, documentation, implementation and unit testing of software components of a multi-threaded real-time/embedded system.
- Familiarity with version control, bug tracking, and CI/CD systems
- Able and inclined to write technical documentation
- Good relationship and co-working skills
- Detail oriented

Highly Desirable Requirements

- Good understanding of the O-RAN Architecture, including the nRT-RIC-CU-DU interfaces
- Working experience with F1AP and split CU-DU architectures
- Strong, hands-on experience with the 5G NR MAC layer
- Hands on experience working on the ASN.1 interface description language
- Base experience with cloud native technologies - Kubernetes, Helm charts and containerized applications
- Agile development
- Prior startup experience is helpful

Skills

LTE, 4G, NR, 5G, RRC, SDAP, PDCP, C++, Go Language, Systems Programming, RRM

Job Responsibilities

- You will be responsible for the design, coding, and unit testing of L3-L2 components as part of ONF's SD-RAN project, including O-RAN architecture compliant interfaces for CU-C, CU-U and DU with the nRT-RIC
- You will be responsible for the design, coding, and unit testing of nRT-RIC xApps for basic RRM functionalities

About the Open Networking Foundation

[\(<http://opennetworking.org>\)](http://opennetworking.org)

The Open Networking Foundation is headquartered in Menlo Park, CA. We are a non-profit operator led consortium driving transformation of network infrastructure and operator/supply chain business models. We are an open, collaborative, community of communities. The ONF serves as the umbrella for a number of projects building solutions by leveraging network disaggregation, white box economics, open source software and software defined standards to revolutionize the carrier industry.

We are building Open Source Tools and Platforms to *accelerate* the adoption of Software Defined Networking (SDN), Cloud infrastructures, Virtualization, and Network

Functions Virtualization (NFV). We are an Open Source *development* organization with strong research, product and innovation background.

We are looking for people who are passionate about learning and who are open minded about the way cloud infrastructure and networks are built. We want people with a strong desire to implement their ideas and see those implementations used in real networks. Have you built and delivered products for commercial companies? Have you done applied research in cloud infrastructures and networks? Have you contributed to Open Source projects?

What is life like on a daily basis at ONF? We work closely with operators, partner engineers, and executives leading change in the networking industry. We develop with agile methods. We challenge each other, we brainstorm, we write code, we create new implementations that have *real impact*. We collaborate closely with both commercial and academic organizations. We have fun and we make a difference.