



ERICSSON

Ericsson - A leader in the O-RAN Alliance

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Introduction

The O-RAN Alliance defines specifications in areas of RAN automation, cloudification, and disaggregation. The ambition of the O-RAN Alliance is to enable an Open RAN by creating a multi-supplier RAN solution that allows for the separation - or disaggregation - of hardware and software with open interfaces and virtualization, hosting software that controls and updates networks in the cloud.

Open RAN is an industry term for open radio access network architecture. It is a RAN that includes open interoperable interfaces and virtualization and is AI-enabled.

O-RAN Alliance is an industry initiative for additional disaggregation, automation, and openness in RAN. Its main objective is to create global technical specifications. It can be considered a complement to 3GPP.

With many claims on the Open RAN leadership, understanding the impact of key companies in standardization within the O-RAN Alliance is an important indication of technology leadership in Open RAN development.

In this report, we analyze Ericsson's impact on the O-RAN Alliance and show that Ericsson is the leading company in the development of Open RAN.



Value ↑

Result A
Display Channel

Persona A

Result B

Persona B

e-mail distrib.

KPIs Meta

1:1 meetings

Chat

Events

Impact →

O-RAN Alliance facts

O-RAN Alliance is a global alliance founded in 2018. As of December 2023, the O-RAN Alliance had 32 "operator members" and 262 "contributors and academic contributors" (O-RAN Alliance only allows communication service providers as members, all other companies and entities are considered to be contributors).

O-RAN Alliance creates technical specifications for RAN automation, cloudification, and disaggregation.

For network automation, the O-RAN Alliance is specifying two alternative RAN Intelligent Controllers (RICs), Non-RealTime and Near-RealTime RIC. NonRT RIC is specified in the O-RAN Alliance working group 2, while NearRT RIC is specified in working group 3. The overall architecture is specified in working group 1.

For RAN internal interfaces, the O-RAN Alliance has been working on the development of interoperable profiles for interfaces specified by 3GPP (especially F1, X2, and Xn interfaces) and on lower layer split (LLS). Interoperable profiles are developed in working group 5, while LLS is developed in working group 4.

For cloudification, the O-RAN working group 6 has two main activities. Firstly, it specifies the O2 interface that will be used to deploy, manage, and orchestrate the cloud infrastructure used in the RAN. Secondly, it also specifies how hardware (HW) acceleration can be implemented.

An overview of the O-RAN Alliance workgroups and focus groups is shown below. There are 11 work groups (WGs), five focus groups (FGs) and one research group (RG). The Technical Steering Committee (TSC) supervises the technical workgroups which are responsible for O-RAN specification work. Each of the technical workgroups covers a part of the O-RAN architecture.

Security is critical to the entire Open RAN architecture. Previously the Security Focus Group (SFG) was created to oversee the security aspects of the entire open RAN ecosystem. The SFG has published several technical specifications, and operates much like a WG, as a result of which, it was changed to WG11 (Security).

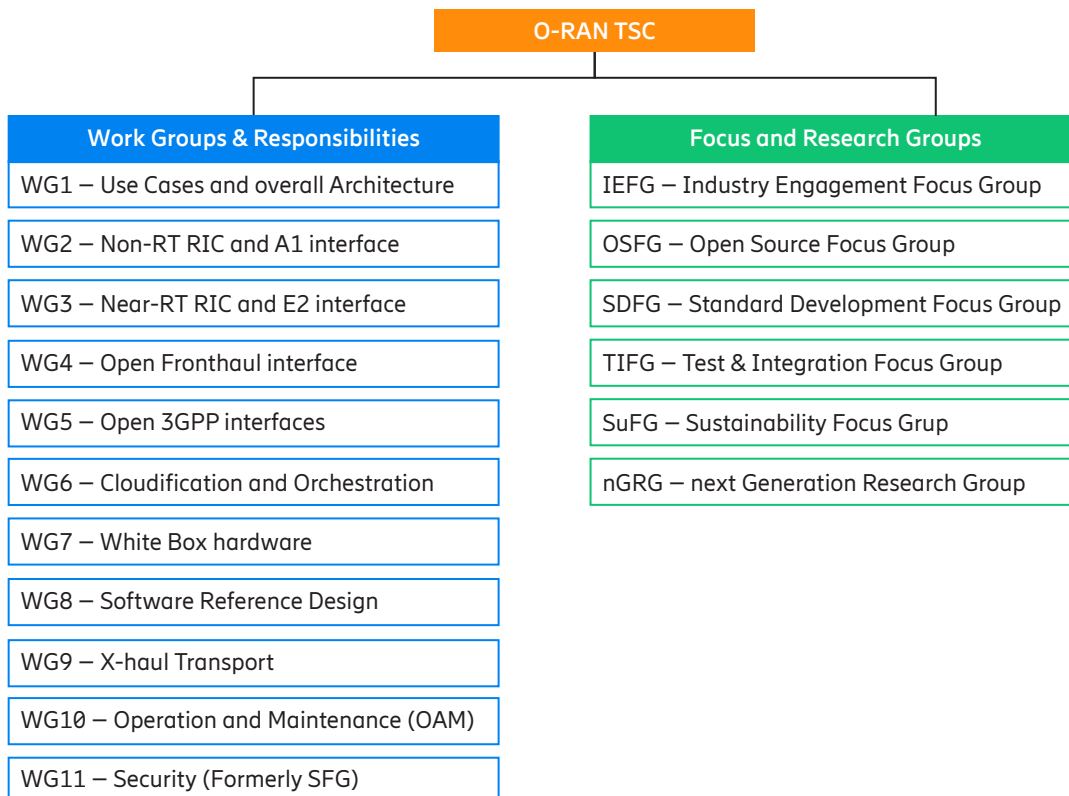


Figure 1: O-RAN Alliance Technical Steering Committee structure

Ericsson's contribution to the O-RAN Alliance

Ericsson's focus areas in the O-RAN Alliance are network automation within SMO, including orchestration, RAN OAM, Non-RT-RIC, and rApps, as well as network internal interfaces (especially LLS and enhancements to it), and security.

On network automation, Ericsson is focusing on service management and orchestration and the ability to create open rApps. Ericsson believes that the rApp domain has enormous potential for openness and innovation. One of the most exciting things about the SMO/Non-RT-RIC/rApp domain is the opportunity for co-creation within the industry. To enable a new development ecosystem for rApps, Ericsson is also offering developers resources like software development kits (SDKs), guides, sample rApps and test resources.

Ericsson holds co-chair positions in WG2 (which covers non-RT RIC and the A1 and R1 interfaces), WG5 (which covers interoperable profiles for 3GPP interfaces) and WG11 (which covers security aspects). In addition, Ericsson was elected to a co-chair position on the Technical Oversight Committee of the Next Generation Research Group (nGRG), but later had to vacate this position due to the limit of chair positions per contributor company.

All these chair positions are evidence of Ericsson's exceptional commitment to supporting standardization organizations by appointing volunteers to official positions. Only 12 vendors out of the total 262 O-RAN Alliance contributors have any working group co-chair positions and only one vendor in addition to Ericsson has three working group co-chair positions.

Normally technical contributions in O-RAN Alliance are identified by the authoring company through unique two-three letter

company identifiers in the file name. For example, the filenames for Ericsson's contributions follow ERI-filename.ext pattern. This approach is quite reliable for contributions from 2021 onwards, but it misses second contributors when there are multiple authors, as they are simply documented by adding AO after the company identifier, for instance, ERI-AO-filename.ext.

We have also filtered out obviously non-technical contributions, such as agendas, meeting minutes, and participant lists, as well as contributions produced in an official capacity (for example, chairman and rapporteur documents) and have also filtered out duplicate contributions created by e.g. cloning a page.

As shown in Figure 2, Ericsson contributed more than 18% of the total technical contributions to O-RAN Alliance during 2023. This is more than any other company, and only one company other than Ericsson contributed more than 10%.

The breakdown of Ericsson's contribution to different O-RAN Alliance working groups is shown in Figure 3. In general, Ericsson is active in most of the working groups (with WG3 being the main exception). In fact, Ericsson has contributed more than any other company in a number of working groups, e.g. WG2 (NonRT RIC) and WG1 (Use cases and architecture), more than 25% of the contributions are from Ericsson.

Ericsson is also active in securing that O-RAN Alliance specification are published in different regions. For example, seven specifications with Ericsson rapporteurs have been published as ETSI specifications using the ETSI Publicly Available Specification (PAS) process.

Share of technical contributions in O-RAN Alliance in 2023

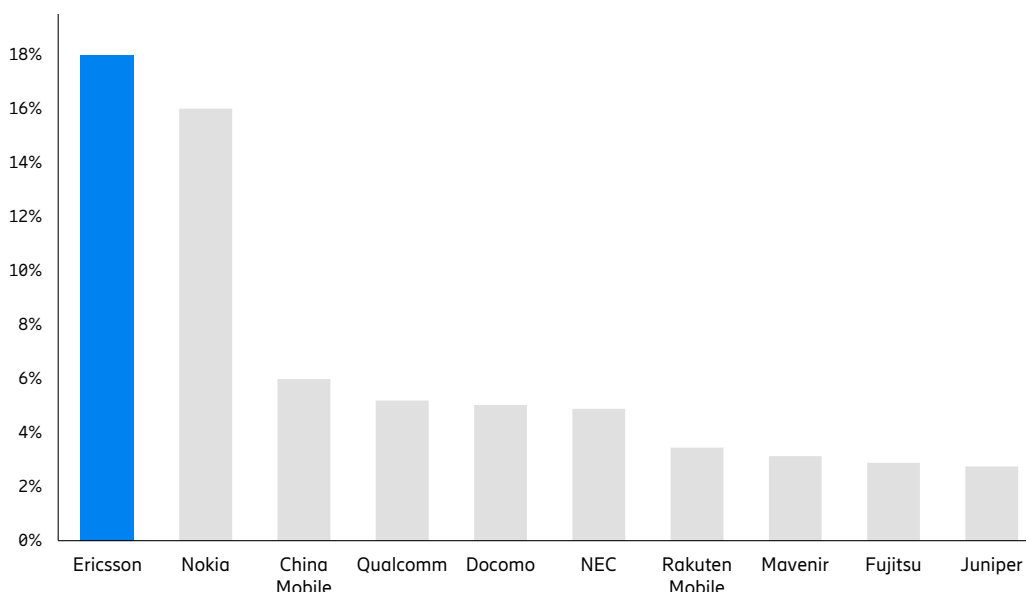


Figure 2: Leading companies based on number of technical contributions to O-RAN Alliance in 2023.

Ericsson share of technical contributions in selected O-RAN Alliance working groups in 2023

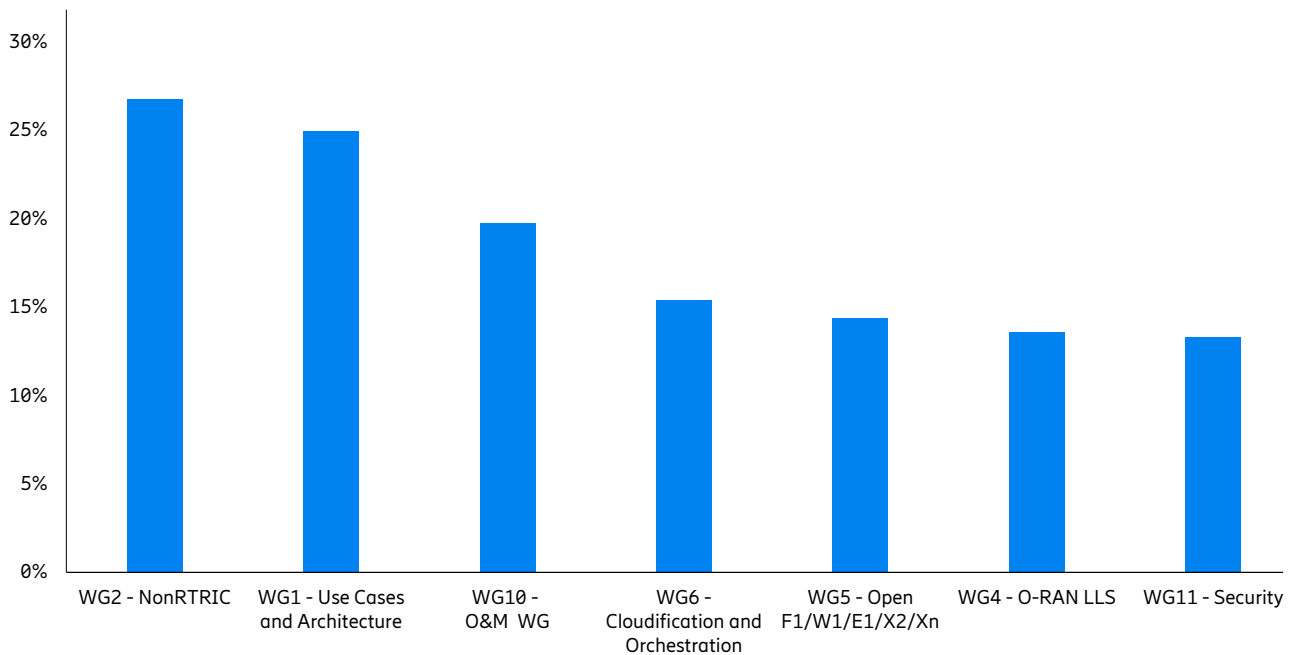


Figure 3: Ericsson's share of technical contributions in selected O-RAN Alliance working groups during 2023.

O-RAN Software Community (OSC) leadership

In addition to traditional standardization contributions, the O-RAN Alliance has associated open source projects hosted in the O-RAN Software Community (OSC). The O-RAN Software Community (OSC) is a collaboration between the O-RAN Alliance and the Linux Foundation with the mission to support and simplify the creation of software for the radio access network (RAN). OSC is sponsored by the O-RAN Alliance and is under the Linux Foundation. The O-RAN Software Community is focused on aligning with the O-RAN Alliance's open architecture and specifications to provide solutions that can be utilized for industry deployment. Initial focus

areas for the OSC are non-RT RIC, near-RT RIC, cloudification and virtualization platforms, open central unit (O-CU), open distributed unit (O-DU), and a test and integration effort to provide a working reference prototype.

One of the most commonly used technical metrics on open source projects is the number of commits. During 2023, Ericsson's share of commits in the OSC has been more than 28%, which exceeds all other companies by a substantial margin. In fact, Ericsson has been the largest contributor to OSC since 2021.

Summary

In this document, we have evaluated Ericsson's contribution to the O-RAN Alliance and the O-RAN Alliance Open Source Community (OSC). O-RAN Alliance is a key forum, which is building on the foundation set by 3GPP in RAN automation, cloudification, and disaggregation.

To conclude, some of the key points are:

- Ericsson is the largest contributor to the O-RAN Alliance with more than **18%** of the total technical contributions.
- Ericsson holds co-chair positions in WG2, WG5 and WG11. Only one other contributor holds three working group chair positions in the O-RAN Alliance.
- Ericsson also has the highest number of commits to the O-RAN Software Community, more than **28%**.

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