O-RAN ALLIANCE Overview

March 2025

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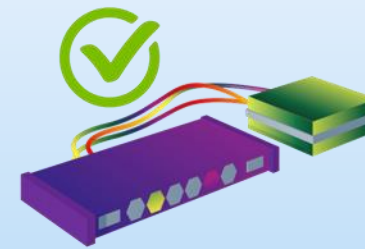
O-RAN ALLIANCE Mission

Open

Intelligent
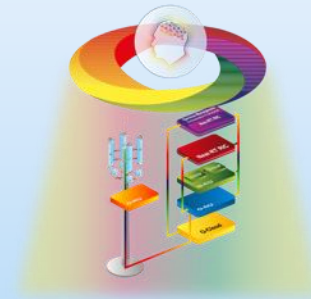
Transform Radio Access Networks to be…

Virtualized

Interoperable

O-RAN ALLIANCE Foundation in 2018

O-RAN ALLIANCE has been established as a German entity in August 2018

Merging C-RAN Alliance and XRAN Foundation

5 founding Members

O-RAN Ecosystem with Over 300 Participants

Since its foundation, O-RAN ALLIANCE has become a world-wide community of mobile network operators, vendors, and research & academic institutions operating in the Radio Access Network (RAN) industry.

Diverse community

- Academia
- Application developers
- Chipset makers
- Cloud providers
- Government agencies
- Hyperscalers
- Network Equipment Manufacturers
- Operators
- Research institutes
- Security
- Service providers
- System integrators
- Test and measurements
- Test labs
- Transport networks

Members*

Led by MNOs serving over 4.5B subscribers around the world

Contributors and Academic Contributors*
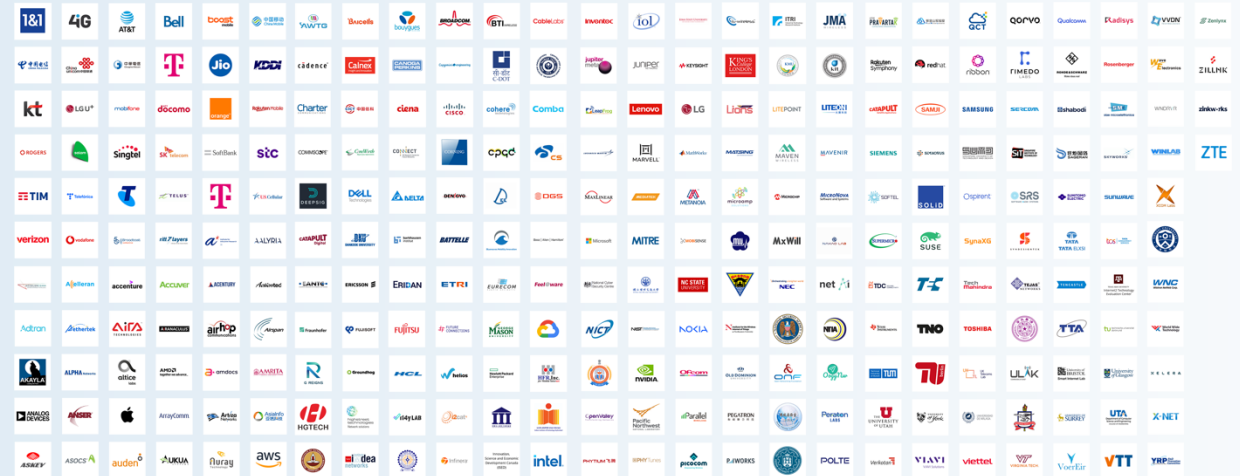
For up-to-date list see:
www.o-ran.org/membership

Membership in O-RAN ALLIANCE

O-RAN's emphasis on openness is reflected in its setup as an open technical organization, in accordance with the WTO principles for international standards development.

Meeting the RAN Industry Ecosystem

O-RAN membership base represents a diverse community of companies or research and academic institutions, and government agencies. Members and Contributors can meet and cooperate within the global RAN industry ecosystem.

Free Access to O-RAN F2F Meetings

All experts of Members and Participants are welcome to attend O-RAN ALLIANCE face-to-face meetings, sponsored by the O-RAN ALLIANCE. All O-RAN groups meet three times per year (Asia, Europe and Americas). Members and Contributors can meet in person, which boosts the progress of O-RAN ALLIANCE efforts.

Open Participation in any Work Group or Focus Group

Members and Contributors may join any Work Group or Focus Group and participate in the definition of requirements and specifications. O-RAN Work Groups and Focus Groups are co-chaired by both Members and Contributors. All co-chairs have the voting right at the Technical Steering Committee.

Early Access to O-RAN Specifications

All approved O-RAN ALLIANCE specifications are available to interested public. Members and contributors get access to all materials in Work Groups and Focus Groups, including work in progress and history of their versions and contributions. Members and Contributors can progress with their implementations before the specifications are released to public.

Membership in O-RAN ALLIANCE

Access to Testing and Integration at O-RAN PlugFests
At the O-RAN PlugFests, Members and Contributors can perform interoperability testing and integration of their implementations with other Members and Contributors. O-RAN PlugFests are co-sponsored by the O-RAN ALLIANCE. Participating Members and Contributors are presented in O-RAN public communication and the O-RAN PlugFest Virtual Showcase.

Access to Certification and Badging of O-RAN Products
O-RAN Certification and Badging Program ensures that operators can deploy products at scale and with confidence. O-RAN Members and Contributors can apply for certification to promote their O-RAN products or solutions. O-RAN certificates and badges are issued by accredited Open Testing and Integration Centres (OTICs).

Join World-Wide Community of OTICs
Open Testing and Integration Centres (OTICs) are vendor-independent, open and qualified labs approved by the O-RAN ALLIANCE authorized to issue awards in the O-RAN Certification and Badging Program. Members and Contributors can work with OTICs on testing, integration and certification of their solutions.

Promote Products and Solutions at O-RAN Virtual Exhibition
O-RAN Virtual Exhibition is a unique platform that allows O-RAN Members and Contributors to promote their O-RAN products and solutions. The platform is sponsored by O-RAN ALLIANCE. O-RAN Virtual Exhibition is regularly updated to complement major industry exhibitions.

Promote O-RAN Trials or Deployments in the O-RAN Map
O-RAN Map tracks trials and deployments of O-RAN based technology and solutions announced by Mobile Network Operators. Members and Contributors may be promoted in announcements listed on the map.

Contribute to the O-RAN Software Community
The O-RAN Software Community (OSC) develops open software, supporting the O-RAN ecosystem in development, testing and integration of their O-RAN products and solutions. Members and Contributors are welcome to join the OSC and contribute to the open software development.

Membership Structure O-RAN ALLIANCE

O-RAN ALLIANCE offers a tiered membership structure to enable a diversity of organizations to participate

Membership categories:

- **Members** are mobile network operators and strong advocates of the O-RAN ALLIANCE's goals and objectives
- **Contributors** are organizations developing products and solutions to be deployed by Members. Divided by size:
  - Contributors
  - Small & Medium Enterprise (SME) Contributors
  - Start-up Contributors
- **Academic Contributors** are research or academic institutions or other non-profit organizations that bring new ideas and add value to O-RAN ALLIANCE and its efforts

O-RAN membership is subject to yearly fee

For details and O-RAN membership documents visit: https://www.o-ran.org/membership-info

Way of Working – Contribution Driven Consensus

O-RAN ALLIANCE efforts are contribution-driven

- Anyone in the community is entitled to contribute, propose new activities or amendments to existing activities

Meetings are essential to discuss the contributions or any topics relevant for the progress

- Face-to-Face meetings of all groups 3-times per year
- Regular online meetings
- Group-specific F2F meetings

Aiming at reaching consensus at all levels

- There is also an option to make a vote

Procedures and collaboration tools supporting the efforts

3 Main Thrusts

O-RAN Specification Effort

O-RAN specifications define all aspects of the O-RAN Architecture and are available to everyone

Testing, Integration and Certification

O-RAN supports its Members and Contributors in testing, integration and certification of their O-RAN implementations

PlugFest
O-RAN ALLIANCE

Open Testing and Integration Centre

O-RAN | CERTIFIED

O-RAN | INTEROPERABLE

O-RAN | E2E - TESTED
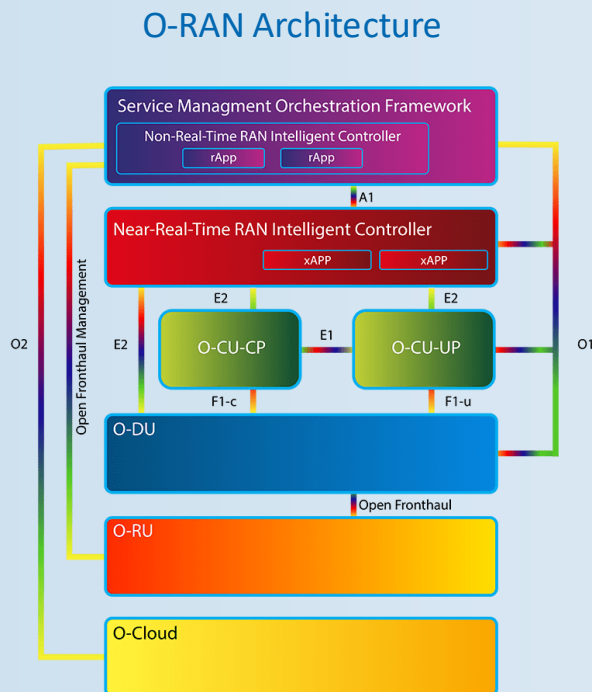
O-RAN Software Community

In collaboration with the Linux Foundation, supports the creation of open software for the RAN

Specification Effort

O-RAN Specifications set the foundation for telecom industry towards open and intelligent RAN

- O-RAN specifications are available to the general public at https://www.o-ran.org/specifications

O-RAN Architecture

Roadmap Definition by MVP-C

Top-down planning of releases, feature packages, work items.
Aligned with operators' requirements for Minimum Viable Plan (MVP) and future development based on operators' priorities.

Bottom-up specification effort

Work Groups

- WG1: Use Cases and Overall Architecture Work Group
- WG2: The Non-Real-Time RIC and A1 Interface Work Group
- WG3: The Near-Real-Time RIC and E2 Interface Work Group
- WG4: The Open Fronthaul Interfaces Work Group
- WG5: The Open F1/W1/E1/X2/Xn Interface Work Group
- WG6: The Cloudification and Orchestration Work Group
- WG7: The White-box Hardware Work Group
- WG8: Stack Reference Design Work Group
- WG9: Open X-haul Transport Work Group
- WG10: OAM Work Group
- WG11: Security Work Group

Focus and Research Groups

- IEFG: Industry Engagement Focus Group
- OSFG: Open Source Focus Group
- SDFG: Standard Development Focus Group
- SuFG: Sustainability Focus Group
- TIFG: Testing and Integration Focus Group
- nGRG: next Generation Research Group

For details see our website
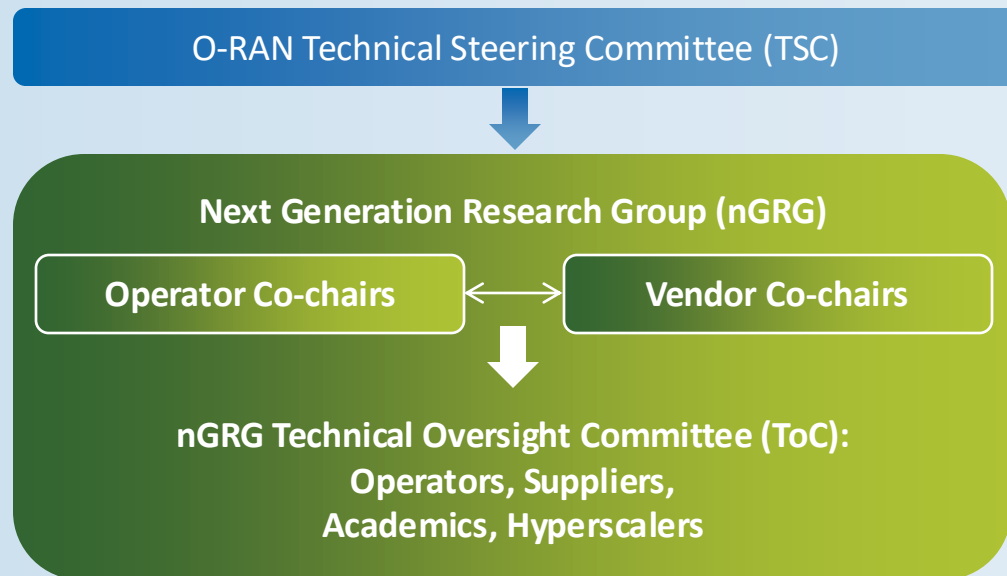
Aligned with the Industry

The O-RAN Architecture and specifications build on common standards and care about alignment with other industry bodies to ensure compatibility and to avoid duplication of work

O-RAN Next Generation Research Group (nGRG) Structure and Research Streams

The nGRG focuses on research of open and intelligent RAN principles in 6G and future network standards

O-RAN Technical Steering Committee (TSC)

Next Generation Research Group (nGRG)

Operator Co-chairs ⟷ **Vendor Co-chairs**

nGRG Technical Oversight Committee (ToC):
Operators, Suppliers,
Academics, Hyperscalers

	Research Streams
RS01	6G use cases and standard gap analysis
RS02	Architecture towards 6G O-RAN
RS03	Native AI and cross domain AI
RS04	Native security
RS08	nG Research Platform

O-RAN Software Community (OSC) and Related Linux Foundation Projects

A collaboration between O-RAN and Linux Foundation to develop software for RAN as per O-RAN specification and architecture
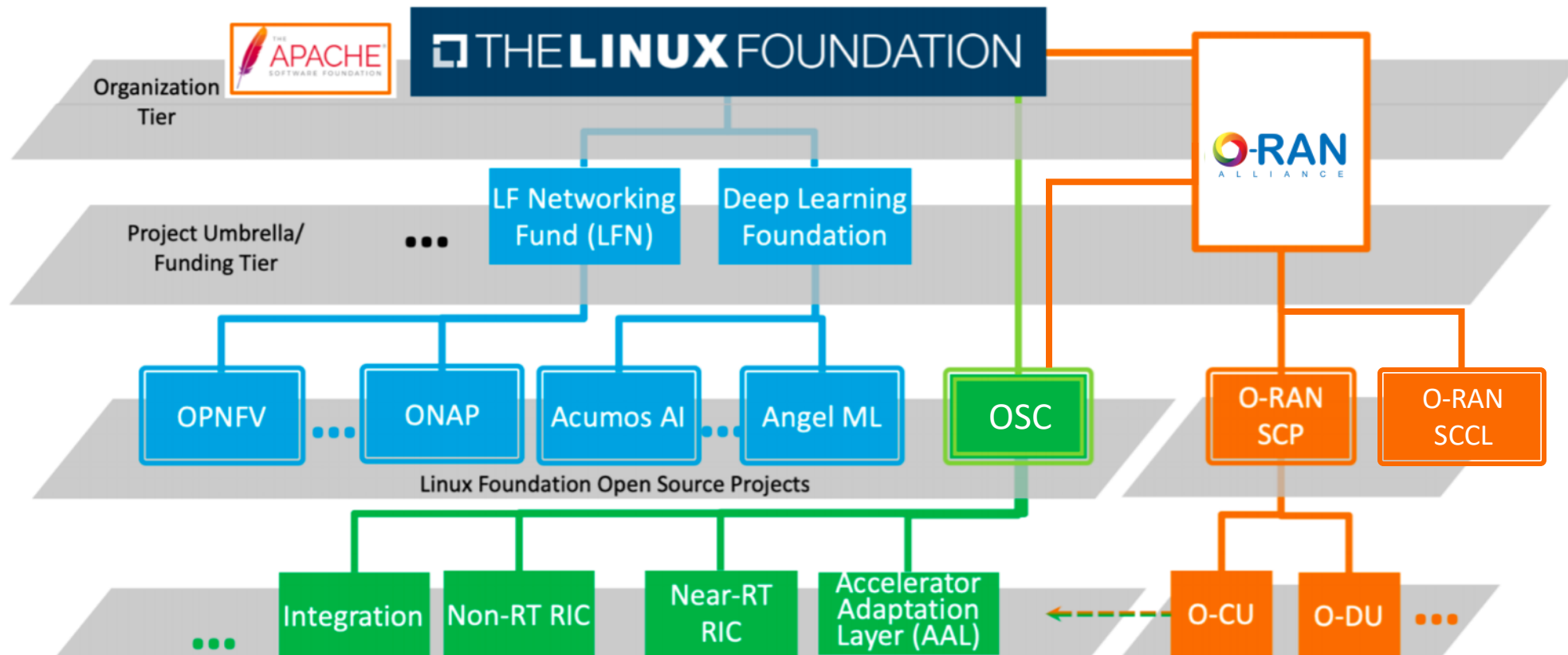
O-RAN Software Community Facts

OSC's open software continues to greatly help companies to develop, test and integrate their commercial open and intelligent RAN solutions

2+1 licenses
- Apache License 2.0
- O-RAN Software License
- Standards Collaboration Copyright License (SCCL)

13* active projects, with the ability to represent every key O-RAN component
- New project on AI/ML Framework

12 members of Technical Oversight Committee (TOC)**

3 Open Labs
- North America East Coast Lab
- North America West Coast Lab
- Asian Pacific Lab

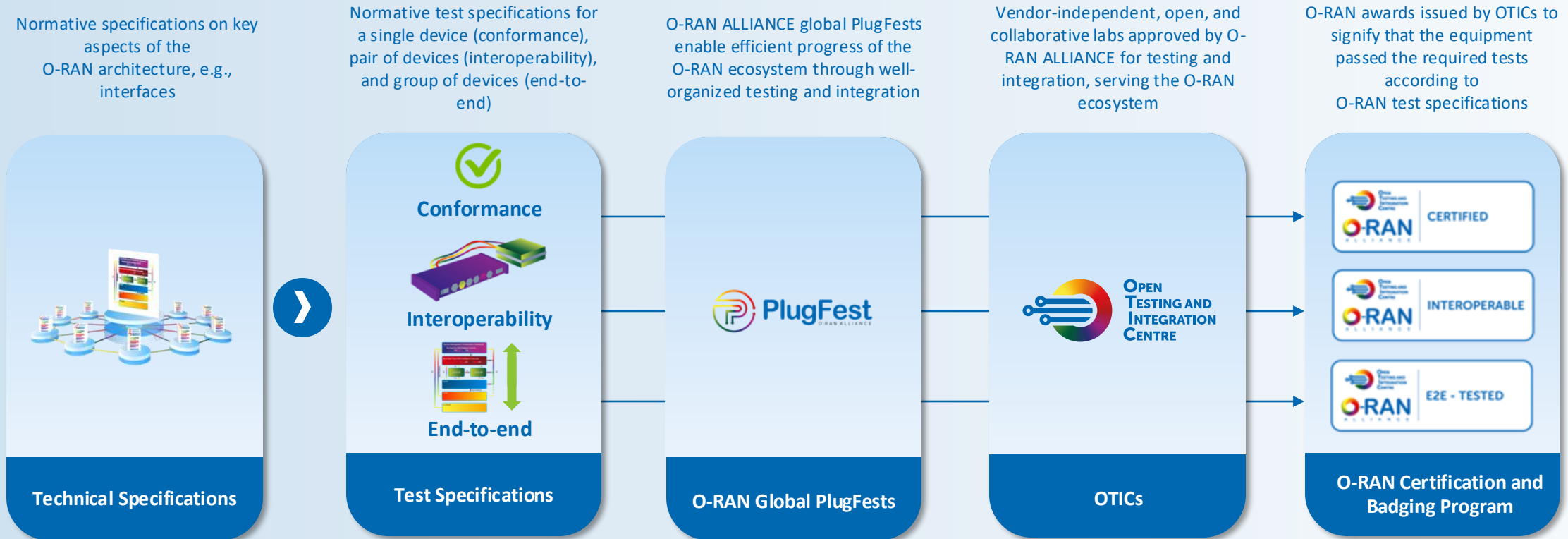## Open to anyone to contribute
- Upon signing the Contributor License Agreement (CLA)
- Learn more at https://www.o-ran.org/software

*) For details see: https://wiki.o-ran-sc.org/display/ORAN/Projects

**) For details see: https://wiki.o-ran-sc.org/display/TOC

Testing and Integration

O-RAN ALLIANCE supports its Members and Contributors in testing and integration of their O-RAN solutions

Normative specifications on key aspects of the O-RAN architecture, e.g., interfaces

Normative test specifications for a single device (conformance), pair of devices (interoperability), and group of devices (end-to-end)

O-RAN ALLIANCE global PlugFests enable efficient progress of the O-RAN ecosystem through well-organized testing and integration

Vendor-independent, open, and collaborative labs approved by O-RAN ALLIANCE for testing and integration, serving the O-RAN ecosystem

O-RAN awards issued by OTICs to signify that the equipment passed the required tests according to O-RAN test specifications

Conformance

Interoperability

End-to-end

PlugFest
O-RAN ALLIANCE

Open Testing and Integration Centre

CERTIFIED

INTEROPERABLE

E2E - TESTED

Technical Specifications

Test Specifications

O-RAN Global PlugFests

OTICs

O-RAN Certification and Badging Program

O-RAN ALLIANCE Global

O-RAN Global PlugFests are periodic events organized and co-sponsored by O-RAN ALLIANCE to enable efficient progress of the O-RAN ecosystem through well-organized testing and integration. Vendors, providers and institutions come together to test, evaluate and verify their products and solutions.

PlugFest details

- Check our PlugFest Virtual Showcase to learn about scope and accomplishments made at O-RAN PlugFests

Explore O-RAN ALLIANCE
PlugFest Virtual Showcase

Open Testing and Integration Centres (OTIC)

Vendor-independent, open and qualified labs providing a collaborative, open, and impartial working environment. Approved OTICs are authorized to issue Certificates or Badges in the O-RAN Certification and Badging Program


21 approved OTICs:

- European OTIC in Berlin
- European OTIC in Torino
- Auray OTIC and Security lab
- European OTIC in Paris
- European OTIC in Madrid
- Asia & Pacific OTIC in PRC
- Kyrio O-RAN Test and Integration Lab
- North American OTIC in NYC Metro Area/East (COSMOS)
- Japan OTIC
- Asia & Pacific OTIC by ritt7layers
- Asia & Pacific OTIC in Singapore
- North American OTIC in the Boston Area (Northeastern University)

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- North American OTIC in Salt Lake City (POWDER)
- North American OTIC in Central Iowa (ARA)
- North American OTIC in Washington DC/Arlington VA (Virginia Tech)
- North American OTIC at MITRE
- Korea OTIC
- North American OTIC in the Boston Area (UNH-IOL)
- North American OTIC in the Raleigh-Durham Research Triangle Park Area (AERPAW)
- European OTIC in London (Digital Catapult)
- South American OTIC in Campinas at CPQD

Explore OTICs

O-RAN Certification and Badging Program

Certification and Badging of O-RAN solutions represents a comprehensive mechanism ensuring confidence in O-RAN solutions

Certificates and Badges of O-RAN solutions are issued by Open Testing and Integration Centres (OTIC)
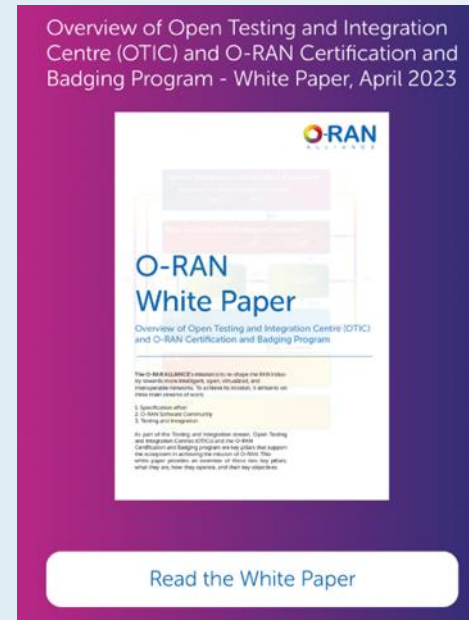
Learn more about the O-RAN Certification and Badging program on our website

O-RAN Virtual Exhibition

Showcasing technology and solutions developed by companies based on O-RAN specifications

O-RAN Map

Explore O-RAN Trials, Deployments, PlugFests and OTICs in the World

Explore O-RAN Map

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