

O-RAN Global PlugFest 2021 Demonstrates Stronger Ecosystem and Maturing Solutions

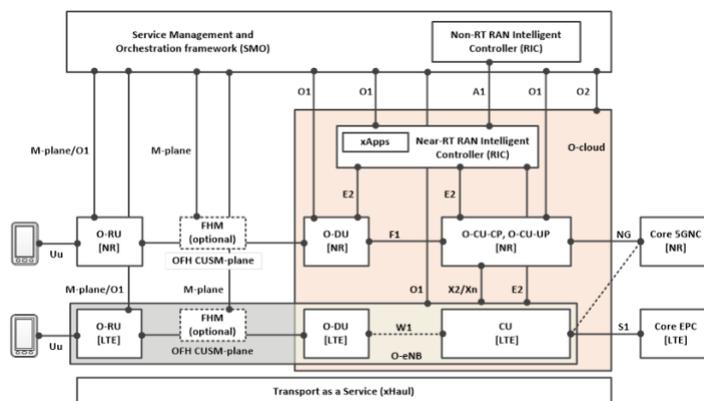
- O-RAN Global PlugFest 2021 more than doubles with 144 corporate participants in the 7 global venues
- Scope includes multi-vendor interoperability, Radio Intelligent Controllers, O-Cloud, infrastructure security and end-to-end functionality
- PlugFest Virtual Showcase will allow interested public to explore the 2021 PlugFest in detail

Bonn/Germany, December 15, 2021 – The O-RAN ALLIANCE has successfully conducted its O-RAN Global PlugFest 2021 to demonstrate the functionality and multi-vendor interoperability of O-RAN based network equipment.

The O-RAN ALLIANCE is a world-wide community of more than 300 operators, vendors and research and academic institutions working in a [transparent way to develop a sustainable open RAN ecosystem](#). 30 mobile network operators committed to O-RAN are serving over 4.5 Billion subscribers around the world.

O-RAN Global PlugFest 2021 – O-RAN’s third world-wide testing and integration event – demonstrated the strength of the O-RAN ecosystem and its global drive towards open and intelligent Radio Access Networks (RAN). The O-RAN PlugFest expanded from 4 to 7 global venues, with 94 participating companies. Many of the companies contributed to multiple venues, bringing Plugfest to a total of 144 active corporate participants compared to 70 at the 2020 PlugFest.

“The expanded and diverse participation of companies from across the technology ecosystem at the O-RAN Global PlugFest 2021 is testimony to growing momentum behind Open RAN and its relevance for our industry,” said Alex Jinsung Choi, Chief Operating Officer of the O-RAN ALLIANCE and SVP of Strategy and Technology Innovation, Deutsche Telekom. “The joint, open and coordinated O-RAN Global PlugFest framework is crucial for all O-RAN members to collaborate within the community and accelerate the ecosystem development of commercially available Open RAN solutions.”



O-RAN Global PlugFest 2021 Integration and Testing Configuration

Testing multi-vendor interoperability, Radio Intelligent Controllers, O-Cloud, infrastructure security and end-to-end functionality

Overall, O-RAN Global PlugFests bring a great opportunity for the industry to deal with integration challenges in an efficient way and to make major progress in development of commercial O-RAN products. This year’s Plugfest was not an exception, as demonstrated by the successes:

- This year’s PlugFest proved advanced maturity of the Open Fronthaul (OFH) implementations. Interoperability has been achieved between many vendors in different network setups, base station classes, OFH profiles and RU/CU-DU product combinations.

- There were several demonstrations of advanced use cases utilizing the O-RAN Near-Real-Time Radio Intelligent Controller (Near-RT RIC) and Non-Real-Time RIC (Non-RT RIC), like automated network outage detection and recovery, and latency assurance for end-to-end network slicing. A lot of effort also went into testing individual RIC interfaces, application protocols, and related xApps and rApps.
- Several venues successfully tested O-Cloud products and multi-vendor virtualized RAN integrations.
- Specific tests dealt with the O-RAN infrastructure security.
- Thanks to the O-RAN community enthusiasm and great collaboration, several O-RAN end-to-end functionality tests passed against production core network elements, while many other utilized simulators.
- All venues proved the readiness of advanced test equipment and simulation of different parts of the network.
- PlugFest hosts managed combinations of on-site and remote testing, reflecting the Covid-19 pandemic situation in different parts of the world.

In Asia, the O-RAN Global PlugFest 2021 took place at four venues

The **PlugFest in Japan** was hosted by **NTT DOCOMO, KDDI, Rakuten Mobile, SoftBank** and **YRP** in Tokyo area and Yokosuka. Activities focused on multi-vendor interoperability testing of Open Fronthaul interface in 5G NSA/SA setup achieving 1Gbps DL throughput, as well as multi-vendor vRAN integrations.

Another stream focused on 3GPP RF Conformance testing and demonstration of autonomous RAN outage detection and self-healing utilizing O-RAN Non-Real-Time and Near-Real-Time Radio Intelligent Controllers (Non-RT and Near-RT RIC). Near-RT RIC concept and the detailed mechanisms were also showcased to support latency assurance for end-to-end network slicing. Potential parameters to be supported in the O-RAN specifications were identified as study results.

As a complementing activity, selected participants started a study on RAN emission characteristics. In addition to the hosts, participants included **Fujitsu, HCL, JMA Wireless, Keysight Technologies, NEC, Nokia, NVIDIA, Samsung, VIAVI Solutions** and **Wind River**.

The **O-RAN PlugFest in Republic of Korea** was hosted by **LG Uplus** for the first time in Korea at its 5G Innovation Lab in LG Science Park, Seoul. The primary focus was on evaluation of Open Fronthaul for multi-vendor interoperability of a 5G SA system (FR1, TDD).

In addition to the hosts, participants included **AltioStar, DZS, Intel, Keysight Technologies** and **NEC**.

Activities at Taiwan-based **O-RAN PlugFest in Auray OTIC and Security Lab & Chunghwa Telecom** were performed by two hosts:

Auray, at their **OTIC** and Security lab in Taiwan in Taoyuan hosted multi-vendor interoperability testing for indoor scenario focusing on Open Fronthaul as well as scenarios according to O-RAN end-to-end test specification v2.0.

Chunghwa Telecom in Yangmei hosted validation of multi-vendor E2E solutions for O-RU, O-CU/O-DU with real core network, as well as demonstration of Service Management and Orchestration using O-RAN Non-RT RIC.

In addition to the hosts, participants included **AetherTek, Alpha Networks, Arcadyan, Calnex, Compal, Delta Electronics, Foxconn, iConnex, Institute for Information Industry, Intel, Inventec, IP Infusion, ITRI, JPC connectivity, Keysight Technologies, Lions Technology, Liteon, Metanoia Communications, MICAS, MiTAC Computing, NKG, O'Prueba, Pegatron, QCT, Rohde & Schwarz, Sageran, Sercomm, VIAVI Solutions, Wiwynn** and **WNC**.

The **O-RAN PlugFest in India** was hosted by **Bharti Airtel** at NOC Manesar in Gurgaon, Delhi. The primary focus was on traffic steering using the O-RAN Near-RT RIC, physical infrastructure security, O-RU M-plane and S-plane tests, Open Fronthaul gateway tests and E2E testing of O-RAN solution.

In addition to the host, participants included **AMI, ASOCS, Capgemini Engineering, Cisco, Intel, IP Infusion, Keysight Technologies, Mavenir, Sercomm, STL, TCS, VIAVI Solutions, VMware** and **VVDN**.

The O-RAN Global PlugFest 2021 in Europe took place at two venues

The **O-RAN PlugFest hosted by Skoltech** was hosted by **Skoltech** at its OpenRAN 5G Lab in Moscow. The activities focused on 3GPP compliance validation for O-RU and on end-to-end integration of O-RAN 5G gNB with commercial 5G core.

In addition to the hosts, participants included **Foxconn, Keysight Technologies** and **Xilinx**.

BT, Deutsche Telekom, Orange, Telefónica, TIM and **Vodafone** have teamed up together with the **Telecom Infra Project (TIP)** to host the **Joint European O-RAN & TIP PlugFest** at 4 European **OTICs** in Berlin, Madrid, Paris and Torino.

The focus was on O-RU conformance testing, E2E multi-vendor integration with performance and functional testing, load and scale testing of O-CU, security testing, validation and demonstration of RIC, xApps and rApps, demonstration of multi-vendor O-RAN based architecture and xHaul transport. In addition to the hosts, participants included **Accelleran, ADVA, Advantech, AirHop Communications, Anritsu, Capgemini Engineering, Ciena, Cisco, Comba Network, Dell Technologies, DZS, EANTC, EXFO, Facebook, Foxconn, Fujitsu, Intel, IP Infusion, IS-Wireless, JMA Wireless, Juniper Networks, Keysight Technologies, Mavenir, MICAS, MTI, NEC, ONF, Precision OT, Radisys, Rohde & Schwarz, VIAVI Solutions, VMware, Wind River, Wiwynn** and **Xilinx**.

In North America, the O-RAN Global PlugFest 2021 brought together companies and academic institutions

The **Joint O-RAN, TIP, Linux Foundation PlugFest & Proofs of Concept** hosted by **AT&T** and **Verizon**, was conducted across 3 labs in the USA: the NSF POWDER lab at the **University of Utah** in Salt Lake City, the NSF COSMOS lab at **Rutgers University** in New Jersey, and the TIP Community Lab on the **Facebook (META)** campus in Menlo Park, California.

PlugFest activities focused on Open Fronthaul conformance testing and multi-vendor interoperability. Proofs of Concept demonstrated O-Cloud infrastructure behaviour in latency sensitive applications, RIC demonstration of successful E2AP procedures and measurement collection via E2 Service Model, RAN Slice SLA, AI-enabled management of multiple-operator/multi-vendor RAN with O-RU pooling & multi-vendor slices.

In addition to the hosts, participants included **Analog Devices, Anritsu, Calnex, Capgemini Engineering, Casa Systems, CIG, Commscope, Corning, Foxconn, Fujitsu, highstreet technologies, Intel, IP Infusion, JMA Wireless, Juniper Networks, Keysight Technologies, Mavenir, MTI, National Instruments, NEC, Radisys, Rohde & Schwarz, VIAVI Solutions, VVDN** and **Wind River**.

For more information about the PlugFest, see this [blogpost](#).

The O-RAN ALLIANCE is preparing a PlugFest Virtual Showcase to allow interested public to explore the O-RAN Global PlugFest 2021 in detail – soon to be available at www.o-ran.org.

About O-RAN ALLIANCE

The O-RAN ALLIANCE is a world-wide community of more than 300 mobile operators, vendors, and research & academic institutions operating in the Radio Access Network (RAN) industry. As the RAN is an essential part of any mobile network, the O-RAN ALLIANCE's mission is to re-shape the industry towards more intelligent, open, virtualized and fully interoperable mobile networks. The new O-RAN standards will enable a more competitive and vibrant RAN supplier ecosystem with faster innovation to improve user experience. O-RAN based mobile networks will at the same time improve the efficiency of RAN deployments as well as operations by the mobile operators. To achieve this, the O-RAN ALLIANCE publishes new RAN specifications, releases open software for the RAN, and supports its members in integration and testing of their implementations.

For more information please visit www.o-ran.org.

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