O-RAN ALLIANCE Announces Key Topics at the Open RAN Summit at Fyuz, Global PlugFest Fall 2022 and a New Set of O-RAN Demos

- Key topics at the Open RAN Summit @ Fyuz 2022 brought by the O-RAN ALLIANCE
- O-RAN Global PlugFest Fall 2022 initiated at 6 venues across Asia, Europe and North America
- 36 new demos of O-RAN technology at the O-RAN Virtual Exhibition

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Key topics at the Open RAN Summit @ Fyuz 2022 brought by the O-RAN ALLIANCE

The Open RAN Summit @ Fyuz, powered by O-RAN ALLIANCE and Telecom Infra Project, will take place in Madrid on October 25-26, 2022. As a main partner of the event, O-RAN ALLIANCE brings key topics to the agenda and invites utmost erudite speakers.

Join the event to get the latest news and views on:

- O-RAN ALLIANCE and TIP cooperation
- Established operators worldwide showcasing how they are overcoming Open RAN challenges and moving forward with deployments
- Open RAN cloudification options and realities
- Achievements and challenges on the open RAN supply side, along with insights into value chain evolution
- Rich variety of Open RAN deployment paths tailored to meet diverse operator's needs
- How the testing and integration work is critical to making Open RAN a success
- What's behind the hype of the RAN Intelligent Controllers and how an empowered ecosystem delivers customized operator value
- And many more in a wide range of breakout sessions

The Open RAN Summit @ Fyuz is being prepared in an attractive way combining focused sessions with food experience. Register and learn more at www.fyuz.events.

O-RAN Global PlugFest Fall 2022 initiated at 6 venues across Asia, Europe and North America

O-RAN ALLIANCE global PlugFests represent a major platform enabling efficient progress of the O-RAN ecosystem through well-organized testing and integration.

O-RAN Global PlugFest Fall 2022, second O-RAN PlugFest this year, has been initiated at 6 venues. Number of registrations currently exceeds 80 companies or institutions, of which many are ready to participate at more than one venue.

O-RAN Global PlugFest Fall 2022 is scheduled to conclude in December this year. Upon then, O-RAN plans to add its results, including the final list of participants, to the O-RAN PlugFest Virtual Showcase.

O-RAN Global PlugFest Fall 2022 comprises:

In Asia:

- PlugFest in Japan, hosted by KDDI, NTT DOCOMO, Rakuten Mobile, SoftBank, YRP and YRPC currently counts 14 registered participants including: Anritsu, Calnex Solutions, ComWorth, DZS, HCL Technologies, IP Infusion, ITRI, Keysight Technologies, LITEON, MiTAC Computing Technology, NEC, SageRAN Technology, VIAVI Solutions and Wind River.

- PlugFest in South Korea hosted by LG Uplus currently counts 7 registered participants including: Ciena, DELL Technologies, ETRI, Innowireless, Juniper Networks, Keysight Technologies and Viettel High Technology Industries.
- PlugFest in South Korea hosted by SK Telecom currently counts 10 registered participants including: ETRI, Intel, HFR Networks, Hewlett Packard Enterprise, Keysight Technologies and Wind River.

In Europe:
- Joint European O-RAN and TIP PlugFest, hosted by Deutsche Telekom, EANTC, EURECOM, Orange, TIM, Vodafone and BT, currently counts 36 registered participants including: Aarna Networks, Accelleran, ADVA Optical Networking, AMD, Analog Devices, Anritsu, Azcom Technology, Calnex Solutions, Capgemini Engineering, Dell Technologies, DZS, Fujitsu, HCL Technologies, Hewlett Packard Enterprise, IP Infusion, ITRI, Juniper Networks, Keysight Technologies, LITEON, Mavenir, MICAS, Microamp Solutions, NEC, Net AI, Nokia, Open Valley, Precision Optical Transceivers, Red Hat, Rimedo Labs, Rohde & Schwarz, SIAE MICROELETTRONICA, SOLiD, VIAVI Solutions, VoerEir, Wind River, VMware and Xena Networks.

In North America:
- PlugFest in North America, hosted by CableLabs, currently counts 6 registered participants including: Capgemini, Fujitsu, Radisys, Rohde & Schwarz, Sunwave and VIAVI Solutions.
- PocFest in North America, hosted by UNH-IOL, currently counts 15 registered participants including: Analog Devices, Anritsu, DZS, Fujitsu, Intel, IP Infusion, Keysight Technologies, LitePoint, NEC, Rohde & Schwarz, SOLiD, VIAVI Solutions, Telecom Engineering Centre, Vodafone and Wind River.

36 new demos of O-RAN technology at the O-RAN Virtual Exhibition
O-RAN ALLIANCE member companies have been progressing with their O-RAN based implementations.
One demonstration will be presented on-site at MWC Las Vegas:
- VIAVI Solutions, Rohde & Schwarz and AMD jointly demonstrate O-RAN Open Fronthaul (OFH) conformance and 3GPP pre-conformance validation of AMD's reference design O-RU. The AMD O-RU is validated by VIAVI automated TM500 O-RU Tester with R&S SMW200A vector signal generator, R&S FSVA3000 spectrum analyzer and the R&S VSE signal analysis software. The demonstration highlights a progressive test plan including functional, interoperability, conformance and performance testing, with a single point of control for the entire testbed. **Visit the demo at AMD, booth W1.720**.

More new demonstrations will soon be available at the O-RAN Virtual Exhibition.

Newly added **Intelligent RAN control demonstrations** include:
- AirHop and VMware demonstrate how automation and programmability efficiently detect and remediate PCI collisions/confusions to optimize RAN performance. The proposal is a solution to current RAN frequency planning, conflict mitigation and optimization methods which are costly and time-consuming, slowing deployment of new services and decreasing performance of existing ones.
- Cellwize and VMware demonstrate how to bring programmability to any type of RAN deployment, including purpose-built RANs. As an example, we demonstrate how Cellwize's rApp onboarded on VMware Centralized RIC optimizes EN-DC anchoring to maximize spectral usage in purpose-built RANs; leading to monetizable gains in performance.

- Cohere and VMware demonstrate how using RAN programmability, operators can double mobile bandwidth without any changes to antennas, radio or devices. Using Cohere's Spectrum Multiplier xApp powered by VMware Distributed RIC, now Services Providers can activate broadband in rural areas while avoiding costly changes in handsets or infrastructure.
- Ericsson demonstrates how CSPs can enhance customer experience with SMO and rApps. Ericsson FLM (Frequency Layer Manager) rApp running on the EIAP (Ericsson Intelligent Automation Platform) manages the complexity of traffic load distribution in 4G/5G RAN deployments. It automatically configures the network in order to provide the best customer experience while reducing OpEx and optimizing spectral usage.
- Groundhog demonstrates O-CLOUD and Intelligent RAN control using CovMo™, a cloud-native geo-location solution that detects and mitigate a multitude of challenges currently faced by MNOs including RAN-optimization, VIP-care, and next-generation network rollout strategies. Combining superior accuracy and geo-KPIs, CovMo™ intelligently provides critical insights on the QoS experienced by the subscribers.
- Inventec and NYCU showcase how to integrate the O-RAN SMO with the factory and academic fields as a first step to realizing digital twins with a painless upgrade of a 5G vertical ecosystem from a system integration perspective.
- NYCU demonstrates an academic 5G O-RAN field and SMO/xAPP validation platform in Taiwan. It is built for enhancement to AI algorithms for 5G O-RAN Private Networks, develop B5G technology, training, use case, B5G/6G Research, implementation of the PoC application and third party verification based on ISO 17025 standard.
- Polte and VMware demonstrate how to leverage RAN programmability to deliver precise sub-meter UE positioning. Using cellular as prime technology (as opposed to GPS or Wi-Fi), Polte's xApp powered by VMware's Near-Real-time RIC offers global location indoors/outdoors, while lowering cost and extending battery life of the IoT asset tracker.
- VIAVI demonstrates how multiple xApps can work together to improve the user experience of UEs (standing, walking, and driving) after an anomaly in the radio environment has negatively affected their data throughput.
- VMware and Intel demonstrate how simple it is for xApp partners to use Intel FlexRAN E2SM-KPM and E2SM-RC libraries integrated in VMware Distributed RIC's code to monitor, control and optimize the performance of a set of UE's distributed in a sector.

Newly added **Open RAN demonstrations** include:
- Anritsu demonstrates O-RAN open fronthaul conformance test. A O-RU transmitters and receivers characteristics are tested by Anritsu signal analyzer and generator. This demonstration highlights how to perform certainly and efficiently specified tests and other realistic test scenarios to accelerate installation and scaling of Open RAN.
- ArrayComm showcases its 5G Distributed Small Cell, a flexible 5G coverage solution with low power consumption. It includes white box BBU, Fronthaul Gateway, and O-RU. The BBU supports 2 FHGW connections, each FHGW supports maximum 12 O-RU connections. The 5G SA E2E demo shows the high performance and stability testing with measured large uplink throughputs, with networking of BBU, FHGW and O-RU as 1:2:2.
- ArrayComm demonstrates its 5G Distributed Small Cell E2E capability based on a Marvell platform white box base station. O-RAN Option7.2x eCPRI Fronthaul interface and SCF FAPI are used by the white box base station which can be widely used in the capacity coverage improvement scenarios, and can be easily deployed as cloud RAN.
- Azcom Technology showcases an O-RAN based Multi-RAT 5G RU reference design, the AZR-5000 RU. The reference can also be utilized for initial 5G network field trials or integration purposes.
- CIG, Actiontec and Keysight Technologies participated in the O-RAN ALLIANCE PlugFest to demostrate Open Fronthaul functionality between CIG O-RU and Keysight O-DU Emulator.

- DeepSig demonstrates its OmniPHY-5G Neural Receiver Software improving the 5G uplink capacity and throughput while improving the energy efficiency of the O-RAN O-DU. This demonstration uses a commercial UE over-the-air and a RIC xApp to provide online training to improve key air interface KPIs and performance.
- Infosys demonstrates the architecture of its O-RAN solution for Private 5G, integration, end-to-end testing with Keysight's emulated UE, and onboarding of Industry 4.0 use cases for enterprises.
- IS-Wireless showcases a Multi MNO scenario supported in the form of a Neutral Host. The end-to-end Open RAN network is deployable on any cloud in an automated manner as containers and supports both Open Fronthaul Split 7.2x and 3GPP split 2.
- GDCNi demonstrates its O-RAN based disaggregated solution and deployment models, achieving interoperability with multiple vendors using O-RAN Open Interfaces. GDCNi's ecosystem includes a variety of flexible features and deployment options (RU, DU, RU+DU, CU+RU+DU, and CU+DU+RU+5GC) enabling an E2E product solution to meet the different demands of customers.
- Keysight Technologies and Cisco demonstrate O-RAN Xhaul transport network test solution consisting of Open RAN distributed units (O-DU) and Open RAN radio units (O-RU) emulation (IxNetwork / Novus) to validate SRv6 uSID-based transport network elements' performance, benchmarking latency characteristics of fronthaul traffic under real-world conditions specified by the O-RAN WG9: Open X-haul Transport Work Group. Which enables 5G success with robust Xhaul Transport Infrastructure.
- Keysight Technologies showcases 5G deployment readiness testing with its Network Emulator 3. O-RAN deployments, consisting of Open RAN distributed units (O-DU) and Open RAN radio units (O-RU), are required to conform to stringent latency, delay variation and timing constraints. Keysight's Network Emulator 3 reproduces real-world network behavior, is used to test O-RAN conformance and interoperability, and validates application stability, SLA and performance under sub-optimal network conditions.
- Keysight Technologies showcases IxVerify 5G O-RAN, a pre-silicon testing solution in emulation focused on O-RU system-on-chip (SoC) designs. The ability to send O-RAN compliant testing stimulus into the emulated O-RU design ensures robust testing of the beamforming, precoding, decompression and iFFT blocks matching post-deployment real-life scenarios.
- Keysight Technologies and the University of Utah integrated Keysight's RICtest O-RAN Near-Real-Time RIC test software into Utah's POWDER "lab as a service" automation framework. This integration provides a powerful cloud-native platform for O-RAN testing that supports automatic, on-demand, workflow-driven test and validation of O-RAN Near-Real-Time RICs and xApps.
- Lenovo presents realistic testbed environment for project design and experimentations with support for Machine Learning based solutions. This emulation platform provides KPIs to the Near-RT RIC using Mininet-WiFi emulator, following O-RAN architecture and specifications.
- LIONS showcases their O-RU interworking with a third-party RAN (O-DU/O-CU) using the Open Fronthaul conformance and performance specifications. Five use cases are demonstrated. Two cases are for O-RU/ Open Fronthaul covering CUS-Plane. The other three cases are for O-RAN end-to-end covering performance at different cell locations, connecting to commercial 5G core network, and under mobility of UE.
- Picocom demonstrates O-RAN split 7.2 architecture interoperability milestone with Picocom's PC802 SoC, boards and PHY software, together with Radisys' Connect RAN 5G stack software. Picocom's silicon features both the O-DU and O-RU, connecting over the O-RAN Open Fronthaul Interface in this end-to-end demo.
- Reign, a new HTC subsidiary, demonstrates Open RAN Stack and Open Interface using portable 5G private network solution (REIGN CORE) powered several experiences at Mobile

World Congress, including a scaled-down example of driving cars remotely, AI-based 5G security camera system, and cloud VR streaming to HTC VIVE Focus 3 simultaneously on the same private 5G network. Second part is validation of result of O-RAN E2E Test Specification (O-RAN.TIFG.E2E-Test) using VIAVI testing equipment.

- SageRAN demonstrates a complete O-RAN white box small cell solution that is based on an x86 platform with an FPGA Accelerator card that showcases a stand-alone end-to-end use case using white box hardware for an indoor cell, which supports MIMO and all 4T4R.
- VIAVI Solutions demonstrates O-RAN Open Fronthaul performance testing of a real O-RU, which is complementary to conformance testing. A customer O-RU is validated over the 3GPP Physical Layer using the VIAVI TM500 O-RU Tester in conjunction with the TMLite UE emulation to demonstrate that the best performance can be obtained from the O-RU. This significantly increases the success rate of integration with a real O-DU and End-to-End testing at later stages.
- Viettel showcases its newest O-RAN demo towards the future of 5G called Massive MIMO 32T32R. This demo tests the 5G commercial UE OTA with Viettel 5G NSA gNodeB, which runs in Intel X86 COTS Server integrated with Viettel Outdoor Macro O-RU 32T32R, all built on O-RAN Category B architecture. UE speed test give DL: 1066 Mbps (4 Layer) and UL: 60.8 Mbps (1 Layer).
- Viettel showcases an end-to-end Macro 8T8R system based on O-RAN Open Fronthaul. This integrated system is verified using a commercial UE/sim card, Viettel's public network, UE Emulator from VIAVI, support SU-MIMO 4T4R up to 1.7Gbps for downlink and 150Mbps for uplink.
- Viettel showcases a 5G commercial UE with Viettel 5G NSA gNodeB, which is running Viettel's CU/DU software on the same Intel x86 server and integrated with Viettel's Mirco O-RU, all built on the O-RAN IP/UDP architecture. The O-DU and O-RU are connected through a transport network. This is the first step on the way to Viettel's C-RAN solution.
- Wind River showcases a demonstration of CNF orchestration into a distributed cloud by the SMO over the O-RAN O2 interface. The Wind River Studio Conductor acting as an SMO communicates with the Wind River Studio Cloud Platform which is distributed cloud via O-RAN O2 interfaces.
- Wiwynn teams up with Intel and WNC to bring the benefit of 5G to AOI and AMR applications and solve the factory automation pain point. Wiwynn's O-RAN based 5G SA Sub-6 O-DU and O-CU solution running on Wiwynn EP100 fulfills the requirements of O-DU/O-CU and reduces the setup efforts.
- WNC demonstrates an O-RAN end-to-end system, with O-CU/O-DU running on a Wiwynn x86 server, supporting NG Backhaul, F1 Midhaul and 10GbE eCPRI Fronthaul. The O-RU is a Sub-6 indoor picocell (4T4R with 24dBm output power per channel). The same system passed the third O-RAN PlugFest interoperability test and is currently deployed in a 5G private network belonging to a large telecom operator in Taiwan.

About O-RAN ALLIANCE

The O-RAN ALLIANCE is a world-wide community of more than 320 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 specifications enable a more competitive and vibrant RAN supplier ecosystem with faster innovation to improve user experience. O-RAN based mobile networks 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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