O-RAN ALLIANCE Delivers New Specifications, "Bronze" Open Source Software and New Virtual Exhibits of O-RAN Solutions

- O-RAN has recently published 23 new or updated specifications and the O-RAN Use Cases and Deployment Scenarios white paper
- The 2nd release of O-RAN software "Bronze" adds support for new key elements of the O-RAN architecture and updates aligned with the latest O-RAN specifications
- O-RAN Virtual Exhibition adds more demonstrations of O-RAN based technologies

Bonn/Germany, July 1, 2020 – The O-RAN ALLIANCE has continued its progress towards making the Radio Access Networks (RAN) truly open, intelligent, virtualized and fully interoperable.

The O-RAN ALLIANCE welcomes TELUS Communications Inc. and U.S. Cellular as new operator members, bringing the total to 26 major carriers. O-RAN now has over 200 companies driving the definition and realization of O-RAN technology.

Recently Released Specifications and White Paper

Published in February 2020, the O-RAN Use Cases and Deployment Scenarios white paper introduces the initial set of O-RAN use cases and cloud native deployment support options.
O-RAN use cases drive the O-RAN architecture and demonstrate its unique benefits, including utilization of AI/ML modules to empower network intelligence through open and standardized interfaces in a multi-vendor network. The white paper also introduces the O-Cloud cloud computing platform that can host relevant O-RAN functions to enable flexible deployment options in virtualized telco clouds.

Recently published specifications bring new or updated features to all parts of the O-RAN architecture, allowing vendors to progress with improved O-RAN based implementations. For more details, please check this O-RAN Blog post.

O-RAN Software Community Bronze Release

On June 21, 2020, working with the Linux Foundation, the O-RAN SW Community published its second SW release dubbed "Bronze." The software adds support for new key elements of the O-RAN architecture and provides updates to align with the latest O-RAN specifications:
- The initial release of an A1 policy manager and an A1 controller that implements the Non-Real-Time Radio Intelligent Controller (Non-RT RIC) architecture.
- The Near-Real-Time RIC updated to current O-RAN E2 and A1 specifications with 5 sample xAPPs.
- Initial O-CU and O-DU Low/High code contributions that support a FAPI framework and integration between the O-DU and RIC with E2 functionality and subscription support.
- A Traffic Steering and Quality Prediction use case leveraging an E2 interface data ingest pipeline to demonstrate the functionality of RAN traffic steering with an E2 interface KPI monitoring capability.

- OAM use cases that exercise Health Check call flows including the Near-RT RIC and its O1 and A1 interfaces.

"The new use cases, the Bronze software release, and the new O-RAN ALLIANCE members are indications that this global forum is working exactly as intended, reaching across borders to drive innovation and build consensus," said Andre Fuetsch, Chairman of the O-RAN ALLIANCE and Chief Technology Officer – Network Services, at AT&T. "As this coalition evolves, we look forward to seeing how it continues to broaden access to 5G and other new access technologies."

"Over the past 6 months, O-RAN working groups and the O-RAN Software Community have extensively engaged to achieve tight alignment between the specifications and the Bronze release open source code," said Chih-Lin I, the Co-Chair of O-RAN Technical Steering Committee. "Specific progress related to both the Non-RT-RIC and the Near-RT-RIC frameworks and associated key interfaces deserves special mention for its importance in enabling AI/ML capabilities in RAN. The O-RAN virtual showcase further demonstrates the growing momentum towards global adoption and deployment of O-RAN solutions."

"Ericsson is actively engaged in shaping the future of the O-RAN initiative by enabling Non-RT RIC (Non-Real-Time RAN Intelligent Controller) and A1 interface to support fine-grained intelligent steering of the RAN," said Per Beming, Head of Standards and Industry Initiative in Ericsson. "During OSC Bronze release, Ericsson continued as the key contributor to Non-RT RIC project by improving support for intent based intelligent RAN optimization using A1 interface. This specific capability allows operators to leverage both RAN and non-RAN data to enrich end user experience."

"The work within the O-RAN ALLIANCE is a great example of how strong industry collaboration can help accelerate technology innovation," said Udayan Mukherjee, Intel Fellow, Network Platforms Group and Chief Technologist, Wireless Infrastructure, at Intel. "As a major contributor to the FAPI library specifications, architectures and software in O-RAN, Intel is pleased to see how this work can enable an O-RAN Distributed Unit platform that is compliant with O-RAN standardized stack interfaces."

"The O-RAN Software Community has reached an important achievement with its second software release. This milestone is the result of a tremendous effort from across the O-RAN community," said Gil Hellmann, vice president, Telecom Solutions Engineering, Wind River. "As the lead for the INF project delivering the edge cloud infrastructure portion for the O-RAN workgroup based on the Yocto and StarlingX open source projects, Wind River looks forward to continuing our contributions to the community to accelerate the commercialization of 5G vRAN."

To learn more about the O-RAN Software Community "Bronze" release please read this O-RAN Blog post, and to access the code, check out the O-RAN Software Community website.

The O-RAN Software Community has been open to any participants that want to get involved in the creation of software for future RAN – for more details please visit https://www.o-ran.org/software.

Expanded O-RAN Virtual Exhibition

With the cancelation of MWC-Barcelona, on April 21, 2020 the O-RAN ALLIANCE created an online showcase. The O-RAN Virtual Exhibition includes demonstrations of real O-RAN based equipment in the form of videos, animations, charts and text.

The Virtual Exhibition currently hosts 31 demos presented by 38 O-RAN companies. O-RAN plans to keep adding more content and features to make its virtual showcase a valuable tool for RAN industry players to present real-world solutions embodying O-RAN's architecture and specifications.

In addition to previously announced demos, O-RAN member companies have recently created 12 new virtual demonstrations of real O-RAN technology:

The first demo sponsored by SageRAN demonstrates end to end high throughput traffic running over through SageRAN's 5G Stand Alone Open RAN Stack. This demo includes both X86 and ARM based O-DU/O-CUs and an eCPRI based O-RU.

The second demo sponsored by Keysight demonstrates Keysight's O-RAN Test Solution for O-RUs. This test suite enables NEM development/manufacturing, Operator, and OTIC Labs to accelerate O-RU conformance testing.

The third demo sponsored by VIAVI demonstrates VIAVI's O-RAN validation Solution for O-CU subsystem test. This complete wraparound framework enables NEMs, Operators, OTIC Labs and integrators to ensure that the O-CU can be robustly tested and optimized for high-quality and performance.

The fourth demo sponsored by Benetel demonstrates a 5G Non Standalone (NSA) platform comprised of Benetel's product family of 4G & 5G Remote Radio Units, developed in compliance with the O-RAN specification, and a O-CU & O-DU implementation that is based on the OAI software stack and supports O-RAN's 7.2x open fronthaul specification.

The fifth demo sponsored by Parallel Wireless demonstrates a unified 2G through 5G cloud-native O-RAN solution. This makes Parallel Wireless's software-based Open RAN stack easy to manage and delivers cost-savings to MNOs using it to modernize or expand their networks.

The sixth demo sponsored by ArrayComm showcases two O-RAN Whitebox demonstrations: The first demo is an end to end demo using an ARM Based Multi-vendor Whitebox 5G gNB. The second demo demonstrates a Whitebox's FPGA real time downlink bit processing (CRC, FEC, RateMatching) and uplink bit (CRC, FEC, RateMatching, HARQ) processing throughput test.

The seventh demo sponsored by Lenovo and NTS demonstrates an integrated small cell solution based on cloudification and virtualization. This demo showcases the decoupling of hardware and software based on O-RAN architectural principles.

The eighth demo sponsored by NVIDIA demonstrates an O-RAN Open Fronthaul-based hyper converged 5G CloudRAN, Core Network and MEC solution for the edge. This demo showcases the value of NVIDIA GPU and Mellanox SmartNIC-based, cloud-native, and scalable NVIDIA EGX platform, that enables software-defined, high performance and low latency solution on COTS servers.

The ninth demo sponsored by Comba Telecom showcases macro open RAN high efficiency multi-RAT RRU solution fully compliant with the O-RAN architecture supporting Split 7-2x and Split 8 fronthaul interface to O-DU, as well as E2E 5G NR indoor Open RAN solution built upon Intel-based server platform and Intel FPGA.

The tenth demo sponsored by Baicells, QCT and Keysight demonstrates the 5G SA indoor pico cell solution with multiple O-RUs via Fronthaul Gateway based on Indoor Pico Cell (IPC) Hardware Reference Design (HRD). To verify the performance of IPC HRD, the multi-UE emulator is used to test the cell merging as well as active UE numbers.

The eleventh demo sponsored by Baicells, QCT, Wind River, Keysight and China Unicom demonstrates the E2E Indoor Pico Cell solution based on IPC HRD and Open Cloud platform. In addition, the co-platform for both O-CU/O-DU and 5GC are tested with multi-UE emulator to showcase the commercial readiness for practical deployment.

The twelfth demo sponsored by Ericsson illustrates how the OSC (O-RAN Software Community) A1 controller function supports QoE refinement in RAN through the use of A1 policies. This specific capability allows operators to implement policy aware service assurance, application aware QoE prioritization and perform continuous evaluation of current vs. target QoE. O-RAN's Non-RT RIC function and A1 interface enable fine-grained and intelligent control of the RAN.

About O-RAN ALLIANCE

O-RAN ALLIANCE is a world-wide community of over 200 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, 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-compliant mobile networks will at the same time improve the efficiency of RAN deployments as well as operations by the mobile operators. To achieve this, 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 a short video describing O-RAN's progress, see www.o-ran.org/videos
For more information please visit www.o-ran.org

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