For yet another year OSA and its community grew and evolved together.

Participation in new projects, new members, development of the current activities, and joint projects. We are enthusiastic to share the latest news from the Alliance with you.

Please keep reading to learn more!

---

**Fall 2022 OAI North American Workshop**

The OSA team went back to the US after a prolonged COVID-imposed absence to continue the momentum built by the community at the last in-person 2019 North American Workshop.

This Fall 2022 Workshop was unique. We demonstrated 22 live demos all based on the community's work on OAI: a record and a testimony of your trust in OAI's stability and feature readiness. Inspiring talks and panels also made this event a great success.

We thank you all for your participation, and we hope to see you in our next Workshop!

---

**OAI TEAM**

Welcome to our 3 new teammates!

- Sagar Arora
  - OAI CN group
- Teodora Vladic
  - OAI RAN group
- Romain Lacroix
  - OAI CN group

---

**New partners**

- Vodafone
- NVIDIA
- Luo Wave

The OSA now counts:
- 13 Strategic Partners
- 15 Associate Partners

---

**Important coming dates**

- OAI 2023 Summer Workshop
- OAI Webinar: January
- 2023 MWC Barcelona
The NVIDIA Aerial platform which includes GPU-accelerated 5G L1 is playing a central role in the enablement of 5G RAN and future communication systems. It provides source code (C programming) for rapid prototyping and network deployment instead of time-consuming FPGA development.

NVIDIA and OSA are closely collaborating to accelerate and advance wireless research. At the OAI workshop in San Diego in November 2022, we showed an end-to-end gNB implementation comprising the OAI L2/L3 software and NVIDIA GPU-accelerated Aerial L1 as well as a third-party O-RU. The OAI L2/L3 is interfacing with the Aerial L1 through the standardized FAPI, an interface defined by the Small Cell Forum while the Aerial L1 interfaces with the O-RU using the O-RAN 7.2 fronthaul interface.

The Allbesmart downlink throughput record race is not over!

In the previous summer newsletter, Allbesmart was able to run a downlink throughput of 479 Mbps. Four months after, Allbesmart can now run a downlink throughput of 800 Mbps with the OAI gNB and COTS UE!

AMD T2 Telco Accelerator Card Integration Into OAI

In the previous MWC Las Vegas and Barcelona, the team proudly showcased the AMD (Xilinx) T1 Telco Accelerator Card integration in OAI. At the end of the same year, we went a step further with the successful integration of the T2 card. The LDPC decoding is a computationally expensive task, and consumes up to 90% of the total RX processing time. Offload of the LDPC decoding to the dedicated hardware efficiently reduces the CPU load and processing time of the LDPC decoding, and this is where the T2 card comes in. We are now able to accelerate the data transmission in uplink by offloading channel decoding to the T2 card.

OAI Software Now Compliant with O-RAN 7.2

OSA is proud to announce that OAI 5G software is now compliant with O-RAN 7.2 split. The O-RAN 7.2 Fronthaul interface between O-DU and O-RU has been integrated into the OAI DU using O-RAN FHI library. An API is implemented between OAI PHY layer and O-RAN FHI library. The interoperability tests of O-RAN C/U plane and S-plane have been done between OAI DU and VVDN RU. OSA showcased the end-to-end 5G SA O-RAN 7.2 demo during O-RAN European Plugfest Fall 2022.
**SD Fabric Integration with OAI 5G Core Network**

The OAI team has successfully integrated and validated SD-Fabric UPF with OAI Core Network and OAI gNB using COTS UE. SD-Fabric UPF is a production-grade UPF which leverages SDN principles and p4 enabled data planes, capable of handling Tbit/s of data transfer.

This OAI's SD-Fabric setup will also act as physical UPF for Sop-node under SLICES project, where community of researchers will be able to perform experiments around this ecosystem.

**More information here**

---

**Load Testing with Omec-gnbsim**

Based on the RAN emulator that the Open Networking Foundation developed, we were able to do load testing.

In the context of the 5G SA-Tester development, we took the opportunity to evaluate how many users our core supports. We deployed a basic NRF-based deployment with 2 UPF flavours (SPGWU-tiny and VPP-UPF). Then we deployed also 4 omec-gnbsim instances.

These instances would emulate 4 gNBs trying to connect hundreds of UEs. For registration, we are able to register 4000 UEs in less than 4 minutes.

For PDU session establishment, we are able to fully connect 550 UEs in 2 minutes.

**More details here**

---

**MAGMA Orchestrator Integration with OAI 5G Core**

OAI team have successfully integrated 3GPP compliant OAI Core network with magma Orchestrator framework. Magma Core ecosystem provides a converged core network for heterogeneous radio access systems including LTE, 5G and WiFi. We have introduced a middleware-based abstraction framework to interact with the Magma orchestrator which abstracts out Magma RPCs to REST APIs for OAI 5G core network. This abstraction layer is agnostic to the gateway type as far as the Magma orchestrator is concerned.

---

**PCF Initial Public Release**

The OAI team is proud to release the first public version of the PCF. It supports the N7 interface between PCF and SMF and implements the PDU session related policy control, which has been validated with an an edge-computing UL CL scenario. The PCC rules and policies can dynamically be configured using the file system. Additionally, the SMF has been updated to support the N7 interface.

---

**UE-Initiated PDU Session Release Support**

We integrated this functionality to our OAI-AMF and OAI-SMF network functions. This enables a smartphone to use the AirPlane On / Off feature. We’ve successfully tested it with commercial UEs.

---

**Testing with Commercial UEs (Release 15 & 16)**

We successfully tested OAI core network and OAI gNB with below COTS-UE and testing modules:

**COTS-UE:**
- IPhone 14
- Huawei P40Pro
- Google Pixel 5

**Testing Modules:**
- Quectel RM520N (Rel16)
- Quectel RM500Q (Rel 15)

Note: Iphone 14 and Huawei P40 pro both needs an IMS configured in SMF configuration file. For IMS we are using an asterisk server.

Starting release v1.5.0 we are adding Quectel RM520N in our CI testbed. This will make sure that all the develop and master images work well with Quectel modules.

---

**Raphaël Defosseux**

OAI DevOps Expert