



U.S. developments regarding ORAN

Panel Discussion

CEATEC 2024

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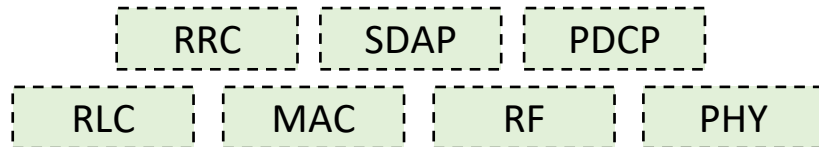
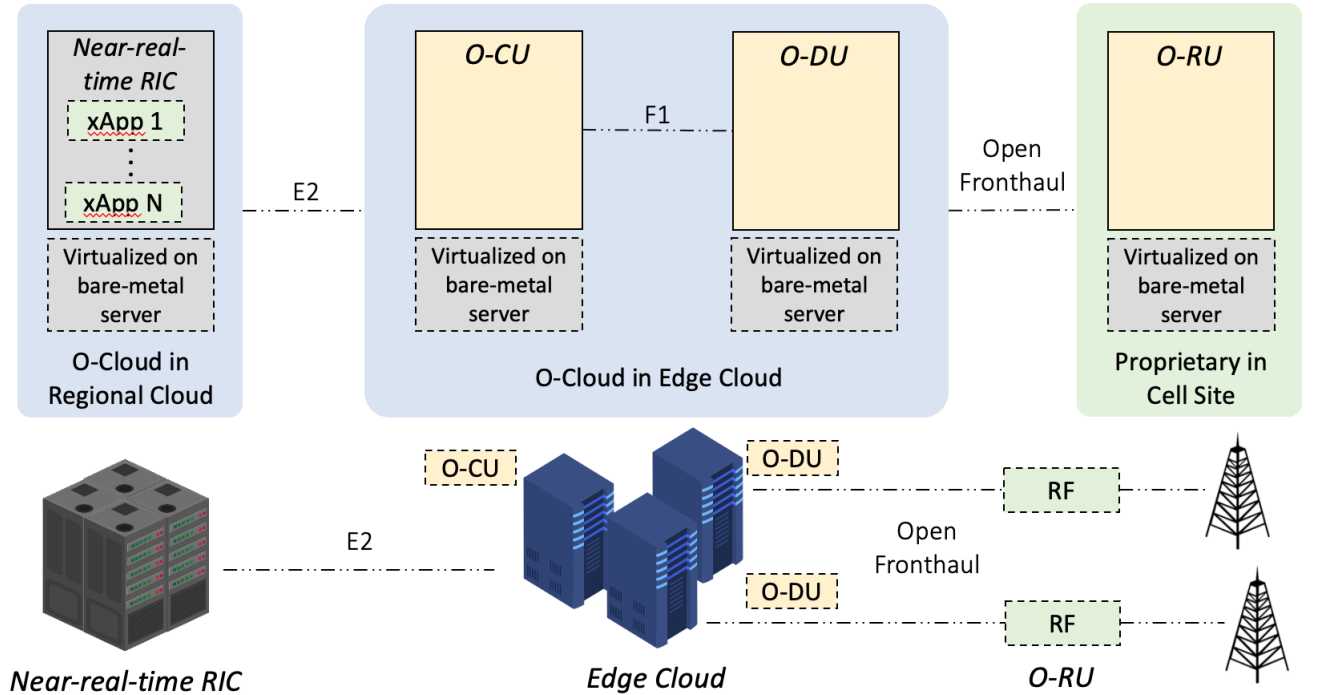
- Senior Director @ Institute for Wireless Internet of Things at NU
- Technical Director NSF Platforms for Advanced Wireless Research (PAWR) Project Office
- DoD FutureG Applied Research Program Senior Advisor
- NTIA ORAN Innovation Fund Strategic Advisor
- US FCC Technology Advisory Council 6G WG Co-Chair
- Board Appointments
 - ATIS NextG Alliance Technology WG
 - ORAN Alliance NextG Research Group
- Co-Founder of 6GSymposium

Open RAN: Much More than “Horizontal Disaggregation”

Traditional “black-box”



Open, programmable and virtualized



L. Bonati, M. Polese, S. D'Oro, S. Basagni, and T. Melodia, "Open, Programmable, and Virtualized 5G Networks: State-of-the-Art and the Road Ahead," *Computer Networks*, vol. 182, Dec 2020.

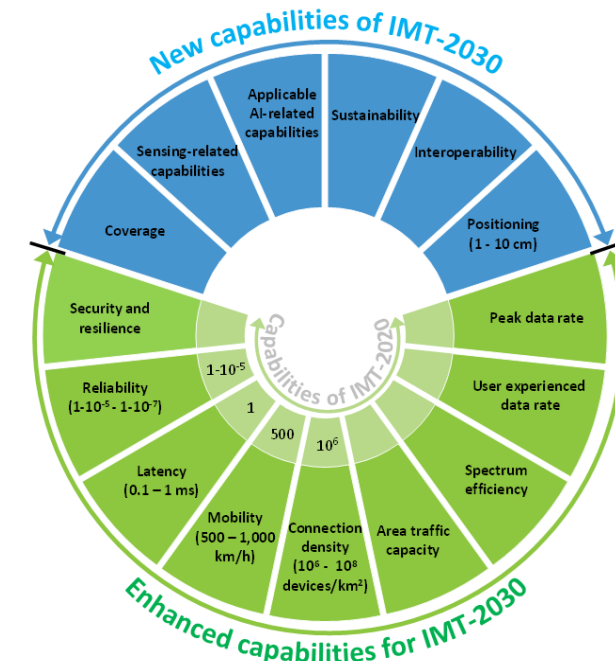
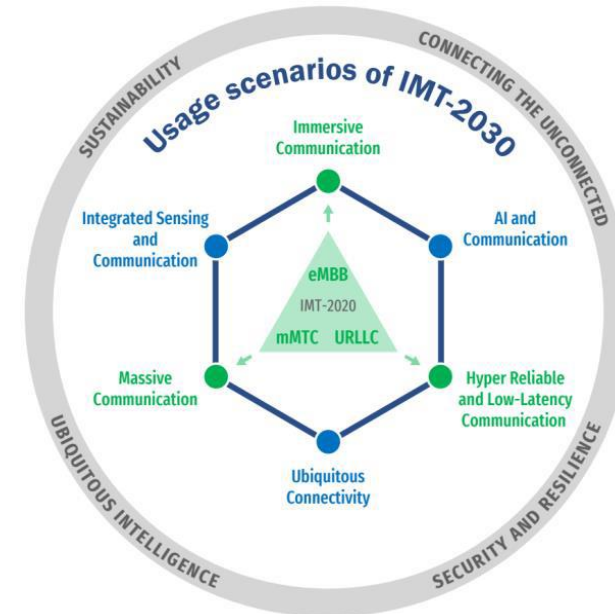
6G Evolution and Use Cases

Three Usage Scenarios are extensions from IMT-2020 (5G):

- Immersive Communication (from “eMBB”)
- Massive Communication (from “mMTC”)
- HRLLC (Hyper Reliable & Low-Latency Communication) (from “URLLC”)

Three Usage Scenarios are new:

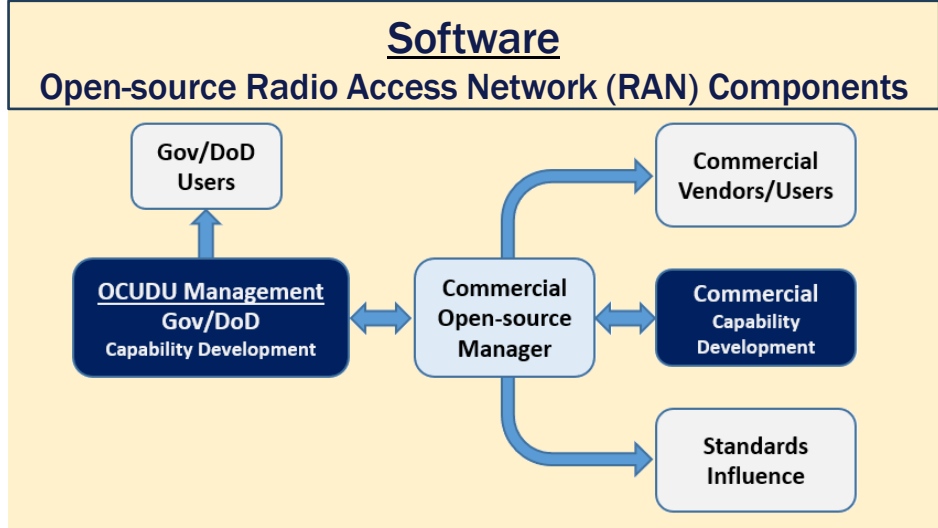
- Ubiquitous Connectivity
- AI & Communication
- Integrated Sensing & Communication



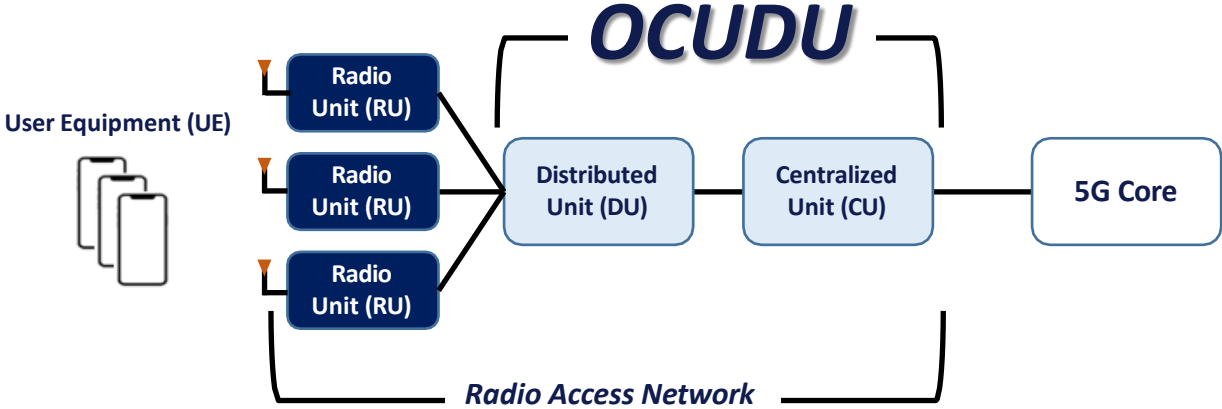
te for the Wireless
at of Things

OUSD R&E FutureG Minimum Viable Platform

Open Centralized Unit / Distributed Unit



**Secure | Ubiquitous | Reliable | Interoperable | Customizable | Flexible
Transparent | Cost Effective | Drives Innovation**



Virtualization of High-Performance Hardware



Transition for U.S. Production



A Reference Platform to build the DoD specific enhancements at smaller timescales

Program Overview

The Public Supply Chain Wireless Fund (Innovation Fund) is a \$1.5 billion competitive grant program authorized by Section 9202(a)(1) of the FY21 NDAA and appropriated by Div. A, Section 106 of the CHIPS and Science Act of 2022 over a 10-year period.

Vision

Develop a competitive global ecosystem of trusted telecommunications vendors that are fielding open and interoperable network equipment domestically and overseas.

Mission

Develop and implement a grant program that accelerates the adoption and deployment of open radio access networks (open RAN) through investments in interoperability, hardware maturity, security, and supply chain diversity.

FY21 NDAA Program Objectives

1. Promoting and deploying open technology
2. Accelerating commercial deployments of open, interoperable equipment
3. Promoting compatibility of new 5G equipment with future open, interoperable equipment
4. Managing integration of multi-vendor network environments
5. Identifying criteria to define equipment as compliant with open standards
6. Promoting security features
7. Promoting network virtualization

NOFO 1 and 2

Innovation Fund has released and is executing on two notice of funding opportunities

NOFO 1

The focus areas were on accelerating testing, conformance and performance of ORAN components:

- Research and Development (R&D), and
 - Testing and Evaluation (T&E).
- Awarded \$140M in grant awards

NOFO 2

• This NOFO focuses on accelerating the development of open RU products and improving the overall performance and capabilities of open RUs through targeted research and development.

- Open radio unit (RU) commercialization
- Open RU innovation

Anticipating up to \$420M in grant awards

COMING SOON: NOFO 3. Anticipated in Dec 2024

AI-RAN Alliance

The AI-RAN Alliance has three key initiatives:

- 1.AI-for-RAN:** Advancing the use of AI to optimize the performance of the Radio Access Network (RAN) of mobile systems.
- 2.AI-and-RAN:** Developing blueprints for infrastructures where AI and RAN workloads can coexist, collaborate, and share data seamlessly.
- 3.AI-on-RAN:** Enabling novel AI applications that require proximity to the RAN.

*6G networks must follow **open, programmable, virtualized, and AI-native** design principles*