

6G-XCEL NEWS

Project goals | Dissemination | Publications

Project kick-off

Team kicked off 6G-XCEL project in February 2024, in Dublin CONNECT Center. EU and US Partners discussed the project's work plan, identified challenges and risks, while the implementation schedule was set.

6G-XCEL@EUCNC 2024

EuCNC & 6G Summit Session 2 at Workshop 4 was about EU- US Cooperation, and our Professor Dan Kilper presented 6G-XCEL objectives at this well attended workshop.

US Partnerships

6G-XCEL ACCoRD Workshop and 2nd Plenary meeting took place in Wireless Information Network Laboratory (WINLAB) at Rutgers University on September 28. EU and US Partners have been sharing details and collaborating on the Research Infrastructures that will host the components of the developed DMMAI framework.



About 6G-XCEL

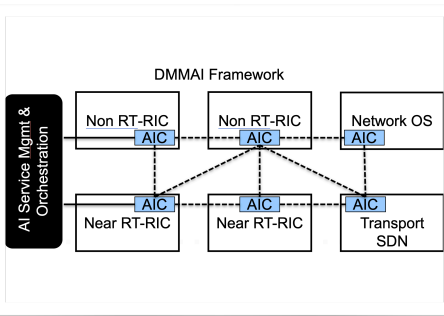
6G Trans-Continental Edge Learning project aka 6G-XCEL is an EU-US Collaboration project targeting to design and implement elements of a DMMAI (Decentralized Multi-party, Multi-network AI) so that it acts as a reference framework for AI in 6G. The goal of the framework is to enable the federation of AI-based network controls across network domains and physical layers, while promoting security and sustainable implementations for future AI/ML use-cases in 6G networks.

Visit <https://www.6g-xcel.eu/> to learn more on the project.

6G SNS

6G-XCEL project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under grant agreement No. 101139194. The JU receives support from the European Union's Horizon Europe research and innovation programme.





DMMAI framework

DMMAI Framework is being designed and developed by 6G-XCEL partners, with target to provide tools for research and development of decentralized AI methods for network control extending across radio and optical networks and network domains (aka 'multi-network' approach). Building on the O-RAN architecture approach as an open source platform and supporting multi-party applications (xApps/rApps) in a RIC, the focus is to study the practical use of such controls and their potential for 6G networks.

What is our ambition? To enable the teams involved in 6G-XCEL and the wider EU and US communities in which they are involved, to accelerate progress on AI use cases in 6G Networks.

The two use-cases investigated are:

1. 6G Spectrum Management
2. AI-enhanced resource management



6G-XCEL @EUCNC24

6G-XCEL participated in EUCNC 2024 & 6G Summit conference. Our Professor Dan Kilper presented 6G-XCEL objectives at this well attended workshop. Read more [here](#).

Professor Spyros Denazis and Dr. Christos Tranoris from University of Patras, Greece, organized also a workshop for O-RAN on Decentralized Multi-Party, Multi-Network AI (DMMAI)





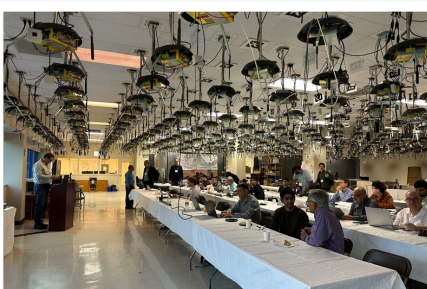
ACCoRD Workshop

6G-XCEL ACCoRD Workshop and 2nd Plenary meeting took place between September 30th - October 1st in the Wireless Information Network Laboratory (WINLAB) at Rutgers University-New Brunswick, NJ, USA.

The goal was to promote the collaboration with US partners and indeed there was great participation and lots of great presentations and discussions among EU and US partners including Intelligent Networks Research Presentations as well as Testbed demos (Cosmos Hands-on tutorial by Professor Ivan Seskar being one of the big highlights).

US partners, besides Rutgers University that hosted the event, included universities such as:

- Virginia Tech
- Princeton
- Columbia



6G-XCEL was at FYUZ#24

6G-XCEL team participated in two panel discussions [Telecom Infra Project #FYUZ24](#) Event in Dublin Ireland Nov 11-13, 2024.

Panel 1 "GenAI and Network Transformation: Challenges and Opportunities" discussed the main concepts of GenAI in networks, with people from Research, Academia and Industry bringing their insights around networks in RAN, Transport as well as Optical and Core domains.

Panel 2 on "6G and AI" which touched upon important topics around RAN Efficiency topics, what AI for networking and Networking for AI means amongst others.



Upcoming events

The upcoming project meetings for the first half of 2025 have been arranged:

- 3rd plenary meeting, February 25-26th hosted by Virginia Tech, VA, USA
- 4th plenary Meeting, July 10-11, hosted by DT and HHI, Berlin, Germany

In addition, 6G-XCEL will be participating in a number of public events in 2025 including EuCNC & 6G Summit 2025, June 3-6, Poznań, Poland.

See you in one of our venues!

Project Publications

6G-XCEL has published in a number of conferences:

M. Dzaferagic, M. Ruffini, D. Kilper, "Modular and Integrated AI Control Framework across Fiber and Wireless Networks for 6G", SIGCOMM 2024, HotOptics, <https://conferences.sigcomm.org/sigcomm/2024/workshop/hotoptics/>

M. Dzaferagic, et al., "Decentralized Multi-Party Multi-Network AI for Global Deployment of 6G Wireless Systems", EUCNC 2024, <https://www.eucnc.eu/programme/poster-session/> (arXiv link)

Acknowledgements by other authors:

"Empowering Programmable Wireless Environments with Optical Anchor-based Positioning" by Dimitrios Tyrovolas, that acknowledges 6G-XCEL, has been accepted for publication at IEEE Network Journal. More details at the following link: Empowering Programmable Wireless Environments with Optical Anchor-based Positioning