

Welcome to the PREDICT-6G newsletter!

We foresee to change the networking paradigm by creating a deterministic 6G network:
reliable, time sensitive and predictable.
How are we doing it? Keep reading!

Integration Week at 5Tonic Open Lab



From 20 to 24 January 2025, PREDICT-6G held the first Integration Week of the project at the 5Tonic Open Lab in Madrid.

In parallel with the first plenary meeting of 2025, held at the [Universidad Carlos III de Madrid](#) (UC3M), PREDICT-6G research and technical partners immersed into a week of work focused on implementing the theoretical framework developed in the past years. The activities were carried out in the [5Tonic Open Lab](#) in Madrid, one of two Open Labs where [PREDICT-6G use cases](#) are being tested.

As part of the Integration Week activities, some of the partners recorded short tutorials on the work developed during these days.

SCIENTIFIC CONTRIBUTIONS



O-RAN Intelligence Orchestration Framework for Quality-driven xApp Deployment and Sharing

The paper '**O-RAN Intelligence Orchestration Framework for Quality-driven xApp Deployment and Sharing**', developed as part of the PREDICT-6G research activities, has been published in the [IEEE Transactions on Mobile Computing Journal](#).

The rapid evolution of 5G networks, with diverse traffic classes and demanding services, highlights the importance of Open Radio Access Networks (O-RAN) for enabling RAN intelligence and performance optimisation. Machine Learning- powered xApps offer novel network control opportunities, but their resource demands necessitate efficient orchestration. To address these issues, OREO, an O-RAN xApp orchestrator using a multi-layer graph model, aims to maximise the number of RAN services concurrently deployed while minimising their overall energy consumption.

OREO's key innovation lies in the concept of sharing xApps across RAN services when they include semantically equivalent functions and meet quality requirements. Despite the NP-hard nature of the problem, numerical results show that OREO offers a lightweight and scalable solution that closely and swiftly approximates the optimum in several different scenarios. Also, OREO outperforms state-of-the-art benchmarks by

enabling the co-existence of more RAN services (14.3% more on average and up to 22%), while reducing resource expenditure (by 48.7% less on average and up to 123% for computing resources). Moreover, using an experimental prototype deployed on the Colosseum network emulator and using real-world RAN services, we show that OREO leads to substantial resource savings (up to 66.7% of computing resources) while its xApp sharing policy can significantly enhance quality of service.

This paper, written by Mungari, Federico; Puligheddu, Corrado; Garcia-Saavedra, Andres; and Chiasserini, Carla Fabiana is an extended version of the author's [IEEE INFOCOM 2024 paper](#).

[Read the journal paper](#)



Deliverable 2.3 Release 2 of PREDICT-6G MDP innovations

In early February 2025, the **PREDICT-6G consortium** released a new deliverable: D2.3 Release 2 of the PREDICT-6G MDP innovations.

This document reports the advances on multi-domain data plane innovations in the PREDICT-6G project. The technical topics follow those included in D2.1, such as the improvement of deterministic mechanisms in lower layers and the handling of non-deterministic domains. Additionally, this document contains original reflections to topics such as deployment domains and device side impact of PREDICT-6G. Finally, the deliverable provides a roadmap for the data plane features during the rest of the project's runtime and collects relevant publications.



Deliverable 3.3 Release 2 of AI-driven inter-domain network control, management, and orchestration innovations

In early February 2025, the **PREDICT-6G consortium released a new deliverable: D3.3 - Release 2 of AI-driven inter-domain network control, management, and orchestration innovations.**

This document presents the advancements in the functional design of the AI-driven multi-stakeholder inter-domain control plane (AICP) under the PREDICT-6G framework. It focuses on extending support for heterogeneous data planes, enabling the integration of multi-technology deterministic domains with seamless interoperability. AICP is empowered by four cornerstone enablers: i) AI/ML for dynamic resource optimisation, ii) Digital Twins for predictive service performance and system modelling, iii) Enhanced data management for real-time monitoring and insights, and iv) Cross-domain orchestration for end-to-end lifecycle governance of deterministic services. Additionally, the document explores advanced methodologies to abstract and represent diverse underlying network technologies within the AICP framework, addressing a fundamental requirement for effective E2E service lifecycle management.

EVENTS

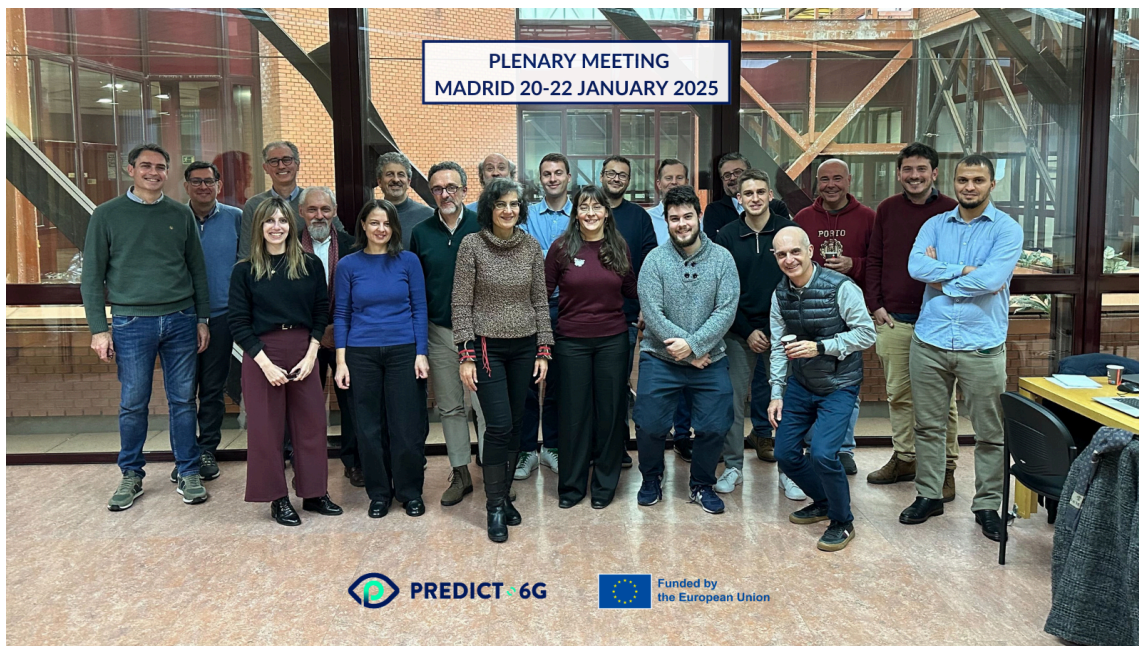


PREDICT-6G at the MWC 2025

[MWC Barcelona](#), the largest and most influential event in the connectivity sector, was held on 03-06 March 2025. It brought together more than 109k attendees from 205 countries and territories and over 2,900 exhibitors, among which was PREDICT-6G consortium member, [InterDigital](#). As in previous years, InterDigital had a strong presence at MWC, with [a stand](#) that included, among other things, several demos showing how innovation powers connected experiences at work, at play and at rest.

InterDigital's [booth showcased](#) cutting-edge research and industry collaborations. One of them was the **PREDICT-6G demonstration** called “**Novel Data Plane Concept for Deterministic Networking in an ISAC Setting**”, which was part of the ‘Integrated Sensing and Communication’ corner of InterDigital’s booth.

[Discover more](#)



PREDICT-6G first plenary meeting of 2025

The Universidad Carlos III de Madrid (UC3M) hosted the first PREDICT-6G Plenary Meeting of 2025. **The consortium partners met in Madrid (Spain)** for three days to review the status of the project and align on the work to be done in the remaining six months of the project.

On the 20-22 January 2025, the PREDICT-6G consortium held its latest plenary meeting in the [UC3M](#) premises. The agenda started with an overview of the project status by the Technical Director. The consortium **discussed the progress made so far** in terms of milestones, deliverables and KPIs.

[Discover more](#)

CAMPAIGNS

11F: Women in Science

The 11 February marks the [International Day of Women and Girls in Science](#). A milestone adopted in 2013 by the UN General Assembly to recognise that “full and equal access to and participation in science, technology and innovation for women and

girls of all ages is imperative for achieving gender equality and the empowerment of women and girls”.

To celebrate, and also vindicate this day, PREDICT-6G asked two of its researchers just one question, but it was an important one: **What advice would you give to a little girl who wants to pursue a career in science?**

Otilia Bularca, Project Manager IT at SIMAVI:

"Pursuing a career in science isn't different from pursuing any other career. The passion for science has nothing to do with gender statistics. Achieving the results you dreamt of will overshadow the possible need of defending your skills and competencies in a probably male-dominant environment."

WHAT ADVICE WOULD YOU GIVE TO A
LITTLE GIRL WHO WANTS TO PURSUE
A CAREER IN SCIENCE?

International Day of Women and Girls in Science

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Achieving the results you dreamt of will overshadow the possible need of defending your skills and competencies in a probably male-dominant environment.”

Otilia Bularca,
SIMAVI Software Imagination & Vision

  Funded by the European Union

Carla Fabiana Chiasserini, full professor at the Politecnico di Torino.

“I can only encourage her to pursue it, and **try and explore as much as possible unexplored paths**. Not to fear them and not to get discouraged ever, mishaps of any kind are just part of the game”.



International Day of Women and Girls in Science

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*Carla Fabiana Chiasserini,
Politecnico di Torino*



UPCOMING EVENTS



Upcoming events

As PREDICT-6G enters its final months, the consortium partners are showcasing the results of the use cases and presenting the latest publications and papers at various events over the coming months. Here is a list so you **don't miss any of the events taking place in 2025.**

[Discover all the upcoming events](#)



PREDICT-6G

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