DETERMINISTIC6G

First year Newsletter

DETERMINISTIC6G

Key Facts

Project start: 01.01.2023

Duration: 30 months

EU funding: 5,840,451.00 €

Abstract

The DETERMINISTIC6G project aims at developing architectures and algorithms for scalable and converged future network infrastructures to enable dependable end-to-end (E2E) time-critical communication across wired and 6G wireless domains. The project addresses three central challenges of future deterministic E2E communication. These challenges are to design a new architecture for 6G systems providing predictable performance and its integration with TSN and DetNet, novel data-driven awareness of stochastically evolving network performance with time synchronization over heterogeneous domains, and leveraging novel digital twins of both 6G networks and cyber-physical systems to anticipate situational circumstances impacting determinism of networks and safety of cyber-physical systems.

This project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under grant agreement No. 101096504. The JU receives support from the European Union's Horizon Europe research and innovation programme.

Dear Reader,

The DETERMINISTIC6G project has been running for over a year now. This newsletter provides you with the most significant achievements and activities carried out during the first year of the project. In this issue, you will find highlights on the following.

- Deliverables and milestones
- Dissemination activities
- Upcoming events

We hope you will find this newsletter informative and inspiring as we continue to embark on our journey towards the vision of the project.

For further information, we welcome you to visit our webpage www.deterministic6g.eu

Follow us on LinkedIn and X for the latest updates.

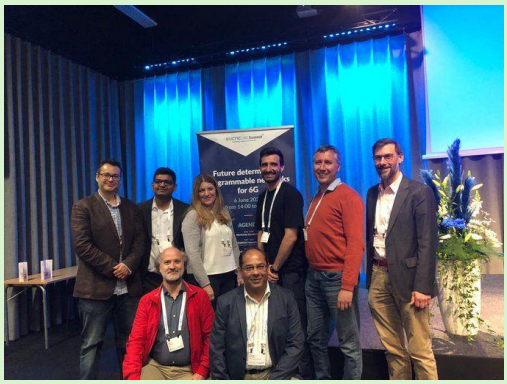
Deliverables and milestones

DETERMINISTIC6G focuses on defining system aspects for E2E dependable, time-critical communication, including the design of technology enablers, and development of a validation framework through system modelling and simulations.

The project activities started with the identification of visionary use cases that require dependable time-critical communication and compute. A detailed use case analysis including the derivation of key performance indicators and key value indicators is performed in deliverable D1.1. The use case analysis helps in developing architectural concepts and security aspects of the next generation E2E deterministic network infrastructure. The 6G-centric enablers essential for dependable time-critical communications are reported in deliverable D2.1. Packet delay correction is presented as a solution to ensure bounded and predictable latency behavior within 6G networks. The traffic management concepts for E2E deterministic communication based on time-sensitive networking and deterministic networking with 6G wireless nodes is documented in deliverable D3.1. The first release of the DetCom simulation framework is also developed. The digest D4.1 provides an illustrative description of the framework. A summary of the achievements and activities conducted during the first year is reported in deliverable D6.3. As per the project plan, by the end of the year, six project milestones were reached.

Face2Face meeting @ B&R

Joint workshop @ EuCNC



DETERMINISTIC6G @ TSN/A

Dissemination activities

The communication and dissemination plan, reported in deliverable D5.1 identifies academic events, conferences, workshops, and standardization activities where the project results are being disseminated. The following is a summary of the activities conducted during the first year.

- Ten keynotes and talks at various conferences and workshops
- Participation in two panel discussions
- Organized two joint workshops (EuCNC 2023, PIMRC 2023)
- Organized a special session at EuCNC 2023
- Organized a tutorial session at European Wireless 2023
- Six accepted publications
- Sixteen contributions proposed for standardization in 3GPP and IEEE

Upcoming events

DETERMINISTIC6G is creating impact through publications, tutorials, keynotes, and contribution to standards, highlighting the relevance of the project at international fora. The following are the upcoming events that DETERMINISTIC6G is organizing or participating in. We look forward to interacting with you at these events.

- EuCNC 2024, Workshop on architectural considerations enabling the IMT 2030 framework by European 6G R&D activities, June 3, 2024
- ECC workshop on Control with 6G, June 25, 2024
- MobiCom 2024, 2nd workshop on 6G Programmable Deterministic Networking with AI (6GPDN) – Open call for papers
- VTC fall 2024, Workshop on dependable wireless 6G communication – Open call for papers
- Joint webinar series with PREDICT-6G and DESIRE6G projects in summer and autumn.

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