

The development and deployment digital infrastructure: organization and sharing data ecosystems such as digital twins.

Meeting NECTAR Cluster 8 (Information and Communication Technologies)

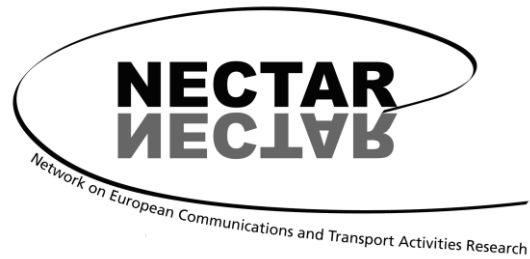
Trondheim (Norway) 01-02 September 2025

Call for Papers

The Mobility Lab MoST (MobilitetsLab Stor-Trondheim) of the Norwegian University of Science and Technology (NTNU) is organizing a workshop with Cluster 8 (Information and Communication Technologies) of NECTAR (Network of European Communications and Transportation Academic Researchers). The meeting will take place in **Trondheim, Norway (01-02 September 2025)** and will deal with the topic of: **“The development and deployment digital infrastructure: organization and sharing data ecosystems such as digital twins.”**. This meeting will bring together researchers from different disciplines and countries in a friendly environment to debate recent developments in the study of building data ecosystems enabling and facilitating data sharing as well as the use and combination of such data with models to develop digital twins capable of providing integral operational and tactical decision information to improve the usage of the physical world.

Topics of Interest

The digitalization and its developments are advancing fast. The advancement in technologies related to for example connectivity, cloud computing and AI provides all kind of opportunities to improve the mobility system with measures like Intelligent Transport Systems, Connected and Cooperative Automated Mobility, Mobility as a Service and advanced travel information systems. In addition, the system produces an enormous amount of data which, next to its primary purpose, can be valuable to better understand the mobility system providing decision support information for strategic decisions on how to design the physical infrastructure or where to locate specific facilities as well as operational decision feeding other decisions and measures. However, this data is distributed among various public and certainly also private parties like service providers and automotive companies. Furthermore, the complexity, connection and interaction between domains and its challenges are increasingly asking for integration and connecting these domains, and therefore also the data distributed among even more stakeholders, while seeking for solutions. Housing problems, accessibility, climate change including mitigation and adaptivity, energy grid congestion, maintenance task, urban vitality, health, equity, etc are all challenges which ask for an integral approach in



which the availability of data and its translation to multi-domain models is crucial to be able to understand the system and ways to intervene and improve. An adequate digital infrastructure in which data is shared within an ecosystem of stakeholders and integral digital twins can be developed and deployed is recognized as an important building block for this purpose. The past few years several initiatives have started on data sharing, dataspace and digital twinning including scientific research on the orgware, hardware, and software. However, it also showed the difficulties of developing and deploying such a digital infrastructure successfully. In this workshop we would like to bring together researchers working on the variety of subjects related to this development and deployment to learn from each other and help each other on improving their research.

Therefore, topics of interest include (but are not limited to):

- Organization and willingness to share data
- Federated data sharing and data analysis
- Data sharing architecture
- Data ownership
- Data ecosystem governance
- Dataspace design and use cases
- Digital twin development and deployment
- Digital twin visualization and decision support
- Balancing user privacy with need for data integrity, integration and accuracy twinning
- Interdomain modelling
- Privacy and ethical issues

We seek an open discussion about each presentation. Young starting researchers are encouraged to deliver a presentation.

Submitting an Abstract

Colleagues interested in presenting a paper are kindly invited to send an extended abstract of a maximum 250 words by email to Mahgol Afshari (mahgol.afshari@ntnu.no) and Agnar Johansen (a.johansen@ntnu.no) **by 15 May 2025 at the latest**. Please indicate the title, author(s), affiliations, corresponding contact, and three keywords. A maximum of three bibliographic references is allowed.

Travel and Accommodation Expenses

Up to 25 NECTAR Members are invited to present a paper. The participation of one author per paper is free and includes one night's accommodation, dinner and coffee breaks. NECTAR membership for the year 2025 is required to attend the meeting. Non-members can find details on how to join the association on the 'Membership' page of NECTAR's website: <https://www.nectar-eu.eu/membership/>



Important dates

Abstract Submission: **15 May 2025**

Full paper submission: **15 June 2025**

Meeting Dates: **01-02 September 2025**

The Venue

The meeting will be hosted at NTNU Trondheim.

Publication

Works in progress and not published papers will be discussed. No proceedings will be published. Publication of the works presented (in either a special journal issue or a book) will be discussed in the workshop.

The Organising Committee

Mahgol Afshari, MoST Norwegian University of Science and Technology (Norway)

Agnar Johansen, MoST Norwegian University of Science and Technology (Norway)

Aashish Adhikari, MoST Norwegian University of Science and Technology (Norway)

Eran Ben-Elia, Ben-Gurion University of the Negev (Israel)

Luc Wismans, University of Twente (the Netherlands)

Siiri Silm, University of Tartu (Estonia)

Marina Toger, University of Helsinki (Finland)

Maria Attard, NECTAR chair, University of Malta (Malta)

NECTAR is a European-based scientific association. The primary objective is to foster research collaboration and exchange of information between experts in the field of transport, communication and mobility from all European countries and the rest of the world. It is a multidisciplinary social science network. It brings together a wide variety of perspectives on transport and communication problems and their impacts on society in an international perspective. For further information see: <http://www.nectar-eu.eu>