

Smart Cycling

NECTAR Joint Cluster 4/8 Workshop

Enschede, the Netherlands
25-26 March 2026

Call for abstracts – extended deadline

It is our pleasure to invite you to a joint workshop of NECTAR Cluster 4 (Urban Mobility Transitions) and Cluster 8 (ICT) which will be held at the University of Twente, Enschede, the Netherlands, 25th and 26th March 2026.

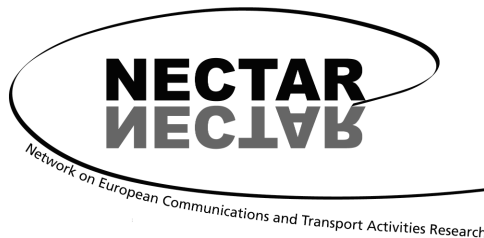
Main topic

In many countries around the world, the number of people who are cycling is increasing. The COVID-19 pandemic stimulated the shift towards active mobility and triggered governments to invest more in cycling infrastructure and other policies to promote cycling. With the increasing use of smartphones and e-bikes, digital infrastructure and digital applications, researchers, industry, and policy makers are also increasingly interested in developing smart cycling systems to make cycling safer, more reliable, easier to use, and more desirable by improving the cycling experience. As an umbrella term, “smart cycling systems” can refer to intelligent and cooperative systems (ITS and C-ITS), digital applications, digital services, and products (e.g., wearables, cameras, sensors, etc.) that are developed based on cycling-relevant data and technologies.

Smart cycling systems also creates an opportunity to collect more comprehensive and real-time data on cycling patterns, which are far less available compared to data on motorized vehicles (except for some examples for sport biking). The data collected by these systems (e.g., cycling infrastructure and cycle use such as counts) can be utilized for several tasks ranging from infrastructure planning, safety assessment, and cycling promotion to smart routing and development of navigation apps. Moreover, data on quality of the infrastructure can be used for maintenance planning and floating bike data can be used to analyse speed and delays on the main cycle routes.

In this workshop, we will focus on the research examining the potential of smart cycling systems to improve objective and perceived safety of cyclists. These systems are particularly important for dense urban areas where adding bicycle infrastructure is challenging. Focus areas include but not limited to the hot/black spot warning systems, safe crossings for bikes, AI based solutions to measure (un)safety of intersection, improved prediction of crashes, detection and warning of dangerous intersections/situations, and real-time detection and prevention of conflicts involving cyclists. Digital tools and new data sources (e.g. smartphone data, GPS data, floating bicycle data) are also relevant as they can be instrumental in developing new research and generating novel insights.

We aim to bring together researchers, planners, practitioners and industry representatives on the theme of cycling, smart cycling and cycling safety. The workshop is combined with the closing conference of the Interreg North Sea Region project [MegaBITS](#) on March 25, 2026. The MegaBITS project aims to



bring digitalization of the cycling sector and increasing cycling shares and reducing carbon emissions in European cities by introducing cycling intelligent transport systems (ITS). At the conference, results of pilot projects in 7 cities/regions will be presented, targeting to improve cycling conditions including safety, reliability, speed, ease of use, comfort, and experience.

Topics of interest

The workshop focuses on methodological developments and new knowledge on cycling, smart cycling, and cycling safety. Topics of interest include (but not limited to):

- Potential of new digital active mobility data to increase cycling use and cycling safety
- Smart cycling systems that have potential to improve safety and comfort of cyclists with different socio-demographic characteristics and capabilities
- Measurements of the impacts of smart cycling (cycling ITS, digital applications and technologies, etc.) on user experiences, including perceived safety, ease of use and comfort.
- Evaluation of impacts of smart cycling on riding behaviour and actual traffic safety
- Analysis of cycling accessibility utilising new data sources
- The role of smart cycling in cycling policies
- Evaluation of the impact of smart cycling planning and mobility policies
- Critical discussions on the role of cycling and smart cycling in urban mobility transitions
- AI based solutions to measure (un)safety of intersection, improved prediction of crashes
- Simulation and crash prediction based on real-time data sources
- Simulation and prediction for decision support systems, such as agent-based simulation and dashboards.
- Real-time detection and prevention of conflicts involving cyclists
- Tactical planning and operations for cycling: safe crossings, avoiding conflicts, and real-time warnings including AI applications.
- Strategic planning for cycling and impacts such as finding better routes for new cycle lanes or collecting large scale data for AI models

Publication

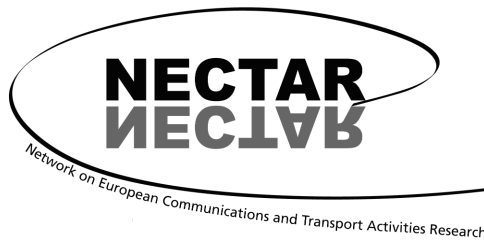
Papers presented at this workshop will be considered for publication in a high-quality journal (Journal of Cycling and Micromobility).

Venue

The 2-day NECTAR workshop will be organized by the University of Twente, in collaboration with the Municipality of Enschede and Mobycon. The workshop will be held on the University of Twente campus in Enschede, the Netherlands. The first day of the workshop is combined with the closing conference of the MegaBITS project. On this day, the NECTAR workshop will be a parallel session during the conference, and there will be joint plenary sessions, coffee and lunch break and drinks. The combined NECTAR/MegaBITS event provide a unique opportunity to exchange knowledge, insights and facilitate discussions between researchers, planners, practitioners and industry representatives on the theme of cycling, smart cycling and cycling safety. The second day of the workshop is a closed NECTAR event.

Participation and fees

Up to 25 authors will be invited to present a paper during the NECTAR workshop. Participation of one author per paper is free and includes one night's accommodation, dinner and coffee-breaks. NECTAR membership for the year 2026 (€80 or €50 for those under the age of 30) is required in order to attend the meeting. Non-members can find details on how to join the association on the 'Membership' page of NECTAR's website: <http://www.nectar-eu.eu/membership/>

**Abstract submission:**

If you are interested to participate in this workshop, please send an **abstract** of your presentation (about 500 words) including author names and affiliations and keywords, to m.b.ulak@utwente.nl before November 15, 2025 (extended deadline).

The notification of abstract acceptance will be distributed November 31, 2025.

Organizing committee

Baran Ulak, University of Twente

Karst Geurs, University of Twente, NECTAR vice-chair

Alejandro Tirachini, University of Braunschweig, NECTAR Cluster 4 co-chair

John Östh, Oslo Metropolitan University, NECTAR Cluster 4 co-chair

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Olivier Bonin, Université Gustave Eiffel, NECTAR Cluster 4 co-chair

Luc Wismans, Goudappel/University of Twente, NECTAR Cluster 8 co-chair

Eran Ben-Elia, Ben-Gurion University of the Negev, NECTAR Cluster 8 co-chair

Siiri Silm, University of Tartu, NECTAR Cluster 8 co-chair

Marina Toger, University of Uppsala, NECTAR Cluster 8 co-chair

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>