3rd Newsletter

Welcome!

November 2024

Welcome to the third issue of the CONDUCTOR newsletter!

The summer and autumn turned out to be a busy and productive period for the CONDUCTOR project. Apart from our intensive scientific and technical activities, we actively participated in various events, which have provided us with valuable opportunities to disseminate our findings and share the developments we have achieved so far. At these events, we were able to present our work and connect with other projects and stakeholders from the mobility sector.

In this issue of our newsletter, you will find more details about these events, including the key findings and outcomes of our participation. As we continue on this exciting journey, we remain focused on our goals and strive to maximise the impact of our innovative solutions. We thank you for your continuous support and look forward to sharing our latest updates and insights with you!

Yours sincerely,
CONDUCTOR Project Team

1 Integrated traffic management

2 Demand-responsive transport

3 Urban logistics

Athens' Great Walk: A Platform for Urban Renewal and Future Mobility

Athens has set itself ambitious climate targets and is aiming for a 61% reduction in greenhouse gas emissions by 2030 and climate neutrality by 2050. In its 2017 Climate Action Plan, the city focuses on improving public transport, promoting cycling and walking and increasing green spaces to improve air quality and reduce noise pollution. Initiatives such as the Attica Strategic Transport Plan and the urban regeneration project "The Great Walk" reflect the city's commitment to sustainable urban mobility and environmentally friendly transportation solutions. These efforts also include improving energy efficiency in municipal buildings and implementing long-term strategies to improve the city's infrastructure.

To achieve these goals, The Athens Urban Transport Organisation (OASA) is piloting innovative traffic management solutions in collaboration with the National Technical University of Athens and mobility technology companies such as Aimsun and Ridango. The pilot project aims to optimise the synchronisation of buses with subway and tram systems, reduce overall travel time and improve intermodality. This initiative is part of the wider CONDUCTOR project, which includes parallel pilots in European cities such as Madrid focussing on next-generation traffic management for cooperative mobility. Bax's cost-benefit analysis will assess the economic and societal impact of these pilots and provide valuable insights into the effectiveness of these mobility solutions in reducing congestion and supporting Athens' 2030 goals.

Andrian's Gate Express Bus.

Connected and efficient multimodal traffic and fleet management systems

Cooperative Connected Autonomous Mobility (CCAM) offers opportunities to improve multimodal traffic and fleet management through the use of connectivity and automation, leading to increased road safety, environmental benefits and improved network performance. The CONDUCTOR project uses traffic simulation modelling to virtually assess the impact of traffic and fleet management strategies in combination with connected and automated transport systems. One of our Use Cases, implemented in three pilot cities - Athens, Almelo and Madrid - focuses on innovative traffic management solutions such as incident management and optimised last-minute delivery services.

Aimsun, together with the project partners Deusto and Nommon, are playing a key role in adapting and improving the simulation models to ensure the interoperability of traffic management and fleet strategies. Our use case in Madrid focuses on the recovery from disruptive events by simulating how vehicles can communicate with their environment while testing different levels of CCAM integration to reduce travel delays, emissions and financial impacts. Another use case investigates the urban distribution of goods by using CCAM-enabled vehicles for Demand Responsive Transport (DRT) to coordinate last-mile deliveries during off-peak hours. Finally, machine learning and data fusion techniques have been developed specifically for the needs of the CONDUCTOR use cases in order to estimate and evaluate the effectiveness of the integrated mobility solutions.

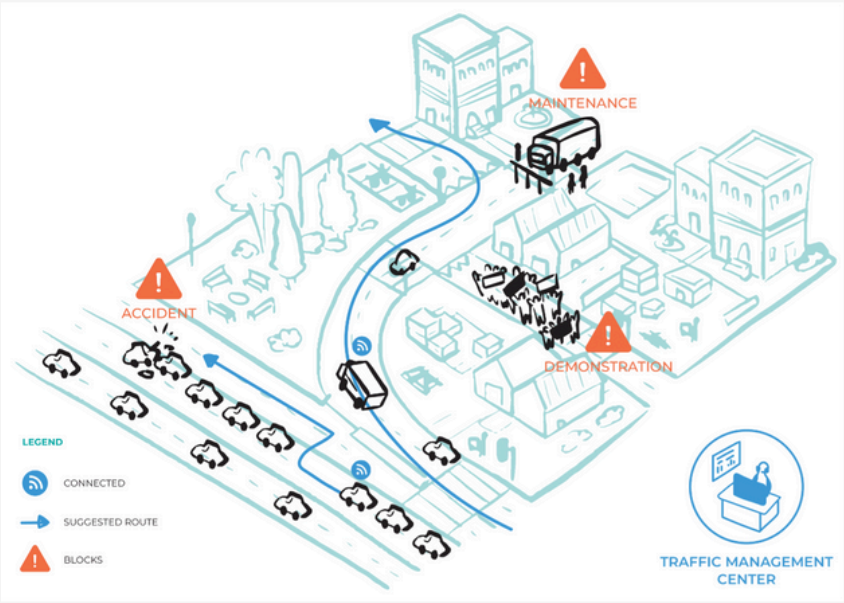

Illustration of the Madrid use case on integrated traffic management.

CCAM Multi-Cluster Meeting: Cluster 4 Insights

The CCAM association organised a multi-cluster in Brussels on the 10th of October 2024. The CONDUCTOR project was invited to give a presentation during the breakout session on "Cluster 4: Integration of CCAM in the transport system". Together with the on-going **AUGMENTED CCAM** and **IN2CCAM** projects, we contributed to the discussion on how such projects and initiatives can feed into future large scale demonstrations.

The breakout sessions allowed each project to present key findings and identify specific insights with the potential for further investigation and implementation in large-scale demonstration activities. The discussions, supported by interactive feedback tools, allowed for a deeper exchange of ideas on critical aspects needed to scale up CCAM technologies.

Our project manager Flavien Massi presenting the CONDUCTOR project at the CCAM Multi-Cluster meeting in Brussels.

CIVITAS FORUM in Parma, Italy

Athina Tympakianaki from **Aimsun** represented the CONDUCTOR project during the parallel session “Enhancing traffic management with digital twins and AI” of the CIVITAS Forum organised in Parma, Italy, from 1 to 3 October 2024. A fruitful panel discussion with representatives from the EU projects **URBANE**, **CONDUCTOR**, **FRONTIER**, **SYNCHROMODE**, **TANGENT**, **DELPHI**, **ACUMEN**, and moderated by CINEA coordination manager Thiago Tavares, focused on the role and benefits of Digital Twins and AI as well as CCAM technologies in multimodal traffic management.

The CIVITAS Forum was a great opportunity for fostering conversations and initiatives to collaborate on the development of sustainable, smart and inclusive mobility solutions through EU-funded projects.

CIVITAS Forum in Parma, Italy, from 1 to 3 October 2024.

CONDUCTOR at the 88th Thessaloniki International Fair

The Athens Urban Transport Organisation (OASA) participated as an exhibitor at the 88th Thessaloniki International Fair (TIF), held from 7 to 15 September 2024. The fair attracted more than 221,000 attendees who had the chance to visit the booth of the 1,300 exhibitors. OASA's presence spanned two booths, where information about the CONDUCTOR project were disseminated using our promotional materials. Attendees were also able to speak directly to Ms Stella Papagianni, who coordinates OASA's involvement in CONDUCTOR, to find out more about the progress and objectives of the project.

Ms Stella Papagianni presenting CONDUCTOR at TIF.

The CONDUCTOR General Assembly in Munich, Germany

The fourth General Assembly of the CONDUCTOR project took place in Munich, Germany on 18 and 19 September. The meeting provided an opportunity to review the progress of the technical tasks and to have detailed discussions on the ongoing development of our five pilots. As we continue to focus on the evaluation and refinement of the pilots, this phase represents an important milestone in realising the goals of the CONDUCTOR project.

With only one year remaining, the consortium is intensifying its efforts to increase the project's presence at key industry events and to disseminate CONDUCTOR's progress through publications. Furthermore, we are approaching a crucial phase for the exploitation of the project results, where our partners will focus on translating innovative solutions into practical applications aimed at improving the public transport and mobility sector.

Fourth CONDUCTOR General Assembly in Munich.

Liaison with other projects

Joint session at ITS World Congress

In an important step towards advancing Cooperative, Connected and Autonomous Mobility (CCAM), the CONDUCTOR and IN2CCAM projects, both funded under Horizon Europe call CL5-2022-D6-01-04, have jointly organised a Special Interest Session "**Opportunities and Methodologies for Integrating CCAM in Traffic Management**" at the ITS Conference in Dubai, taking place from 16 to 20 September 2024. At this session two experts from our consortium: Josep Maria Aymami from Aimsun and Marko Guček from GoOpti discussed the complex aspects of integrating CCAM into traffic systems.

DUBAI
ITS World Congress
16 -20 September 2024
Mobility Driven by ITS

The event explored the critical interactions between automated and traditional vehicles in mixed traffic environments and highlighted the need for machine-interpretable standards to ensure consistent vehicle behaviour. Topics included resilient, real-time data-driven transport management, CCAM integration architecture and practical insights into urban use cases. This collaborative session is an important step in preparing urban transport systems for the next wave of connected and autonomous vehicles.

Joseph Maria Aymami presenting CONDUCTOR at ITS World Congress in Dubai.

Upcoming events

GLOBAL MBLTY CALL 19 - 21 NOV 2024

DIVERSIFY CCAM

4 DECEMBER 2024 | Brussels

RTR CONFERENCE

11 – 13 February 2025 | Brussels

GDE GLOBAL DECARBONIZATION EXPO SOLAR B.E.S.S. AUTONOMOUS EVS

19 – 20 MARCH 2025 | PARIS

CONDUCTOR publications

Publications in Peer-reviewed Journals

- Petelin, G., Hribar, R., & Papa, G. (2023). Models for forecasting the traffic flow within the city of Ljubljana. European Transport Research Review, 15(1), 1-20, DOI: 10.1186/s12544-023-00600-6

Conference Papers

- Sánchez-Cauce, R., G. Cantú Ros, O., Ruiz, P., & Burrieza-Galán, J. (2024). Identification and characterisation of delivery trips from mobile network and logistic operator data. Mobile Tartu 2024
- Nisyrios, E., Nikolopoulou, A., & Gkiotsalitis, K. (2024). The Dynamic Pickup and Delivery Problem with Crossdock for Perishable Goods. ECCOMAS 2024
- Petelin, G., Rožanec, J., & Papa, G. (2024). Traffic Forecasting With Uncertainty: A Case for Conformalized Quantile Regression. ECCOMAS 2024
- Papa, G., Massi, F., & Vukašinović, V. (2024). Fleet and Traffic Management Systems for Conducting Future Cooperative Mobility. ECCOMAS 2024
- Lanzi, P., Brambati, F., Giampaolo, N., & Spiller, E. (2024). User-centred design for CCAM: a Holistic Approach Combining Stakeholders and Users' Needs with Regulatory Requirements. 10th Transport Research Arena
- Papa, G., Vukašinović, V., Sánchez-Cauce, R., Cantú Ros, O. G., Burrieza-Galán, J., Tympakianaki, A., Pellicer-Pous, A., Gosh, A., & Serrano, L. (2024). Fleet and traffic management systems for conducting future cooperative mobility. 10th Transport Research Arena
- Matthaiou, A., Nisyrios, E., Lai-Ying Chau, M., & Gkiotsalitis, K. (2024). Impact assessment of governance models on the integration of connected and autonomous vehicles. 10th Transport Research Arena
- Gkiotsalitis, K., Nikolopoulou, A. (2023). The Pickup and Delivery Problem with Crossdock for Perishable Goods. ITSC2023, DOI: 10.48550/arXiv.2311.15428
- Wolf, F., Engelhardt, R., Zhang, Y., Dandl, F., & Bogenberger, K. (2023). Effects of Dynamic and Stochastic Travel Times on the Operation of Mobility-on-Demand Services. ITSC2023, DOI: 10.48550/arXiv.2308.05535
- Hulleman, R. (2023). Sustainable Mobilityby providing Connected Mobility for all Modes of Transport. ITS European Congress, DOI: 10.5281/zenodo.11280221

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