5TH INTERNATIONAL CONFERENCE ON COGNITIVE MOBILITY

BUDAPEST, HUNGARY | OCTOBER 8-9, 2026

BOSCH BUDAPEST INNOVATION CAMPUS, HUNGARY

CONFERENCE PROGRAM

Cognitive Mobility

Hungarian Public Roads
(Magyar Közút)

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From intelligent transportation systems and traffic management to large-scale mobility operations, Hungarian Public Roads (Magyar Közút) delivers expertise, reliability, and innovation where it matters most.

Reference project: Proud organizer and host partner of TRA 2026 Budapest, Europe's leading transport research and innovation conference.

LET'S SHAPE THE FUTURE OF MOBILITY TOGETHER

Hungarian Public Roads (Magyar Közút)
National Road Operator of Hungary

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WELCOME

We are delighted to welcome you to the Bosch Budapest Innovation Campus on behalf of the organizers of the 5th International Conference on Cognitive Mobility – CogMob 2026.

Cognitive Mobility (CogMob) explores the interplay between mobility, transportation, vehicle engineering, social sciences, artificial intelligence and cognitive infocommunications. Its central aim is to provide a holistic understanding of how mobility can be modelled, enhanced and optimized by integrating artificial and human cognitive systems, treating the entire mobility ecosystem as a single CogMob entity. Sensors are now everywhere, and we know more and more about every dimension of mobility: infrastructure, vehicles, travellers, decision-making and logistics. Yet this data is created in separate domains. CogMob offers a place to discover what other fields are measuring, how they turn data into information, and how that knowledge can be useful in our own work.

Five years after the first edition, the CogMob community continues to grow: this year we received 117 submissions, more than ever before. The programme reflects how the field is evolving. Artificial intelligence has moved from a research topic to an everyday toolkit, and the question of trust and explainability is coming to the fore. New frontiers are opening as well, from drones as data sources to the coupling of safety and cybersecurity and circular fuels and materials. Engineering applications remain at the heart of our discussions across five sections, ranging from cognitive decision-making to powertrain and propulsion technology.

CogMob also aims to bring industry and academia together, and to show students how the mobility industry and its partner universities work hand in hand. Beyond the keynotes and technical sessions, we invite you to the live demonstrations and exhibition, the CogMob Awards ceremony, and on Friday the panel discussion and workshop on Mobility Education for a Changing Industry.

We extend our gratitude to the keynote speakers, session chairs and all contributors for their dedication. Our sincere thanks go to Robert Bosch Kft. for hosting the conference, and to our sponsors and partners, BMW, ZalaZONE, Tern Systems, Magyar Közút, HT Division, EVE, CATL, MOME, Maróti and Transpack, for their support. We especially acknowledge the devoted work of the CogMob Technical Program Committee and the organizing team, whose commitment has made this event possible.

We hope all participants of CogMob 2026 will find the conference intellectually stimulating and rewarding.

Prof. Máté Zöldy DSc.
General Chair
CogMob2026 Conference

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GREEN TRAFFIC CLOUD

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Research and Innovation for Autonomous Urban Mobility

Green Traffic Cloud is a research and development project of ZalaZONE, integrating automated vehicle technologies, high-definition cloud-based mapping and data-driven traffic management.

The project explores and validates solutions **for safer, more efficient and sustainable urban mobility**, including the real-world testing of SAE Level 4 automated vehicles.

Autonomous Mobility • Cloud-Based Mapping • Validation • Traffic Optimisation

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GENERAL INFORMATION

DATE & VENUE

CogMob 2026 will take place between 8-9 October, 2026 at the Bosch Budapest Innovation Campus in Budapest, Hungary (H-1103 Budapest, Robert Bosch str. 14).

OFFICIAL LANGUAGE

The official language of the Conference is English. No translation will be provided. Free WIFI is available during the conference.

BADGES

Identification badges are provided along with other conference materials upon registration. The organisers kindly ask you to wear them all the time during the conference. Please also note that your conference badge assures your entrance to conference premises and catering. Persons without badges may be refused.

PARTICIPANT KIT

Conference kits are provided for all registered participants. Please do not put personal belongings (money, ID Cards, mobile phones) in the conference bags, since many of similar bags will be around the conference venue, and they could be easily confused.

GENERAL REGULATIONS

We kindly ask all participants to observe the regulations of the host institution.

SOCIAL EVENTS

Welcome message of the Chairman Oct 8 (09:00)	Auditorium
Award Ceremony Oct 8 (13:20)	Auditorium
Banquet Oct 8 (19:30)	Hungarian Academy of Sciences (MTA) (H-1051 Budapest, Széchenyi István sqr. 9)

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OCTOBER 8, 2026

08:00-09:00 – REGISTRATION

09:00-10:25 – WELCOME & PLENARY SESSION I.

Welcome message of the Chairman (10')

Prof. Máté Zöldy

Trusted AI in safety-critical mobility (25')

Mr. Zoltán Szőke (Bosch)

From Digital Twin to Learning Digital Twin: Human-Centred Intelligent Manufacturing for Industry 5.0 (25')

Mr. Hans Peter Kemser (BMW)

Predictive demand modelling, dynamic pricing and automated rebalancing in car sharing in Budapest (25')

Mr. Bálint Vető (MOL Limo)

10:25-10:55 – COFFEE BREAK

10:55-12:40 – TECHNICAL SESSIONS

Auditorium ***Cognitive Powertrain & Propulsion Technology***	**Session Chair: András Lajos Nagy**
Máté Boros, Ádám Nyerges and Péter Raffai	Thermal Coupling and Surge Dynamics in Turbocharger Compressors: Effects of Coolant Temperature on Flow Separation
György Marton and András Lajos Dr. Nagy	A Robust Data Pre-processing and Synchronization Methodology for RDE Measurements
Aleksandr Šabanovič, Jonas Matijosius, Darius Vainorius and Arturas Kilikevičius	Machine Learning Driven Adaptive High-Voltage Pulsing for Hybrid DPF-ESP Systems in Urban Cycles
Kiran S, Edwin Geo Varuvel, Jonas Matijošius, Artūras Kilikevičius and Utku Kale	Closing the Loop on End-of-Life Tyres: Hydrogen-Enriched Waste Tyre Oil as a Circular Fuel for Sustainable Mobility
Mahmoud Said Jineid and Zyad Hakim	CFD-Based Comparative Assessment of Wankel and LiquidPiston Rotary Engine Architectures for Range-Extender Applications

Session Room I. ***Cognitive Necessity & Sustainability Drivers***	**Session Chair: Ádám Török**
Stephan Kuehnel	Regulation of German Professional Exams – Obscurity vs. Methodology
Petra Szakonyi	Transport Infrastructure and Service Quality as Determinants of Employability: A Mixed-methods Territorial Analysis from Hungary
Hazem Al-Mahamid, Ammar Al-Lami and Ádám Török	Demographic Risk Profiles of Road Traffic Fatalities in Europe: A Country-Level Analysis of Age and Gender Patterns
Balint Csendes	The long-term social effects of increased transport mobility: a historical review
Haitham Al Hasanat, Omar Alharasees, Mohammad Fawaier, Farzad Zolfaghari, Artūras Kilikevičius and Utku Kale	Green Mobility through Smart Platforms: Evaluating Tourists' Readiness for Energy-Efficient MaaS in Petra

Session Room II. ***Cognitive Decision-Making in Mobility***	**Session Chair: Szilárd Aradi**
Ondrej Stopka, Vladimír Ľupták and Jiří Hanzl	Enhancing Intersection Safety with Accident Data and UAV Records: A Case Study
Patrik Lukács and Viktor Nagy	Integrated Decision-Support Model for Assessing the Justification of Car-Sharing Implementation
Petra Szakonyi	Cognitive Dissonance in Sustainable Mobility: Decision-Making of University Athletes and Non-Athletes in Győr, Hungary
Hanan Alkhansa and Emese Makó	Simulation-Based Review of Pedestrian–Vehicle Conflict Analysis for Cognitive and Smart Urban Mobility
Anett Verebélyiné Gosztola	Cognitive Factors in Route Choice Decisions Under Congestion: A Stated Preference Study

Session Room III. ***Mobility Infrastructure & Resources***	**Session Chair: József Hlinka**
Jaroslava Kubáňová and Iveta Kubasakova	Strategy for evaluating and resolving issues with suppliers in the automotive industry
Zdenka Bulkova, Jozef Gašparík, Adam Torok, Martin Kendra and Rudolf Kampf	Competitive Tendering as a Tool for Improving Long-Distance Rail Services
Andrej Dávid, Jiří Tengler, Vladislav Zitrický	Handling Equipment in Danube Ports and Possibilities for Increasing Their Performance
Ágoston Winkler and Diána Henézi	Some Important Aspects of Public Transport Safety in Smart Cities
András Brautigam and Szabolcs Fischer	Life-Cycle Costs and Sustainability in the Management of Grooved Rail Side Wear

Session Room IV. ***Vehicle Systems, Materials & Sensing***	**Session Chair: Tibor Sipos**
Aijuan Li, Liwen Wang, Xiangsen Ning, Chao Sun and Bohan Yao	Optimal Controller Design for Two-wheel Self-Balancing Mobile Robot LQG
Alyona Lovska, Juraj Gerlici and Ján Dižo	Strength analysis of an open wagon body with an improved pivot beam design
Yawe John, Thomas Kivevele	Mathematical Modelling of a Novel Hybrid Solar–Biogas Dryer for Sustainable Agricultural Drying: Towards AI-Driven Digital Twins and Cognitive Control
Melih Yildiz, Hanifa Teimourian, Arturas Kilikevičius and Gyorgyi Kale-Halasz	Physical Reality for Data-Driven Models for Predicting Steady-State Flow Fields Around Airfoils
Daniel Gachulinec, Radovan Madleňák, Maroš Jakubec and Eva Jakubcová	Fleet-Matched Synthetic Data: Region-Specific Vehicle Generation for Cognitive Mobility

12:40–13:20 – LUNCH

13:20–13:40 – AWARD CEREMONY

13:40–14:55 – PLENARY SESSION II.

Collaborative unmanned systems for search and rescue (25')
Mr. Serdar Sanli (HT Division)

The Architecture of the Future Sky - How research, modularity and new technologies are enabling the next generation of Air Traffic Management (25')
Dr. Rita Somogyi (Tern System)

Can Cities Think? Cognitive Mobility as a Driver of Climate-Resilient Futures (25')
Dr. Mária Szalmáné Csete (BME)

14:55–15:20 – EXHIBITION VISIT & DEMO SLOT 1

15:20–15:45 – EXHIBITION VISIT & DEMO SLOT 2

15:45–16:15 – COFFEE BREAK

Simulator-Based Training Equipment for Advancing E-Mobility Education

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- HV Battery Simulator
- EV Charging Protocol Simulator
- HV Lock-out Simulator
- CAN Communication Protocol Simulator

For more information

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16:15-17:55 – TECHNICAL SESSIONS

Auditorium ***Cognitive Powertrain & Propulsion Technology***	**Session Chair: Barna Hanula**
Melih Yildiz, Serdar Şanlı, Arturas Kilikevičius and Utku Kale	Overcoming the Barriers to Stratospheric Flight: Technological Challenges and Innovative Solutions
Bence Zsoldos, András Lajos Nagy and Máté Zöldy	Understanding E85 pre-chamber combustion through computational fluid dynamics simulations of a single-cylinder turbocharged engine
Márton Virt	Evaluation of FKM Elastomer Compatibility with Hydrotreated Vegetable Oil and Oxymethylene Ether
Aleksandras Chlebnikovas, Benas Rimša, Gyorgyi Kale-Halasz and Artūras Kilikevičius	Dynamic Interaction Between NOx Formation, Excess Air Ratio and Thermal Regime in a Biomass Stove Equipped with a Honeycomb Catalyst
Miklós Diósy and Máté Zöldy	Influence of Short-Term Voltage and Current History on Dynamic Multilayer Perceptron Model for High-Voltage Battery Behaviour Prediction

Session Room I. ***Cognitive Necessity & Sustainability Drivers***	**Session Chair: Csaba Tóth-Nagy**
Tomáš Blodek, Pavel Vrtal, Tomáš Kohout and Jonáš Maleček	Influence of Vertical Sign Condition and Placement on Traffic Sign Recognition Systems
Mariarosaria Picone, Federica Maria Greco and Ilaria Henke	Decarbonization of the Transport Sector in the European Union: A Literature Review and Comparative Analysis of EU-27 Countries
Berlan Rodríguez, Yoisdel Castillo Alvarez and Zaur Aliyev	Electric Mass Transit in Lima: A Comparative Policy Analysis and the Circular Economy Imperative
Miroslava Mikusova, Antonin Fuchs, Romana Antczak-Jarzabska and Romanika Okraszewska	From Fuel Price Shocks to Sustainable Mobility: A Conceptual Framework for Household Adaptation and Public Transport Resilience in an Era of Recurring Energy Crises
Miroslava Mikusova, Azizbek Ergashev, Azizbek Nishonov and Vladimir Konecny	Economic and Environmental Costs of Public Transport Deficits in a Secondary City: A Data-Driven Cognitive Mobility Assessment of Jizzakh, Uzbekistan

Session Room II. ***Cognitive Decision-Making in Mobility***	**Session Chair: Dhinesh Balasubramanian**
Polina Görbe, Attila Bódis, Márk Bata and Tamás Bódis	Simulation-based learning of adaptive intra-logistics decision support system
Frank Lujaji, Akos Bereczky, Adam Torok, Mate Zoldy, Esebi Alois Nyari and Gerutu Gerutu	Europe-Africa Biomass-to-CHP Pathways for Sustainable Regional Mobility: A Conceptual Framework for Bio-Oil Upgrading and Dispatchable Electricity
Mykola Kurhan, Dmytro Kurhan and Szabolcs Fischer	Cognitive Risk-Oriented Decision-Making for Railway Level Crossing Recovery
Farzad Zolfaghari, Omar Alharasees, Artūras Kilikevičius and Utku Kale	Explainable Machine Learning for Operational Stress Scenario Classification in Rail Simulation
Amir Hajimirzajan, Milad Kazemian, Ahmad Davari Ghezelhesar and Vivien Révész-Jóvér	Hierarchical DBSCAN Clustering for Railway Accident Analysis: Prioritizing Risk Factors in Train-Pedestrian Collisions

Session Room III. ***Mobility Infrastructure & Resources***	**Session Chair: Horia Beles**
Andrej Dávid, Jiří Tengler and Vladislav Zitrický	Banana Cold Chain Technologies in Maritime Reefer Container Transport
Maja Violetta Kertész, Richárd Nagy and Zoltán Pásztor	Modeling Organizational and Meteorological Factors in Urban Winter Road Maintenance: Empirical Analysis of the PIARC International Survey Data
Assem Hussein, Richárd Horváth and Balázs Horváth	A Hybrid Dynamic Framework for Multimodal Corridor Response to Shock
Šimon Pagáč, Andrej Dávid, Maciej Klosak, Yasser Douimia	Multimodal Transport Optimization for Automotive Exports from Central Europe to North Africa: A Case Study of Kia Slovakia
Roland Csongvai, Samir Rasulov and Péter Pál Bakucz	Low-Dimensional Attractors Meet Fuzzy FTA: Integrated Reliability for Urban Traffic Nodes

Session Room IV. ***Vehicle Systems, Materials & Sensing***	**Session Chair: Jonas Matijošius**
Arturas Kilikevičius, Vytautas Makarskas, Egidijus Dragašius, Kristina Kilikevičienė, Jonas Matijošius, Algirdas Galdikas, Piotr Dubravskij, Jolanta Donėlienė and Darius Vainorius	Vibration-Based Prediction of EVA Gel Content in Photovoltaic Laminates Without Silicon Cells Using Operational Modal Analysis
Vlad Imre Tent, Florin Bogdan Scurt, Tiberiu Vesselenyi, Horia Beles, Bogdan Adrian Tolea and Ion Cosmin Gherghea	Data Acquisition for Load Assessment in the Body Structure of a Freight Transport Trailer
Gábor Sipos and Ádám Domina	External sensing for vehicle state estimation: observability of vehicle states using exteroceptive and infrastructure-based sensors
Levente Őrsi, Vivien Révész-Jóvér and Szabolcs Szalai	Investigation of the Industrial Applicability of Handheld Optical 3D Scanners

19:30–22:00 – BANQUET *(only for invited and full registrations)*

Hungarian Academy of Sciences

(H-1051 Budapest, Széchenyi István sqr. 9.)

OCTOBER 9, 2026

08:00–08:30 – REGISTRATION

08:30–09:55 – OPENING & PLENARY SESSION III.

Opening speech (10′)
Dr. Ádám Török

At the intersection of mobilities (25′)
Dr. Weinek Leonárd (FairCity Consulting Network)

Connecting data, optimizing operations and moving people seamlessly - Why does it matter? (25′)
Ms. Adrienn Martonfalvi (Hitachi)

Robotic Platform for Cognitive Railway (25′)
Dr. Aleksander Miltenovic (TUB)

09:55–11:35 – TECHNICAL SESSIONS

Auditorium ***Human-Machine Interaction & Behavioral Factors***	**Session Chair: Utku Kale**
Omar Alharasees, Haitham Al Hasanat, Mohammad Fawaier, Farzad Zolfaghari, Artūras Kilikevičius and Utku Kale	Deep Learning Synthesis of Decoupled PEAR Human Factors Vectors for Autonomous UAV Mission Risk Classification
Szabolcs Fischer	Empirical Observation of the Influence of Locomotive Driver Style on the Acceleration-Energy Correction Factor of Hungarian InterCity Trains
Farzad Zolfaghari, Omar Alharasees, Gyorgyi Kale-Halasz and Artūras Kilikevičius	Physiological Responses to Engine Failure in Real Flight: A Multi-Signal Wearable Study Across Pilot Experience Levels
Müzeyyen Şule Baklacı and Kristina Kilikevičienė	Occupational Health and Safety in Aviation: An Evaluation of Human Factors and Operational Communication in Pushback Operations
Faten Salman and László Jóna	Reliability and Timing of Public Transport Information: A User Experience Study of Mobility Challenges for People with Disabilities

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Session Room I. ***Cognitive Necessity & Sustainability Drivers***	**Session Chair: Ádám Török**
Ladislav Bartuska	Microscopic Emission Proxy Modeling Using UAV-Derived Vehicle Trajectories
Arturas Kilikevičius, Aleksandras Chlebnikovas, Gyorgyi Kale-Halasz, Jonas Matijošius and Darius Vainorius	Development and Investigation of an Electroacoustic System for Ultrafine Particle Reduction and Air Quality Improvement
Matija Kučinac and Zoran Lulić	Effect of network pruning on traffic emission estimates of arterial roads: A case study in Zagreb, Croatia
Peter Ficzere and István Györe	Cognitive Mobility and the Net Health Benefits of Cycling in Air-Polluted Urban Environments
Ilham Saiful Fauzi and Mate Zoldy	From Fossil Dependence to Sustainable Mobility: A Mathematical Modeling Perspective on Electric Vehicle Adoption under Government Intervention

Session Room II. ***Mobility Infrastructure & Resources***	**Session Chair: Attila Buzási**
Hanna Csótár, Márton Gábor Légrádi, Szabolcs Szalai and Szabolcs Fischer	Optimization of Speckle Pattern Parameters for Fixed DIC ARAMIS Measurement Configurations in Civil Engineering Applications
Ábris Bánki, Sarolta Tóth and Tibor Princz-Jakovics	Development options for the transport infrastructure of Rákosrendező
Marina Zanne and Bojan Beškovnik	The economics of digital twins in ports: costs, benefits, and pathways to value creation
Robertina Nikolić, Lena Pacek, Julijan Jurak and Mario Ćosić	Parking Demand Analysis and ITS-Based Parking Management Framework for the Borongaj University Campus in the City of Zagreb

Session Room III. ***Cognitive Powertrain & Propulsion Technology***	**Session Chair: Ádám Nyerges**
Mahmoud Said Jineid and Mohamed El Amine Chaabane	Coordinated Torque Vectoring and Active Air-Suspension Control for Yaw and Roll Stability of a Battery-Electric Vehicle: A Simulation Study
Aleksandr Šabanovič, Jonas Matijosius, Gyorgyi Kale-Halasz, Kristina Kilikevičienė and Arturas Kilikevičius	Cognitive Hybrid DPF-ESP Filtration System: Adaptive Pulsed High-Voltage Regimes for Enhanced Efficiency and Particulate Matter Pre-collection
Jesu Godwin, Edwin Geo Varuvel, Jonas Matijošius, Artūras Kilikevičius and Utku Kale	Ai-driven digital twin for predicting emissions in spark-ignition engines
Albert Kamil, András Pollák, Dániel Hegedűs, Dániel Harrach, Gábor Lekics, Gusztáv Baranyai, Attila Németh and Vivien Révész-Jóvér	Comparison of the Use of Rock Wool Manufacturing Waste in Normal and Lightweight Concrete Based on Physical and Mechanical Properties

Session Room IV. ***Vehicle Systems, Materials & Sensing***	**Session Chair: Bálint Csendes**
Gábor Lekics, Dániel Hegedűs, Dániel Harrach, Gusztáv Baranyai, Albert Kamil, András Pollák, Attila Németh and Vivien Révész-Jóvér	Experiences from laboratory tests of cementitious filling thermal insulation mortar with glass foam and polystyrene additives
Márk Mező-Kerekes, Péter Praksz and Chang Liu	Lightweight LiDAR-Based Cone Detection Framework using Random Forest for Formula Student Driverless
Ágnes Pálfiné Böröcz, László Pálfi and Szabolcs Szalai	Experimental Mechanical Characterization of BRINAR500 Wear-Resistant Steel for Heavy Vehicle Applications
Florin-Bogdan Scurt, Vlad Imre Tent, Tiberiu Vesselenyi, Horia Beles, Bogdan Adrian Tolea and Madalin Florin Popa	Sensory System for Data Acquisition of Vehicle Location and Obstacle Detection in Low-Speed Travel Environments
Ábel Göntér, Tibor Sipos and Lovas László	Spatial Prioritization for Electromobility Transition: An Integrated Index-Based Framework for Infrastructure Development and Policy Support

11:35-11:55 – COFFEE BREAK

11:55-13:55 – TECHNICAL SESSIONS & WORKSHOP

Auditorium ***Cognitive Powertrain & Propulsion Technology - Roundtable + Workshop***	**Session Chair: Csaba Tóth-Nagy**
Csaba Tóth-Nagy; representatives of OEMs, Tier1 suppliers and leading universities	Panel discussion: Mobility Education for a Changing Industry
Csaba Tóth-Nagy	Workshop on new education methods (lesson, subject, curriculum)

Session Room I. ***Human-Machine Interaction & Behavioral Factors***	**Session Chair: Péter Harth**
Mohammad Fawaier, Omar Alharasees, Haitham Al Hasanat, Farzad Zolfaghari, Artūras Kilikevičius and Utku Kale	Personnel Competence in Airport Safety Risk Management: The Queen Alia Case
Viktoria Otvos and Éva Barna	The "Backseat Generation" behind the wheel: Changing traffic socialization and its impact on novice drivers
Radovan Madleňák, Pavol Kudela, Michal Palčák and Daniel Gachulinec	Behavioral Road Safety KPIs in the Visegrad Four Countries: A Comparative Analysis
Csilla Berecz and Gábor Kiss	Artificial Intelligence as the main factor of technology acceptance

Session Room II. ***Cognitive Decision-Making in Mobility***	**Session Chair: Szabolcs Fischer**
Peter Bakucz and Gábor Kiss	Autonomous Driving Reliability Assessment of High-Performance Computing Systems Based on Imbalanced Thermal Data Using Entropy-Based Fuzzy Fault Tree Analysis
Áron Dávid Agg and András Horváth	Scene-Specific State-Space Acceleration Modelling for Short-Term Vehicle Motion Prediction from Surveillance Trajectories
Roland Csongvai and Péter Pál Bakucz	Regime-Conditional Runtime Coupling Between Safety and Cybersecurity at a Naturalistic Single-Lane Roundabout
Csaba Ferenc Szatmári and Szilárd Aradi	Experience with the multimodal RAG process developed for railway regulations

Session Room III. ***Mobility Infrastructure & Resources***	**Session Chair: Edwin Geo Varuvel**
Aleksandar Miltenović	Robotic Platform for Cognitive Railway Infrastructure Monitoring
Vivien Révész-Jóvér and Szabolcs Fischer	Asymmetric Track Geometry Degradation of Tramway Superstructure Systems: A Statistical Reassessment from Repeated Handheld Measurements in Budapest
Christoph Heinzelmann, Duo Liu, Mykola Sysyn and Szabolcs Fischer	Analysis of the Effectiveness of Superstructure Reinforcement Using Rail Bundles
Marek Vyhnanovský, Lukáš Křižan and Petr Kučera	Expanding capabilities and implementing Automatic Route Setting
László Ézsiás and Szabolcs Fischer	The Most Important Aggregate Parameters for Asphalt Quality: A Performance-based Re-examination of Crushed Andesite for Stone Mastic Asphalt Wearing Courses

13:55–15:00 – CLOSING LUNCH

The Organizers reserve the right to modify the conference program.

TERN SYSTEMS

Developing the Future of Air Traffic Management

The innovation project **NOMAD**, led by Tern Systems, recently received **€21 million in funding from the European Union**. Bringing together 17 European partners, the project will develop a next-generation, cloud-based solution for air traffic management in European airspace.

Tern Systems designs and builds **Air Traffic Management (ATM) software solutions**, with almost 30 years of successful deliveries across Europe, Asia and Africa. Founded in Iceland in 1997, the company is a subsidiary of Avians, part of the Isavia group. It has offices in Iceland, Hungary and Poland, with **part of its software development carried out by its Hungarian subsidiary**.

Hungary is also home to an important long-term partnership. Since 2020, **Tern Systems and HungaroControl have collaborated on ATM innovation**, including controller-training simulation, drone tracking research and the development of the Polaris ATM system. Polaris has since entered operational service as HungaroControl's high-density backup system, with six system instances and more than 160 workstations. The cooperation demonstrates Tern's approach of developing technology together with air navigation service providers and bringing innovation into operational use.

Magnús Már Þórðarson, Managing Director of Tern Systems, emphasises that such technological capabilities require continuous investment.

Magnús Már Þórðarson
Managing Director of Tern Systems

"It showed considerable foresight to establish a company like Tern and build up this technological expertise in Iceland. It required both courage and long-term thinking. Expertise like this does not develop by itself. Hopefully, we will continue to invest in innovation and technological expertise for the future," says Magnús.

Tern also builds on a long-standing collaboration with Avians, which manages traffic over Iceland and a significant part of the North Atlantic, **one of the world's largest and most complex airspace regions**. This close connection to operations, combined with partnerships such as HungaroControl and research initiatives such as NOMAD, allows Tern to connect **research and technological development directly with operational deployment**.

"In our world, being innovative and forward-looking is not enough. The systems must be designed so that air navigation service providers can rely on them every single day. ***Trust, safety and reliability are not merely objectives, but prerequisites for everything we do****."*

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- Innovation and development skills
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- Strong interdisciplinary approach
- Focus on real-world environmental challenges
- Prestigious BME background

REQUIRED BACKGROUND

- Engineering or science degree
- Systems thinking
- Interest in sustainability

CAREER

- Sustainability expert
- ESG consultant
- Development engineer
- Innovation manager

BASIC INFORMATION

- **Level of Studies:** MSc
- **Mode of Studies:** Full-time
- **Duration:** 3 semesters
- **Language of Instruction:** English
- **Application period:**
  Spring semesters: no intake
  Fall semesters: 15 Oc. – 15 Nov.

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