

ORGANIZER



VILNIUS
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FACULTY OF TRANSPORT
ENGINEERING

PROGRAMME

OF THE INTERNATIONAL CONFERENCE

TRANSBALTICA 2026:

TRANSPORTATION SCIENCE AND TECHNOLOGY

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17–18 September 2026

VILNIUS TECH Faculty of Transport Engineering | Plytinės g. 25, Vilnius, Lithuania

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WELCOME

Dear Participants,

It is my great pleasure to welcome you to the 17th International Conference “TRANSBALTICA 2026: Transportation Science and Technology”.

This conference brings together researchers, experts, industry representatives and young scientists from different countries to share knowledge, discuss emerging challenges and present innovative solutions for the future of transport and logistics.

I hope that the conference programme will inspire productive discussions, new ideas and meaningful professional connections. May your time in Vilnius be both academically rewarding and personally enjoyable.

I wish you a successful conference and a pleasant stay in Lithuania!

Prof. Dr. Olegas Prentkovskis
Chairperson of the Organizing Committee

PROGRAMME OVERVIEW

Time (EEST, UTC+3)	17 September 2026 First Day of the Conference	Auditorium
9:30 – 10:00	Welcome Coffee and Registration	P2-156
10:00 – 12: 30	Opening and Plenary Session <i>In-Person</i> and <i>Online</i>	P2-156
12:30 – 13:30	Lunch Break	P2-409 (Cafe CONFETTI)
13:30 – 16:00	Parallel Sessions <i>In-Person</i>	P2-156 P2-412
	Parallel Sessions <i>Online</i>	Virtual Room
16:00 – 17: 30	Practical Activities	P1-315
17:30 – 20:00	Dinner	P2-1st-floor (Cafe CONFETTI)
Time (EEST, UTC+3)	18 September 2026 Second Day of the Conference	Auditorium
9:30 – 10:00	Welcome Coffee	P2-156
10:00 – 12: 30	Parallel Sessions <i>In-Person</i>	P2-156 P2-410
	Parallel Sessions <i>Online</i>	Virtual Room
12:30 – 14:00	Lunch and Closing Remarks	P2-409 (Cafe CONFETTI)

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FIRST DAY OF THE CONFERENCE, 17 September 2026

Auditorium P2-156 | 9:30 – 10:00 | **WELCOME COFFEE AND REGISTRATION**Auditorium P2-156 | 10:00 – 12:30 | **OPENING AND PLENARY SESSION** (*In-Person and Online*)Chairperson – **Kamilė Taujanskaitė**🔗 https://*** – *will be available soon*

📖 ***Challenges of human-machine interaction in autonomous transport. Can artificial intelligence solve everything?***

Vidas Žuraulis (VILNIUS TECH Faculty of Transport Engineering, LT)

📖 ***Supply Chains 2030: What will define the leaders in transport and logistics?***

Eva Leckaitė-Končanina (JSC „Girteka Dedicated“, LT)

📖 ***Technological solutions for advanced inclusive mobility***

Metin Mutlu Aydin (Ondokuz Mayıs University, TR)

📖 ***Railway research and innovation in horizon-funded projects at VILNIUS TECH***

Gintautas Bureika (VILNIUS TECH Faculty of Transport Engineering, LT)

P2-409 (Cafe CONFETTI) | 12:30 – 13:30 | **LUNCH BREAK**Auditorium P2-156 | 13:30 – 16:00 | **PARALEL SESSION** (*In-Person*) | TITLE “A”Chairperson – **Kristina Čižiūnienė**

📖 ***A fuzzy logic-based methodology for assessing overall risk criticality in integrated transport and logistics systems with an aviation component***

Olena Sokolova, Viktoriia Ivannikova, Kostiantyn Cherednichenko, Oleksandr Krasnoshtan (UA, IE)

📖 ***Internal risk management challenges in supply chains critical to the Lithuanian armed forces***

Aidas Vasilis Vasiliauskas, Olga Navickienė (LT)

📖 ***Towards an accessibility-based framework for assessing freight transport poverty***

Ahmed Almadhoun, Mariusz Kostrzewski (PL)

📖 ***Digitalization in the transport sector: a project management perspective on Logistics 4.0 challenges***

Diogo Figueira, Wellington Alves, Sara Martins (PT)

📖 ***Development of interoperability of multimodal freight transportation components for control of information processes***

Dalė Dzemydienė, Kristina Čižiūnienė (LT)

📖 ***Adaptive energy management system for electric vehicles based on a neural network with predictive optimisation of energy consumption***

Valerii Dembitskyi, Viktor Samostian, Viktoriia Kotenko, Oleg Sitovsky (UA)

📖 ***Charting the values of global maritime governance: a content analysis of the international maritime organization's strategic plans and annual themes***

Jeric Bacasdoon, Johan Bolmsten, Inga Bartuseviciene, Caroline Dacwag-Balila (SE)

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Auditorium P2-412 | 13:30 – 16:00 | **PARALEL SESSION** (*In-Person*) | TITLE “B”

Chairperson – **Salvatore Antonio Biancardo**

-  ***Numerical investigation on the effects of impact velocity and angle on the energy absorption capacity of automotive laminated windshields during pedestrian headform impacts***
 Ismail Furkan Saruhan, Ameen Topa, Kadir Kaya, Metin Mutlu Aydin,
 Recep Arslan Yasin Çelik (TR, UK, MY)
-  ***Modeling of graded foam composite structures with piezoelectric actuators***
 Andrejs Kovalovs, Evgeny Barkanov, Pavel Akishin (LV)
-  ***Applicability limits of vortex lattice and rans methods in aerodynamic assessment of a blended wing body UAV***
 Kacper Adolf, Bartłomiej Dziewoński, Artur Kierzkowski, Michał Stosiak(PL)
-  ***Diagnostic acoustic signal in the identification of cavitation in a positive displacement pump of a machine hydraulic power drive***
 Michał Stosiak, Paulius Skačkauskas, Gabrielius Mejeras, Mykola Karpenko (PL, LT)
-  ***Impact of hydrogen addition to CNG on NO_x emission in a hybrid electric vehicle under WLTP conditions***
 Tadas Vipartas, Edward Kozłowski, Alfredas Rimkus,
 Magdalena Zimakowska-Laskowska, Jonas Matijošius (LT, PL)
-  ***Validation and assessment of vehicle chassis in the body-in-white form***
 Christos Vestakis, Clio Vossou, Dimitrios Koulocheris (GR)
-  ***A method for prioritising the deployment of UAVs in state fire service operations based on historical emergency response activities***
 Piotr Gładysz, Mariusz Klimas, Anna Borucka (PL)
-  ***Development of a methodology for investigating the use of a 3D-printed plastic main piston in a monotube shock absorber***
 Ronald Rudzinski, Paulius Skačkauskas, Šarūnas Šukevičius, Gabrielius Mejeras (LT)

Virtual Room | 13:30 – 16:00 | **PARALEL SESSION** (*Online*) | TITLE “C”

Chairperson – **Paulius Kojis**

 https://*** – will be available soon

-  ***Computational modelling of a piezoelectric vehicle suspension for energy harvesting***
 Panteleimon Mourtos, Clio Vossou, Dimitrios Koulocheris (GR)
-  ***Influence of the geometry of passenger seat supports in a low-floor bus on dynamic characteristics under UNECE Regulation No. 80***
 Kostiantyn Holenko, Oleksandr Dykha, Larysa Neduzha (UA)
-  ***Mathematical model of friction force for polymer materials (POM and PA) used in hydraulic systems***
 Tadeusz Leśniewski, Krzysztof Towarnicki, Igor Radoch, Justyna Krawczyk (PL)
-  ***Technogenic safety of energy transportation infrastructure: a comparative analysis of pipeline reliability***
 Oleksandr Zyma, Oleksiy Fenko (UA)
-  ***Simple and interpretable dispatching rules for shared autonomous transportation in industrial parks***
 Mariana R. Carvalho, Maria João Santos, André Pardal, Sara Martins (PT)

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Virtual Room | 13:30 – 16:00 | **PARALEL SESSION** (Online) | TITLE “D”

Chairperson – **Greta Serackienė**

 https://*** – will be available soon

 The analytical time margin estimation approach for railway timetables

Franciszek J. Restel (PL)

 Railway passenger forecasting using hybrid statistical and machine learning methods

Jyoti Choudhary, Haresh Kumar Sharma, Pradeep Malik (IN)

 Digitalization of railway transportation as a self-organization tool for decarbonization: a multicriteria optimization approach

Valerii Samsonkin, Oleksandr Rohovyi, Gintautas Bureika, Oksana Yurchenko, Tetiana Yarkho (UA, LT)

 Analysis of compatibility of Slovak Republic railway infrastructure with military mobility in Europe

Ivan Majchút, Andrej Polák, Miriam Karasová (SK)

 Concept for assessing effectiveness of the implementation newly created or upgraded electric rolling stock

Andrii Sulym, Oleksandr Safronov (UA)

 Comparative assessment of selected Baltic state tramway systems for sustainable urban mobility planning

Jonas Matijošius, Gediminas Vaičiūnas (LT)

Virtual Room | 13:30 – 16:00 | **PARALEL SESSION** (Online) | TITLE “E”

Chairperson – **Vidas Žuraulis**

 https://*** – will be available soon

 Military mobility in the Czech Republic: gap analysis of EU and NATO requirements

Klara Cibulova, Martin Vlkovsky, Vladimir Vyklicky (CZ)

 Modern determinants of professional burnout among long-distance seafarers

Alona Leshchenko, Ivan Riabukha, Alona Yurzhenko, Olena Kononova (UA)

 Dual-use corridor modelling between the Northern Adriatic and the Black Sea

Pavlo Holoborodko, Darius Bazaras, Peter Jenček (LT, SI)

 Digital twin-driven prescriptive analytics framework for intelligent maritime infrastructure protection

Andrii Holovan (UA)

 Automated management of cargo transportation for delivery across Europe freight corridors

Aurelija Burinskienė, Diana Daškevič, Arūnas Miliauskas (LT)

 Methodological framework for assessing energy-saving potential of merchant ships

Iryna Honcharuk (UA)

 Thermal characteristics of plate-fin heat sinks for shipboard navigation equipment

Olena Tymoshchuk, Olha Levchenko, Svitlana Boiko (UA)

Virtual Room | 13:30 – 16:00 | **PARALEL SESSION** (Online) | TITLE “F”

Chairperson – **Sai Manoj Rayapureddy**

 https://*** – will be available soon

 Energy absorption and crashworthiness performance of honeycomb structures with geometrical imperfections

Quirino Estrada, Julio Vergara-Vazquez, Alejandro Rodriguez-Mendez, Elva Reynoso, Jesús Silva-Aceves, Aztlán Bastarrachea, Francisco Enriquez-Aguilera, Manuel Nandayapa (MX)

 A comprehensive review on different agglomeration concepts: thermophoretic, turbulence-induced and Brownian motion agglomeration

Sai Manoj Rayapureddy, Marijonas Bogdevičius (LT)

 Prospects of analytical graphics methods application in assessing the share of renewable energy sources for improving environmental impact using the example of Kiev region

Oleksiy Zabarylo, Yulia Korotkykh, Pavlo Zabarylo (UA)

 Development of a laboratory test rig for experimental investigation of hydrodynamic processes in pipeline transport systems

Pavel Ževžikov, Aleksas Narkevičius, Vilius Mejeris (LT)

 Strength analysis of components of an independent suspension system of a race car

Ján Dižo, Miroslav Blatnický, Stanislav Semenov, Evgeni Mikhailov, Paweł Drozdziel, Jacek Caban (SK, PL, UA)

 Design for manufacturing of modern covered freight wagon bodies: experimental validation of high-speed laser welding technology

Artemii Bernatskyi, Oleksandr Siora, Mykola Sokolovskyi, Yurii Yurchenko (UA)

 Mechanically-constrained local navigation framework of unmanned ground vehicles in unstructured environments

Marek Nowakowski (PL)

 Structural integrity of steels for hydrogen technologies: modeling and prediction of fracture toughness under hydrogen exposure

Oleh Venhryniuk, Olha Zvirko, Oleksandr Tsyrlunyk, Hryhoriy Nykyforchyn (UA)

Auditorium P1-315 | 16:00 – 17:30 | **PRACTICAL ACTIVITIES**

P2-1st-floor (Cafe CONFETTI) | 17:30 – 20:00 | **DINNER**

SECOND DAY OF THE CONFERENCE, 18 September 2026

Auditorium P2-156 | 9:30 – 10:00 | **WELCOME COFFEE**Auditorium P2-156 | 10:00 – 12:30 | **PARALEL SESSION** (*In-Person*) | TITLE “G”Chairperson – **Vidas Žuraulis**

- 📖 *Optimizing customer-to-plant assignments in supply chain network*
Tiago Fernandes, Eliana Costa e Silva, Sara Martins (PT)
- 📖 *Management simulators and generative AI in supply chain research: a decade global bibliometric mapping*
Pacifique Rukundo, Berdymyrat Ovezmyradov, Kristina Čižiūnienė (LV, LT)
- 📖 *Evaluating port efficiency under uncertainty: a risk-adjusted DEA analysis of Mediterranean ports*
Mozhgan Mansouri Kaleibar, Evelin Krmac (SI)
- 📖 *Systematic literature review on AI based maritime transport routing*
Ilona Jaržemskienė, Andrius Jaržemskis (LT)
- 📖 *Hydrogen-fraction estimation from in-cylinder pressure in a gasoline-hydrogen SI engine*
Martynas Grybauskas, Saugirdas Pukalskas, Alfredas Rimkus, Gabrielius Mejeris (LT)
- 📖 *Solutions for improving the efficiency of short sea shipping in the Baltic Sea region using the critic method*
Žilvinas Skudžinskas, Nijolė Batarlienė (LT)
- 📖 *A study of warehousing process management systems in Lithuanian accommodation facilities*
Liudmila Burinskienė, Emilis Poškevičius, Kristina Vaičiūtė (LT)
- 📖 *Analysis of the impact of applying innovative technologies in fuel transportation and improvement opportunities*
Daiva Vaištaraitė, Nijolė Batarlienė (LT)

Auditorium P2-410 | 10:00 – 12:30 | **PARALEL SESSION** (*In-Person*) | TITLE “H”Chairperson – **Salvatore Antonio Biancardo**

- 📖 *Operational workload of fire and rescue services in Polish municipalities in 2023–2025*
Mariusz Klimas, Piotr Gładysz, Anna Borucka (PL)
- 📖 *Exploring the dimensions of organizational resilience through a framework lens: a case study at the World Maritime University*
Nguyen Hoang Vuong, Inga Bartuseviciene, Johan Bolmsten (SE)
- 📖 *Adaptive traction architecture based on dynamic voltage and frequency scaling for railway catenary disturbances*
Pavlo Holoborodko, Darius Bazaras, Aldona Jarašūnienė (LT)
- 📖 *Investigation of traffic accidents on railway sidings*
Stasys Steišūnas, Darius Laurinavičius, Gediminas Vaičiūnas (LT)

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- 📖 *Application of fuzzy models for comprehensive assessment of air traffic controllers-cadets' attitudes to the dangers of horizontal flight level norm violations*
Oleksii Reva, Serhii Borsuk, Volodymyr Kamyshyn, Pavlo Mamenko,
Shahin Nasyrov, Anatolii Ivliiev (UA, AZ)
- 📖 *Evaluating IFC-based 5D BIM workflows for infrastructure cost estimation: a comparative study of proprietary and open-source platforms*
Mattia Intignano, Salvatore Antonio Biancardo, Pietro Serra,
Algimantas Danilevičius, Gianluca Dell'Acqua (IT, LT)
- 📖 *Stress analysis of the cylindrical spring under torsion*
Jurijus Tretjakovas, Audrius Čereška (LT)

Virtual Room | 10:00 – 12:30 | **PARALEL SESSION (Online)** | TITLE "I"

Chairperson – **Kamilė Taujanskaitė**

🔗 https://*** – will be available soon

- 📖 *Measuring air connectivity in South Pacific islands*
Iryna Heiets (AU)
- 📖 *How data analytics in A-CDM performs in reporting and stakeholder relations: a case study on Dublin airport*
Olatomiwa Keyede, Viktoriia Ivannikova (IE)
- 📖 *Air transport development in the region of Piešťany airport*
Alena Novák Sedláčková, Filip Kocúrik, David Šourek, Kristína Kováčiková (SK, CZ)
- 📖 *Distributed accountability in automated aircraft load control operations*
Ivan Jakovljević, Olja Čokorilo (ES, RS)
- 📖 *SCM-CERT-BENCH: logistics competency-grounded benchmark for LLM agents*
Maksim Ilin, Dmitry Pavlyuk (LV)
- 📖 *UAV incidents affecting transport and logistics-enabling infrastructure in Ukraine*
Michaela Rázusová, Ľubomír Belan (SK)
- 📖 *Analysis of hardware and computational errors in HIL testing of PEM fuel cells for UAV applications*
Sergii Boichenko, Vitalii Korovushkin, Iryna Shkilniuk, Leonid Listovshchik,
Victor Stoudenets, Yehor Brodnikovskiy (UA)

Virtual Room | 10:00 – 12:30 | **PARALEL SESSION (Online)** | TITLE "J"

Chairperson – **Sai Manoj Rayapureddy**

🔗 https://*** – will be available soon

- 📖 *Determinants of sustainable mobility choices among university students: a case study of Wroclaw University of Science and Technology*
Justyna Krawczyk, Tadeusz Leśniewski (PL)
- 📖 *Comparative analysis of Balkan Countries based on MCDM model*
Željko Stević, Medina Fetić, Boris Gitolendia, Ilija Tanackov (BA, RS, GE)
- 📖 *Transformation of Ukraine's agricultural export model under economic and geopolitical crises: transport logistics and supply chain adaptation (2005–2025)*
Oleh Strelko, Oleksandra Soloviova, Liubov Soloviova, Yuliia Berdnychenko (UA)

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-  ***Improvement of transportation processes of logistics companies based on modern technologies: a case study approach***
 Margarita Išoraitė, Aldona Jarašūnienė, Arvydas Mažeika (LT)
-  ***Transportation and logistics management in nonmilitary crisis situations: a framework for an integrated response model in the Slovak Republic***
 Daniel Brezina, Jaroslav Kompan, František Gubáš (SK)
-  ***Drone-enabled hybrid risks in global logistics: empirical loss assessment and small-sky governance***
 Liudmyla Maliuta, Vitalii Rudan, Liliya Yakymyshyn, Liliya Melnyk (UA)
-  ***Logistics planning of the secondary raw materials collection company using a whole supply chain strategy***
 Margarita Išoraitė, Aldona Jarašūnienė, Justinas Kaniušas (LT)

Virtual Room | 10:00 – 12:30 | **PARALEL SESSION** (Online) | TITLE “K”

Chairperson – **Paulius Kojis**

 https://*** – will be available soon

-  ***SWOT-based assessment of road safety management capacity: evidence from the city of East Sarajevo***
 Miroslav Đerić, Marko Subotić, Željko Stević (BA)
-  ***Assessment of the state and development prospects of dam-roads in the critical infrastructure system of the Prydniprovyia Region***
 Grygoriy Shariy, Iryna Tkachenko, Svitlana Shara, Evgeniya Ugnenko, Anna Shevchenko, Elena Uzhviieva, Nataliia Sorochnik (UA)
-  ***Mechanical resistance strength of a removable flat-rack module for long cargoes at 3D numerical approach for transport safety***
 Juraj Gerlici, Alyona Lovska (SK)
-  ***Biochar-modified high-rap asphalt mixtures: rheological, mechanical, and environmental evaluation***
 Kateryna Krayushkina, Vadym Bondarchuk, Oleksandr Palyvoda (UA)
-  ***An investigation of pre-impact neck muscle tension and neck posture effects on the rear impact response of a seat-occupant system***
 Selcuk Himmetoglu, Samet Yavuz, Fatma Nur Şen (TR)
-  ***Uncovering traffic conflict typologies through unsupervised learning: a case study of urban intersections in Thessaloniki, Greece***
 Fotini Kehagia, Apostolos Anagnostopoulos, Pavlos Gkoukoulis, Athanasios Theofilatos (GR)
-  ***The impact of the digitalization of customs procedures on customs risks***
 Oleksii Chupaylenko, Georgii Prokudin, Yurii Kolesnyk, Viktoriia Lebid, Maksym Roi (UA)

Virtual Room | 10:00 – 12:30 | **PARALEL SESSION** (Online) | TITLE “L”

Chairperson – **Gintautas Bureika**

 https://*** – will be available soon

-  ***Structured data logistics for railway infrastructure information ecosystems***
 Uldis Jansons, Mihails Savrasovs, Igor Kabashkin (LV)

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- 📄 *Application of Fe_2O_3 -Al exothermic addition in self-shielded flux-cored wire core for energy-efficient restoration of railway turnout frogs*
Serhii Zharikov, Aleksandr Grin, Nataliia Makarenko, Illia Trembach, Bohdan Trembach (UA)
- 📄 *Assessment of the barrier-free evacuation routes in railway station complexes under the conditions of military threats*
Oksana Chernyshova, Oleksandr Stepanchuk, Svitlana Timkina (UA)
- 📄 *Concept of in-service rail vehicle vibration monitoring system for track condition and passenger comfort assessment*
Mateusz Oziębłowski (PL)
- 📄 *Energy-efficient control algorithm for a multi-motor traction electric drive of a diesel multi-unit*
Ievgen Riabov, Serhii Buriakovskyi, Liliia Overianova, Volodymyr Nescheret, Andrii Podoliak (UA)
- 📄 *Preliminary study on hazard identification ability in a cabin tram simulator using eye-tracking*
Łukasz Wolniewicz (PL)
- 📄 *Determination of parameters of electrically induced noise in a field-oriented control system for traction in-duction motors of a locomotive*
Sergey Goolak, Olga Petrychenko, Olena Nezlina, Sergey Maliuk (UA)
- 📄 *Critical transport infrastructure in Slovakia: strategic challenges, modernization priorities and military mobility implications*
Jaroslav Kompan, Daniel Brezina, Štefan Krivjanský, Andrea Miždová (SK)

P2-409 (Cafe CONFETTI) | 12:30 – 14:00 | **LUNCH AND CLOSING REMARKS**