



VILNIUS  
TECH

International Conference  
**TRANSBALTICA:**  
Transportation Science and Technology

# Conference Programme



MINISTRY OF TRANSPORT  
AND COMMUNICATIONS  
OF LITHUANIA



Girteka



 **TRANSPORT  
INNOVATION  
ASSOCIATION**



Springer



Time (EEST, UTC+3)	19 September 2024: First Day of the Conference		
9:30 – 10:00	Welcome Coffee and Registration (Auditorium P2-156)		
10:00 – 12:00	<b>PLENARY SESSION</b> ( <i>In-Person</i> : Auditorium P2-156) <i>Virtual Room</i> : <a href="https://liedm.zoom.us/my/transbaltica01">https://liedm.zoom.us/my/transbaltica01</a>		
	Opening Speech	<ul style="list-style-type: none"> <li>• <b>Assoc. Prof. Kamilė Taujanskaitė</b>, Vice-Dean for Research and Communications of the VILNIUS TECH Faculty of Transport Engineering</li> </ul>	
	Welcome Speech	<ul style="list-style-type: none"> <li>• <b>Prof. Olegas Prentkovskis</b>, Dean of the VILNIUS TECH Faculty of Transport Engineering</li> </ul>	
	<i>Plenary Session Speakers:</i> <ul style="list-style-type: none"> <li>• <b>Irina Yatskiv (Jackiva)</b> (TRANSPORT AND TELECOMMUNICATION INSTITUTE, LATVIA): Perspectives on Building a Framework for Sustainable Modeling of eTrucks Fleet Utilization: ePcenter Project Results</li> <li>• <b>Simonas Barsteiga</b> (VILNIUS TECH, LITHUANIA): Mission Smart and Climate Neutral Lithuania: How to Speed Up Innovations in Transport Sector?</li> <li>• <b>Ovidijus Žilius</b> (WIRTGEN GROUP – WIRTGEN LITHUANIA): Machines Innovations Drives Social Responsibility</li> </ul>		
12:00 – 12:30	Break: Refreshments and Snacks (Auditorium: P2-156)		
12:30 – 14:00	<b>PARALLEL SESSIONS</b> (see information below)		
	<i>In-Person</i> : Auditorium P2-156  <a href="https://liedm.zoom.us/my/transbaltica02">https://liedm.zoom.us/my/transbaltica02</a>	<b>Virtual Room 1:</b> <i>Road Safety, Infrastructure, Vehicle Engineering and Dynamics</i>  <a href="https://liedm.zoom.us/my/transbaltica03">https://liedm.zoom.us/my/transbaltica03</a>	<b>Virtual Room 2:</b> <i>Logistics and Transportation</i>  <a href="https://liedm.zoom.us/my/transbaltica04">https://liedm.zoom.us/my/transbaltica04</a>
14:00 – 17:00	Tour to the Auto Museum Vilnius: <a href="https://automuziejus.lt/en">https://automuziejus.lt/en</a>		
17:00	Conference Dinner (Campus Cafe CONFETTI)		

Time (EEST, UTC+3)	20 September 2024: Second Day of the Conference			
9:30 – 10:00	Welcome Coffee (Auditorium: P2-156)			
10:00 – 11:30	<b>PARALLEL SESSIONS</b> (see information below)			
	<i>In-Person</i> : Auditorium P2-156  <a href="https://liedm.zoom.us/my/transbaltica02">https://liedm.zoom.us/my/transbaltica02</a>	<b>Virtual Room 3:</b> Combustion in Engines, Fuels and Emissions  <a href="https://liedm.zoom.us/my/transbaltica03">https://liedm.zoom.us/my/transbaltica03</a>	<b>Virtual Room 4:</b> Railway Transport  <a href="https://liedm.zoom.us/my/transbaltica05">https://liedm.zoom.us/my/transbaltica05</a>	<b>Virtual Room 5:</b> Logistics and Transportation  <a href="https://liedm.zoom.us/my/transbaltica04">https://liedm.zoom.us/my/transbaltica04</a>
11:30	Lunch and Closing Remarks (Auditorium: P1-409)			

**PARALLEL SESSIONS (19 September 2024, 12:30 – 14:00)**

<p><b>In-Person:</b> Auditorium P2-156</p> <p>Chairman: <b>Prof. Michał Stosiak</b>                  Co-Chairman: <b>Assoc. Prof. Paulius Skačkauskas</b>  <a href="https://liedm.zoom.us/my/transbaltica02">https://liedm.zoom.us/my/transbaltica02</a></p>	<p><b>Virtual Room 1:</b> Road safety, Infrastructure, Vehicle Engineering and Dynamics                  Chairman: <b>Assoc. Prof. Mykola Karpenko</b>                  Co-Chairman: <b>Prof. Olegas Prentkovskis</b>  <a href="https://liedm.zoom.us/my/transbaltica03">https://liedm.zoom.us/my/transbaltica03</a></p>	<p><b>Virtual Room 2:</b> Logistics and Transportation                  Chairman: <b>Prof. Vidas Žuraulis</b>                  Co-Chairman: <b>Assoc. Prof. Algimantas Danilevičius</b>  <a href="https://liedm.zoom.us/my/transbaltica04">https://liedm.zoom.us/my/transbaltica04</a></p>
<p>Modelling and Optimization of Airport Security Screening System with AnyLogic Simulation: a Case of Dublin Airport  <i>(Kostiantyn Cherednichenko, Viktoriia Ivannikova, Olena Sokolova, Ivan Ostroumov, Olha Sushchenko, Yuliya Averyanova, Maksym Zaliskyi, Oleksandr Solomentsev, Yurii Bezkorovainyi, Oleksii Holubnychyi, Borys Kuznetsov, Ihor Bovdui, Tatyana Nikitina, Roman Voliansky)</i></p>	<p>Numerical Study of Crashworthiness of Shrimp-Bioinspired Tubes for the Design of a Side-Door Beam  <i>(Quirino Estrada, Natalia Wolska, Elva Reynoso, Alejandro Rodriguez-Mendez, Eladio Martinez, Jesús Silva-Aceves, Aztlán Bastarrechea, Manuel de Jesús Nandayapa, Francisco Aguilera)</i></p>	<p>The Potential Applications of Constructive Simulation in Addressing Transportation Crisis Situations Involving Road Transport within the TEN-T Ground Infrastructure  <i>(Ota Roleneč, Martin Sedláček, Natálie Hanáková, Martin Vlkovský)</i></p>
<p>Influence of Thermal Throttling on Spark Ignition Engine Efficiency in Idle and Low Load Modes  <i>(Jonas Matijošius, Yurii Gutarevych, Dmitrii Trifonov, Yevhenii Shuba, Oleksander Syrota, Olena Samar, Pavlo Marchenko, Alfredas Rimkus)</i></p>	<p>UAV in Aviation: Cost of Unsafe Events  <i>(Lidija Tomić, Olja Čokorilo, Adam Torok, Snežana Kaplanović)</i></p>	<p>Assessment of Transport Systems and Their Development – Literature Review  <i>(Emilia Teresa Skupień)</i></p>
<p>Advancing Marine Air Quality: Efficacy and Optimization of Experimental Helical Cyclonic Filter for Particulate Matter Reduction in Ship Emissions  <i>(Aleksandr Šabanovič, Edgar Sokolovskij, Jonas Matijošius, Aleksandras Chlebnikovas, Artūras Kilikevičius)</i></p>	<p>Impact of Parameters of Critical Road Infrastructure on Crisis Management  <i>(Ondrej Ryska, Heidi Janeckova)</i></p>	<p>Increasing the Effectiveness of the Proactive Strategy of Managing the Safety of Vehicles in Transport Structures  <i>(Valerii Samsonkin, Oksana Yurchenko, Oleksandra Soloviova, Vasyl Sotnyk)</i></p>
<p>The Integration of Artificial Intelligence in Management of Airline Operation Control Centre (SmartLynx Airlines Case Study)  <i>(Iyad Alomar, Christy Oommen Jacob)</i></p>	<p>Features of the Dynamic Interaction Between the Elastically Deformed Working Body of a Ripper-Pick and the Soil  <i>(Kostiantyn Pochka, Mykola Prystailo, Maksym Delembovskyi, Maksym Balaka, Yurii Maksymiuk, Andrii Polishchuk)</i></p>	<p>The Infrastructure of Seaports - the Guarantor of State Security  <i>(Ieva Meidutė-Kavaliauskienė, Renata Činčikaitė)</i></p>
<p>Economical Comparison of Passenger Rail Traction Rolling Stock Alternatives  <i>(Laurynas Meilus, Lijana Maskeliūnaitė, Henrikas Sivilevičius)</i></p>	<p>Increasing the Load Capacity of Ground Forest Roads  <i>(Katerina Krayushkina, Nataliia Makhinko, Hennadii Talavira)</i></p>	<p>Technological Aspects of Military Mobility Support  <i>(Jaroslav Kompanand, Michal Hrnčiar, Daniel Brežina)</i></p>
<p>Study of the Feasibility of Using Y25 Bogies Under a Long Flat Wagon  <i>(Juraj Gerlici, Alyona Lovska)</i></p>	<p>Rationale for the Construction of Bypasses in Settlements Using the Hierarchical Analysis Method  <i>(Yevgeniia Ugnenko, Elena Uzhviieva, Nataliia Sorochuk, Yevhen Korostelov, Nataliia Bielikova)</i></p>	<p>Comprehensive Assessment of Service and Logistics Support of Foreign Trade Cargo Flows in International Production Structures  <i>(Oleksandr Gryshchuk, Anatoliy Petryk, Tetiana Litus)</i></p>
<p>Information Provision in Bus Terminals. Riga Case Study  <i>(Diane Aliou Yasmine, Irina Yatskiv (Jackiva))</i></p>	<p>Specifics of the Road Infrastructure of the Slovak Republic for the Host Nation Support  <i>(Stanislav Morong, Juraj Pagacik)</i></p>	<p>Green Logistics Marketing Case Studies Features  <i>(Margarita Išoraitė)</i></p>
<p>Literature Review and Evaluation of Personalized Routing Methodologies for Improving Mobility of Especially Vulnerable Road Users  <i>(Irina Yatskiv (Jackiva), Francesco Maria Turno)</i></p>	<p>Simulation Modelling for Urban Transport Infrastructure Optimization in Ukraine  <i>(Viktoriia Ivannikova, Kostiantyn Cherednichenko, Olena Sokolova, Ivan Ostroumov, Olha Sushchenko, Yuliya Averyanova, Maksym Zaliskyi, Oleksandr Solomentsev, Yurii Bezkorovainyi, Oleksii Holubnychyi, Borys Kuznetsov, Ihor Bovdui, Tatyana Nikitina, Roman Voliansky)</i></p>	<p>Modelling Urban Logistics Processes Using Artificial Intelligence  <i>(Rytis Engelaitis, Margarita Išoraitė, Aldona Jarašiūnienė)</i></p>
<p>Active Roll Control Induced Tyre Wear in Electric Vehicles  <i>(Paulius Kojis, Viktor Skrickij, Eldar Šabanovič, Valentin Ivanov, Marijonas Bogdevičius)</i></p>	<p>Vibroacoustic Diagnostics of Rolling Bearings - Test Rig for Research Dataset Acquisition and Didactic Applications  <i>(Jakub Wróbel, Dominik Olszewski, Paweł Bury, Rafał Cieśllicki)</i></p>	<p>Application of Biometric Technologies in Transport and Logistics Companies  <i>(Justė Balevičiūtė, Gedvydas Šopaga, Aldona Jarašiūnienė)</i></p>

**PARALLEL SESSIONS (20 September 2024, 10:00 – 11:30)**

<p><b>In-Person:</b> Auditorium P2-156</p> <p>Chairman: <b>Assoc. Prof. Paulius Skačkauskas</b>                  Co-Chairman: <b>Prof. Michał Stosiak</b>  <a href="https://liedm.zoom.us/my/transbaltica02">https://liedm.zoom.us/my/transbaltica02</a></p>	<p><b>Virtual Room 3:</b> Combustion in Engines, Fuels and Emissions</p> <p>Chairman: <b>Assoc. Prof. Mykola Karpenko</b>                  Co-Chairman: <b>Prof. Olegas Prentkovskis</b>  <a href="https://liedm.zoom.us/my/transbaltica03">https://liedm.zoom.us/my/transbaltica03</a></p>	<p><b>Virtual Room 4:</b> Railway Transport</p> <p>Chairman: <b>Assoc. Prof. Viktor Skrickij</b>                  Co-Chairman: <b>MSc. Paulius Kojis</b>  <a href="https://liedm.zoom.us/my/transbaltica05">https://liedm.zoom.us/my/transbaltica05</a></p>	<p><b>Virtual Room 5:</b> Logistics and Transportation</p> <p>Chairman: <b>Prof. Vidas Žuraulis</b>                  Co-Chairwoman: <b>Assoc. Prof. Kristina Čižiūnienė</b>  <a href="https://liedm.zoom.us/my/transbaltica04">https://liedm.zoom.us/my/transbaltica04</a></p>
<p>Border Road Freight Traffic in the Context of the Modern Geopolitical Situation  <i>(Anna Borucka, Edward Kozłowski)</i></p>	<p>The Influence of Driver Behaviour on the CO<sub>2</sub> Emissions by Road Vehicle  <i>(Margarita Prokopovič, Kristina Vaičiūtė)</i></p>	<p>Possibilities of Decarbonization in Rail Passenger Transport in Slovakia  <i>(Anna Dolinayova, Peter Morihladko)</i></p>	<p>Research on the Improvement of the Cargo Transportation Process of the Transport Company  <i>(Kristina Vaičiūtė, Liudmila Burinskienė, Nijolė Batarlienė)</i></p>
<p>Identification of Disturbance Signals in Hydraulic Systems in Terms of Their Reliability  <i>(Michał Stosiak, Paweł Bury, Mykola Karpenko, Paulius Skačkauskas)</i></p>	<p>Hydrogen Related Issues at Hydrogen Transport via Existing Gas Pipelines  <i>(Olha Zvirko, Oleksandr Tsyrylnyk, Oleh Venhryniuk, Hryhoriy Nykyforchyn)</i></p>	<p>Study of Possibility of Development of High-Speed Railways in Lithuania  <i>(Dmitrij Ševaldin, Stasys Steišūnas)</i></p>	<p>Conditions for the Transport of Medical Parcels Using Drones in Poland  <i>(Ludmiła Filina-Dawidowicz, Piotr Trojanowski, Laura Wojnicz, Péter Ákos Szilassy)</i></p>
<p>BIM as-Built Workflow for Road Infrastructure  <i>(Salvatore Antonio Biancardo, Mattia Intignano, Francesca Di Fonzo, Francesco Abbondati, Gianluca Dell'Acqua)</i></p>	<p>Compatibility Analysis of Hydrogen Infrastructure and Ship Bunkering Needs  <i>(Valdas Lukauskas)</i></p>	<p>Comparative Analysis of Train and Bus Performance: Factors Influencing Public Transport Choices in Algeria  <i>(Mouloud Khelf, Assia Sahel)</i></p>	<p>Analysis of Ecological Efficiency of Technological Processes in Seaport Terminals  <i>(Valdas Lukauskas, Vilma Locaitienė)</i></p>
<p>Friction Resistance of PA Plastic Used to Make the Sickle Insert of an Internal Gear Pump  <i>(Tadeusz Leśniewski, Krzysztof Towarnicki, Justyna Krawczyk)</i></p>	<p>The Analysis of Bending Moment in Connecting Rod Caps for Internal Combustion Engines  <i>(Jurijus Tretjakovas, Romualdas Juknelevičius)</i></p>	<p>Designing and Calculation of the High-speed Train Lines in International Transport Corridors  <i>(Evgeniya Ugnenko, Anna Shevchenko, Vladyslav Pachenko, Artur Maziashvili)</i></p>	<p>Assessment of Seaport Infrastructure Capacity in the Context of National Security  <i>(Ieva Meidutė-Kavaliauskienė, Renata Činčikaitė)</i></p>
<p>Analysis of Running Properties of a Rail Multiple-Unit with a Diesel and a Hydrogen Powertrain  <i>(Alyona Lovska, Vadym Ishchuk, Ján Dižo, Miroslav Blatnický)</i></p>	<p>Analysis of Factors Influencing the Reduction of Road Transport Emissions in the Urban Environment  <i>(Oleksandr Stepanchuk, Svitlana Timkina, Ruslan Pustovoi, Alina Vyshnevskaya)</i></p>	<p>The Use of a Hybrid Powertrain on Suburban Diesel-Electric Multiple Units  <i>(Riabov Ievgen, Overianova Liliia, Neshcheret Volodymyr, Ivanov Kostiantyn, Podoliak Andrii)</i></p>	<p>An Experimental Framework Towards Assessing Impacts of Commuters' Choice Perception on Transport Sustainability  <i>(Nilay Mallick, Pritam Saha, Sudip Kumar Roy)</i></p>
<p>Lane Utilization Analysis of Drivers to Examine Safety on a Two-Lane Road with Horizontal Curve and Longitudinal Slope  <i>(Metin Mutlu Aydın, Zahid Enes Genç, Hüseyin Kalkan, Recep Arslan)</i></p>	<p>Statistical Analysis of Corrosion Losses of the Main Oil Pipelines Linear Part  <i>(Oleksandr Zyma, Valeriia Steblianko, Roman Pahomov)</i></p>	<p>Improving the Technology of Suburban Passenger Transportation in the Ukraine Competitive Transport Market  <i>(Oleh Strelko, Tetiana Hrushevska, Vasyl Gaba, Borys Toropov, Yuliia Berdnychenko, Artemii Bernatskyi)</i></p>	<p>Evolution of European Air Traffic from 2022 Onwards  <i>(Ivan Ostroumov, Viktoriia Ivannikova, Nataliia Kuzmenko, Maksym Zaliskyi)</i></p>
<p>Study on the Compliance of the Baltic State Railways to NATO Needs  <i>(Gediminas Vaičiūnas)</i></p>	<p>Features of Optimization of Maintenance Plan for Thermoelectric Generators of Marine Propulsion Systems  <i>(Andrii Golovan, Igor Gritsuk, Iryna Honcharuk, Olena Volska, Yuriy Grytsuk, Valerii Hritsuk)</i></p>	<p>Analysis of Noise Emissions at Wheel-Rail Contact  <i>(Jan Kruntorád, Lukáš Týfa, Ondřej Simon)</i></p>	<p>Twin Transition in Supply Chains and Logistics: a Systematic Literature Review  <i>(Gabrielė Radavičiūtė, Ieva Meidutė-Kavaliauskienė)</i></p>
<p>Conceiving and Implementing Elements of Rural Flexible Integrated Transport Systems  <i>(Florian Heinitz, Clemens Schmidt)</i></p>		<p>Numerical Analysis of the Subgrade Stress-Strain State when Strengthening the Ballast Layer with Reinforced Concrete  <i>(Oleksii Tiutkin, Pavlo Ovchynnykov, Larysa Neduzha)</i></p>	<p>A Conceptual Framework to Assess the Influence of Weather on Transport Sustainability in the Indian Context  <i>(Nilay Mallick, Pritam Saha, Sudip Kumar Roy)</i></p>
<p>Houthi's Threat on Sea Freight: Shade Light on Intertrade Between European Union and Southeast Countries  <i>(Pacifique Rukundo, Kristina Čižiūnienė)</i></p>			<p>A System for Assessing the Level of Training of the Airport Security Control Operator in Eliminating Dangerous Items from Passengers' Luggage  <i>(Jacek Ryczyński, Artur Kierzkowski, Tomasz Kisiel)</i></p>
<p>Comparison of Signalized Intersections Based on Start-Up Time of Pedestrians: Fuzzy MCDM Model  <i>(Željko Stević, Bojana Ristić, Vuk Bogdanović, Marko Subotić)</i></p>			