



# PROGRAMME

of the 19<sup>th</sup> International Conference

**“RELIABILITY and STATISTICS in  
TRANSPORTATION and COMMUNICATION”  
*(RelStat-2019)***

16–19 October 2019

Riga, Latvia

Transport and Telecommunication Institute

Lomonosova 1, 9-floor building

<http://RelStat.tsi.lv>

# PROGRAMME

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## “Reliability and Statistics in Transportation and Communication” (RelStat-2019)

16–19 October 2019 Riga, Latvia  
Transport and Telecommunication Institute  
Lomonosova 1, 9-floor building

Date	Time	Hall #1 (Aud. 130)	Hall #2 (Aud. I)	Hall #3 (Aud.II)
16.10.2019	18.00-20.00	Registration for RelStat'19		
	18.30	Welcome Party (Hall #1 – Aud. 130)		
17.10.2019	9.15 – 14.00	Registration		
	10.00 – 13.00	Opening and Plenary Session		
	11.20 – 11.30	Coffee Break		
	11.30 – 13.00	Plenary Session		
	13.00 – 14.00	Lunch		
	14:00 – 16:00	Parallel Sessions		
		Session Reliability in Transportation	Session Data Science in Transportation	Session Smart Solutions for Supply Chain Management
	16:00 – 16:15	Coffee Break		
	16:15 – 18:15	Parallel Sessions		
		Session Smart City	Session Data Science in Transportation	Session Smart Solutions for Supply Chain Management
19:00	Dinner (Restaurant “LIDO”)			
18.10.2019	9.00 – 10.00	Plenary Session (Hall#1)		
	10:15 – 12:30	Parallel Sessions		
		Session Sustainable Transport Development	Session Intelligent Transport Systems and Telematics	Session Education and Training in Engineering
	12:30 – 13:30	Lunch		
	13:30 – 15:30	Parallel Sessions		
		Session Transport and Energy	Session Aviation	Session Innovative Economics
	15:30 – 16:00	Coffee Break		
	16:00 – 16:30	Closing Session		
17:00 – 19:00	Social Programme – Guided tour “Old Riga”			
19.10.2019	10:00 – 15:00	Social Programme – Riga Motor Museum		

## WEDNESDAY, OCTOBER 16

18:30 Welcome Party (Hall#1 – Aud. 130)

## THURSDAY, OCTOBER 17

09:15–10:00 *Registration and Welcome Coffee (Hall#1 – Aud. 130)*

10:00–10:15 *Opening Session (Hall#1 – Aud. 130). Moderator: TTI Vice-Rector, Prof. Irina Yatskiv (Latvia)*

- *TTI Acting Rector Juris Kanels (Latvia)*

10:15–11:20 *Plenary Session (Hall#1 – Aud. 130). Moderator: TTI Vice-Rector, Prof. Irina Yatskiv (Latvia)*

- **UNIV.-PROF. DR. CONSTANTINOS ANTONIOU (Germany)**  
*Paradigm changes in mobility: What do we know and how is the future looking like?*
- **DR. KASPARS OZOLS (Latvia)**  
*Automated and Connected Driving in Latvia*

11:20–11:30 *Coffee Break*

11:30–13:00 *Plenary Session (Hall#1 – Aud. 130). Moderator: TTI Vice-Rector, Prof. Irina Yatskiv (Latvia)*

- **Prof. DR. ERIC GAUSSIER (France)**  
*Learning representations for clustering: some solutions to an ill-posed problems*
- **PROF. DR. FABIEN MOUTARDE (France)**  
*Vehicle Absolute Ego-localization from Vision, using only Pre-existing Geo-referenced Panoramas*

13:00–14:00 *Lunch*

14:00–16:00 *Parallel Sessions\**

16:00–16:15 *Coffee Break*

16:15–18:15 *Parallel Sessions\**

18:45 *Bus near TSI for participants to restaurant LIDO*

19:00 *Dinner (Restaurant “LIDO”)*

## FRIDAY, OCTOBER 18

9:00 – 10:00 *Plenary Session (Hall#1 – Aud. 130). Moderator: TTI Vice-Rector, Prof. Irina Yatskiv (Latvia)*

- **Prof. Bert van Wee (TU Delft)** *Plenary speaker in the frame of the CA 16222 WISE-ACT*  
*An overview of ACT training & education*

10:15–12:30 *Parallel Sessions\**

12:30–13:30 *Lunch*

13:30–15:30 *Parallel Sessions\**

15:30–16:00 *Coffee Break*

16:00–16:30 *Closing Session*

17:00– 19:00 *Social Programme (Guided tour ‘Old Riga’ - free of charge)*

## SATURDAY, OCTOBER 19

10:00–15:00 *Social Programme (visit of Riga Motor Museum – approx. 20.00 EUR per person)*

*\*Parallely ongoing ACT Training & Education Workshop & Managing Committee Meeting – MC5 in frame of the COST ACTION 16222 WISE-ACT (additional programme)*

**THURSDAY, OCTOBER 17**

Time	Hall #1 (Aud. 130)	Hall #2 (Aud. I)	Hall #3 (Aud. II)
14:00–16:00	<p align="center"><b>Session.</b> <b>Reliability in Transportation</b></p> <p align="center">Moderators: <i>Prof. Oleg Prenkovskis</i> <i>Prof. Alexander Grakovski</i></p>	<p align="center"><b>Session.</b> <b>Data Science in Transportation</b></p> <p align="center">Moderators: <i>Prof. Eric Gaussier</i> <i>Prof. Irina Yatskiv</i></p>	<p align="center"><b>Session.</b> <b>Smart Solutions for Supply Chain Management</b></p> <p align="center">Moderators: <i>Prof. Gunnar Prause</i> <i>As.Prof. Genady Gromov</i></p>
	<p>Formation and distribution flows of external transport in the city <i>Mykhailo Krystopchuk, Svitlana Pashkevych, Igor Khitrov, Yevhen Tkhoruk (Ukraine)</i></p> <p>Static Approach for Solving the Problem of Cargo Weight Distribution on Vehicle's Axles <i>Alexander Grakovski, Sergey Yunusov, Alexander Medvedev (Latvia)</i></p> <p>Application of Deformation Sensors for Structural Health Monitoring of Transport Vehicles <i>Mironov A., Priklonskiy A., Mironovs D., Doronkin P. (Latvia)</i></p> <p>Efficiency analysis of a small universal platform type SWATH <i>Andrejs Zvaigzne, Oleksandr Bondarenko (Latvia, Ukraine)</i></p> <p>Finding the Way at Kraków Główny railway station: A Detail of Confusion Points in Eye Tracker Experiment <i>Anton Pashkevich, Eduard Bairamov, Tomasz E. Burghardt, Matus Sucha (Czech Republic, Austria, Poland)</i></p> <p>Reliability-based safety assessment of mixed vehicular traffic under the influence of time-of-day <i>Sujata Basu, Apratim Datta, Sabyasachi Mondal, Pritam Saha (India)</i></p>	<p>Combining LSTM Artificial Recurrent Neural Networks and Fractal Analysis for Inventory Dynamics Prediction <i>Ilya Jackson, Alexander Grakovski (Latvia)</i></p> <p>Making warehouse logistics smart by effective placement strategy based on genetic algorithms <i>Aleksandrs Avdeikins, Mihails Savrasovs (Latvia)</i></p> <p>Economic efficiency of data-driven fault diagnosis and prognosis techniques in MRO <i>Roman Fedorov, Dmitry Pavlyuk (Russia, Latvia)</i></p> <p>Methodology for calculating ETL indicators in the process of implementation of aircraft maintenance information systems <i>Maxim Pivovarov, Boriss Misnevs, Irina Pticina (Russia, Latvia)</i></p> <p>Aircraft lifecycle digital twin for defects prediction accuracy improvement <i>Timur Tyncherov, Liubov Rozkova (Russia)</i></p> <p>Intellectual Environment as a Inventory Management Decision Support System for Aviation Maintenance <i>Liubov Rozkova, Timur Tyncherov (Russia)</i></p>	<p>Smart Contracts for Entrepreneurial Collaboration in Supply Chains <i>Robert Philipp, Gunnar Prause, Laima Gerlitz (Germany, Estonia)</i></p> <p>Improvement of Logistics Company Management by Evaluating Development of Technological Infrastructure <i>Darius Bazaras, Kristina Čiziūnienė, Kristina Vaičiūtė (Lithuania)</i></p> <p>Logistics service quality of dry ports within land-based transport corridors: a case study "Khorgos Gateways" <i>Aisulu Moldabekova, Anatoli Beifert, Orazaly Sabden (Kazakhstan, Germany)</i></p> <p>Impact of Uncertainty Factors on Decision Making of Logistics Management <i>Łukasz Marzantowicz (Poland)</i></p> <p>The impact of proper order scheduling on robotic transportation system efficiency <i>Alicja Dąbrowska, Robert Giel, Marcin Plewa (Poland)</i></p> <p>Analysis of the influence of socio-economic factors on the volume of railway passenger transport in Łódź region <i>Wojciech Kamiński, Aleksander Śladkowski (Poland)</i></p>
16:00–16:15	Coffee Break		

Time	Hall #1 (Aud. 130)	Hall #2 (Aud. I)	Hall #4 (Aud. II)
16:15– 18:15	<p align="center"><b>Session.</b> <b>Smart City</b></p> <p align="center">Moderators: <i>Prof. Eftihia Nathanail</i> <i>Prof. Igor Kabashkin</i></p>	<p align="center"><b>Session.</b> <b>Data Science in Transportation</b></p> <p align="center">Moderators: <i>As. Prof. Mihail Savrasovs.</i> <i>As. Prof. Dmitry Pavlyuk</i></p>	<p align="center"><b>Session.</b> <b>Smart Solutions for Supply Chain Management</b></p> <p align="center">Moderators: <i>Prof. Vladislav Lukinskiy</i> <i>Prof. Boriss Mishnevs</i></p>
	<p>Estimating the sustainability impacts of an Urban consolidation center in a medium-sized city <i>Eftihia Nathanail, Thomas Terzakis, Dimitrios Zerzis (Greece)</i></p> <p>Shared-Use of Autonomous Transportation Solutions: How Ready Are We for Them? <i>Eftihia Nathanail, Giannis Adamos, Georgia Aggida, Vaia Drakouli, Eleni Papapolykarpou (Greece)</i></p> <p>Improving the Branded Service of Vehicles with Intelligent Driver Assistance Systems <i>Irina Makarova, Ksenia Shubenkova, Eduard Tsybunov, Ilсур Giniyatullin, Gleb Parsin (Russia)</i></p> <p>The influence of countdown timers on safety and driver reaction time at intersections with traffic lights <i>Monika Wengel, Natalia Okos (Poland)</i></p> <p>Selection of the Method to Predict Vehicle Operation Reliability <i>Irina Makarova, Ksenia Shubenkova, Eduard Mukhametdinov, Ilсур Giniyatullin (Russia)</i></p> <p>The Analysis of Threat Defining Language Used in the EU Official Transport Security and Safety Documents in the Latest English Edition <i>Olga Zervina (Latvia)</i></p>	<p>Defining the Best Model for Aviation Spare Parts Forecast <i>Danila Larin, Juri Tolujev (Russia, Latvia)</i></p> <p><i>Make It Flat: Multidimensional Scaling of Citywide Traffic Data</i> <i>Dmitry Pavlyuk (Latvia)</i></p> <p>Neuroevolutionary Approach to Metamodelling of Production-Inventory Systems With Lost-Sales and Markovian Demand <i>Ilya Jackson (Latvia)</i></p> <p>Markov-Modulated Process, Their Applications and Big Data Cases: State of the Art <i>Nadezda Spiridovska (Latvia)</i></p> <p>Analysis of Flow of Complex Messages Formed by Two Poisson Flows of Elementary Messages <i>Alexander Andronov, Iakov Dalinger (Latvia, Russia)</i></p> <p>Two-Level Recursive Identification of Hammerstein System by Interaction Prediction Method <i>Zygmunt Hasiewicz, Grzegorz Mzyk (Poland)</i></p> <p>Using clustering algorithms to identify recreational trips within a bike-sharing system <i>Vitalii Naumov, Krystian Banet (Poland)</i></p> <p>Analysis of Navigation Systems for Landside Transport Processes Control <i>Farid Saifutdinov, Jurijs Tolujevs (Kazakhstan, Latvia)</i></p>	<p>Complex Digital Model of Transport Logistic System Transformation <i>Alexey Nekrasov, Anna Sinitsyna (Russia)</i></p> <p>Forming the Complex Model to Rate Transportation Indicators in Supply Chains <i>Valery Lukinskiy, Vladislav Lukinskiy, Elena Koroleva, Darya Bazhina (Russia)</i></p> <p>The Application of Blockchain Technologies for Rail Transit Customs Procedures <i>Ainis Sturmanis, Justina Hudenko, Maris Juruss (Latvia)</i></p> <p>Risk Management in Sea Ports - Insights and Trends <i>Darius Bazaras, Ramūnas Palšaitis (Lithuania)</i></p> <p>Loyalty Predisposed Algorithms of Chain Management Systems <i>Dina Kelsina, Rostislav Kopitov (Latvia)</i></p> <p>Enhancing Control System Safety: Improving Self-Adapting Algorithms <i>Irina Kazina, Rostislav Kopitov (Latvia)</i></p>
19:00	Dinner (LIDO)		

**FRIDAY, OCTOBER 18**

Time	Hall #1 (Aud. 130)	Hall #2 (Aud. I)	Hall #3 (Aud. II)
10:15–12:30	<p align="center"><b>Session.</b>  <b>Sustainable Transport Development</b></p> <p align="center">Moderators:  <i>Prof. Gunnar Prause</i>  <i>Prof. Darius Bazaras</i></p>	<p align="center"><b>Session.</b>  <b>Intelligent Transport Systems and Telematics</b></p> <p align="center">Moderators:  <i>As. Prof. Jacek Mazurkiewicz</i>  <i>As. Prof. Mihail Savrasovs</i></p>	<p align="center"><b>Session.</b>  <b>Education and Training in Engineering</b></p> <p align="center">Moderators:  <i>Prof. Boriss Misnevs</i>  <i>Prof. Yulia Stukalina</i></p>
	<p>Risk Assessment of Logistics HUB Development Along Green Transport Corridors: the Case of Paldinski Port  <i>Harald Kitzmann, Sergei Falco, Gunnar Prause (Estonia, Russia)</i></p> <p>Small and Medium-Sized Seaports on the Digital Track: Tracing Digitalisation across the South Baltic Region by Innovative Auditing Procedures  <i>Robert Philipp, Laima Gerlitz, Aisulu Moldabekova (Estonia, Kazakhstan, Germany)</i></p> <p>A web-based economic decision tool for abatement investments for shipping industry  <i>Yassine Bakkar, Tarmo Robal, Gunnar Klaus Prause (Estonia)</i></p> <p>Analysis of Test Results for Developed Technology of Diesel Bus Conversion into Electric Bus  <i>Kamolins, E, Gorobetz, M, Malnaca, K, Korneyev, A. (Latvia)</i></p> <p>Application of AHP Method in Conditions of the Regional Airport  <i>Ivana Olivková, Lenka Kontriková (Czech Republic)</i></p> <p>Assessment of Noise Levels Caused by Freight Train Wagons: Case of Paneriai Railway Station  <i>Kristina Čižiūnienė, Nijolė Batarlienė, Aldona Jarašūnienė, Egidijus Valma (Lithuania)</i></p>	<p>Infrastructure-Free Sensor Platform for Multidimensional Object and Motion Analysis  <i>Maik Groneberg, Nils Brauckmann, Klaus Richter (Germany)</i></p> <p><i>Laser marking of a small sized QR code on a plastic surface</i>  <i>Pavels Narica, Janis Fedotovs (Latvia)</i></p> <p>Ethnicity Classification System Based on Human Face Picture  <i>Jacek Mazurkiewicz, Arkadiusz Podziewski (Poland)</i></p> <p>Optimizing the Pipelined DES Cracker Implemented in Contemporary Popular-Grade FPGA Devices  <i>Jarosław Sugier (Poland)</i></p> <p>Applying modern text processing technologies to implement a self-learning marketplace by using cloud services as an example  <i>Nicolas Dolle, Christian Wilhelm, Manfred Rössle (Germany)</i></p> <p>The future approach to simplify the cloud-service market using a standardized description language  <i>Nicolas Dolle, Christian Wilhelm, Manfred Rössle (Germany)</i></p> <p>Lifecycle of Temporary Facts in Decision Making Systems  <i>Igor Bessmertny, Mikhail Smurov, Julia Koroleva (Russia)</i></p> <p>The Method of Agile projects success evaluation using Machine Learning  <i>Dmitrijs Veido, Boriss Misnevs, Anatoly Plotkin (UK, Latvia)</i></p>	<p>Evaluating University Research Performance: What Criteria to Use?  <i>Yulia Stukalina (Latvia)</i></p> <p>The Relevance of Mobile and Distance Education; Developing and Advanced Approach to Learning  <i>Ioseb Gabelaia (Georgia)</i></p> <p>The Role of Innovative Methods in Teaching Entrepreneurship in Higher Education: Multidisciplinary Approach  <i>Inese Mavlutova, Kristaps Lesinskis, Mindaugas Liogys, Janis Hermanis (Latvia, Lithuania)</i></p> <p>Conditions for Foreign Students' Adaptation and its Characteristic Features in the Higher Education Institution in Latvia  <i>Ishgaley Ishmuhametovs, Larisa Kuzmenko, Anna Palma (Latvia)</i></p> <p>Involvement of Adult Female Students in Distance Learning As an Opinion to Overcome the Learning Barriers  <i>Oksana Pozdnyakova, Anatoly Pozdnyakov (Latvia)</i></p>
12:30–13:30	Lunch		

Time	Hall #1 (Aud. 130)	Hall #2 (Aud. I)	Hall #3 (Aud. II)
13:30–15:30	<p><b>Session.</b> <b>Transport and Energy</b></p> <p>Moderators: <i>Prof. Oleg Prenkovskis</i> <i>Prof. Alexander Grakovski</i></p>	<p><b>Session.</b> <b>Aviation</b></p> <p>Moderators: <i>Prof. Igor Kabashkin</i> <i>Prof. Irina Kuzmina-Merlino</i></p>	<p><b>Session.</b> <b>Innovative Economics</b></p> <p>Moderators: <i>Prof. Yulia Stukalina</i> <i>As. Prof. Dmitry Pavlyuk</i></p>
	<p>Influence of Changes in Structural and Mechanical Condition of Aluminium Alloys Caused by Impact-Oscillatory Loading on Their Fatigue Life <i>Mykola Chausov, Pavlo Maruschak, Andrii Pylypenko, Olegas Prentkovskis (Ukraina, Lithuania)</i></p> <p>Feasibility Study on the Use of Energy Storage Systems to Reduce the Enterprise Energy Consumption Costs <i>Aleksandr Krivchenkov, Alexander Grakovski, Ilya Balmages (Latvia)</i></p> <p>Routed Energy Distribution Network Concept With Electrical Energy Router <i>Tatiana Endrjukaite, Alexander Dudko, Leon L. Roose, Kevin Davies (Latvia, Japan, USA)</i></p> <p>The Dynamic Adjustment Capabilities of the Plasma Electrolytic Oxidation Process Using High-Speed Power Inverter Micro Modules <i>Rodion Saltanovs, Alexander Krainyukov (Latvia)</i></p> <p>Reducing the Impact of Vehicles on the Environment by the Modernization of Transport Infrastructure <i>Irina Makarova, Vadim Mavrin, Kirill Magdin, Aleksandr Barinov, Eugeny Gusev (Russia)</i></p> <p><i>The Analysis of the Stanley's Controller Performance in the Presence of the Steering Angle Disturbances</i> <i>Paulius Skačkauskas, Alexander Grakovski</i></p>	<p>Airport Charges Policy as a Tool for Achieving Competitive Advantage in the Aviation Market <i>Irina Kuzmina-Merlino, Svetlana Saksonova, Karina Djakonova (Latvia)</i></p> <p>Introduction of the New Arrival RNAV Scheme for MINSK National Airport Airfield <i>Lizaveta Surynovich, Ivan Baraban (Belarus)</i></p> <p>Management of Financial Stability in Airlines: Problems and Solutions <i>Damira Aubakiova, Natalia Konovalova (Kazakhstan, Latvia)</i></p> <p>Analysis of Passenger Purchasing Behaviour and Revenue Increase Possibilities For Non-Aviation Airport Services <i>Alise Dinko, Anastasija Hismutova, Irina Yatskiv (Jackiva) (Latvia)</i></p> <p>Airports Typology and Development Paths <i>Anastasija Hismutova, Alise Dinko (Latvia)</i></p>	<p>How Computer System Validation Contributes to Performance Improvement in Latvian SME <i>Marius Schönberger, Tatjana Vasiljeva (Latvia)</i></p> <p>Investment Policy Development and Problems in Latvia <i>Sandra Jēkansone, Irina Skribāne, Solvita Kristone, Ilze Sproģe (Latvia)</i></p> <p>E-commerce market in the Baltic countries: state-of-the-art and trends of development <i>Daina Vasiļevska, Ilze Sproģe (Latvia)</i></p> <p>Benchmarking of Modern Communication Measurement Strategies in Major Enterprises Based on the Value-Benefit Analysis <i>Nicolas Dolle and Irina Kuzmina-Merlino (Germany, Latvia)</i></p> <p>Concentration Dynamics in the Market for Audit of Public Interest Entities in Latvia <i>Ludmila Rozgina, Svetlana Saksonova, Irina Kuzmina-Merlino (Latvia)</i></p> <p>Impact of the Human Capital Factors on the Country Competitiveness <i>Yelena Popova, Ilya Petrov (Latvia)</i></p> <p>Research of the Clients' Satisfaction and Loyalty in Hospitality Business <i>Ishgaley Ishmuhametovs, Vadim Martynenko (Latvia)</i></p> <p>Managerial problems of Russian technology start-ups <i>Natalia Salienko, Grigoriy Baev, Victoria Klyueva (Russia) (Skype)</i></p>
15:30–16:00	<b>Coffee Break</b>		
16:00 – 16:30	<b>Closing Session (Hall#1 – Aud.130)</b>		
17:00 – 19:00	<b>Social programme – Guided tour 'Old Riga'</b>		