



R&D Newsletter

**Transport
and Telecommunication
Institute
2018**

TSI CONFERENCES IN 2018

ACTUAL PROBLEM OF EDUCATION (MIP-2018) – INTERNATIONAL SCIENTIFIC AND EDUCATIONAL CONFERENCE

The MIP - 2018 conference was organized by Transport and Telecommunication Institute (TSI) and took place on 22-23 March 2018 in Riga, Latvia. This year's conference was attended by 64 participants. During the conference more than 29 reports were given in various areas.

Special interest was caused by the plenary session, that was attended by:

- **Prof. Alex Rayon Jerez** (University of Deusto, Bilbao, Spain) gave his presentation on topic: "Evidence based – learning and teaching through a data analytics approach"
 - **Prof. Igor Kabashkin** (TSI) gave his presentation on topic: "University 4.0: Reality and expectations"
- Moderator of plenary session was **TSI rector Juris Kanelis**.

More information on conference website:
<http://mip2018.tsi.lv/>



ANNUAL INTERNATIONAL CONFERENCES RESEARCH AND TECHNOLOGY – STEP INTO THE FUTURE (RaT-SiF)

The Annual International Conference "Research and Technology – Step into the Future" took place on **26-27 April 2018** and on **7 December 2018** in the Transport and Telecommunication Institute (TSI).

The RaT-SiF Conference is an annual event that provides a unique forum for young people to present their researches and to collaborate with their peers and takes place twice a year.

The **April** conference was attended by 58 participants and more than 39 reports were given in various areas. In frame of the December conference was organised Open workshop "From Data to Business Added Value".



December conference and workshop were attended by 68 participants and more than 27 reports were given. Moderator of the workshop - TTI Vice-rector, Prof., Dr.Sc.Ing. **Irina Yatskiv**.

The presentations were done by:

- **Vladyslav Yakovenko** - Deloitte Latvia
- **Dr. Romans Taranovs** - Deloitte Latvia
- **Dr. Mihails Savrasovs** - Transport and Telecommunication Institute

More information on conference
website: <http://ratsif2018s.tsi.lv/lv/>

DIGITAL IS RADICALLY CHANGING OUR BUSINESS AND LIFE!

By 26th of April 2018 in Transport and Telecommunication Institute (TSI) Open Workshop “Science-to-Business: Digitalization in Logistics and Transport” in frame of the project supported Baltic-German University Liaison Office and German Academic Exchange Service (DAAD) with funds from the Foreign Office of the Federal Republic Germany. More than 60 researchers (PhD and MSc students and their scientific supervisors) and stakeholders from transport and logistics communities from Baltic countries and Germany together discussed challenges, needs and identified areas for active collaboration between business and science, suggested the researchers the new tasks in identified actual research direction. At the beginning an introduction speech was made by **Ieva Pranka** the head of Baltic German University Liaison Office.

Workshop was started with fundamental keynote presentations from researcher’s community that were provided by:

- **Hon.-Prof. Dr.-Ing. Klaus Richter** (Fraunhofer Institute for Factory Operation and Automation IFF, Magdeburg, Germany)
- **Prof. Dr.hab.sc.ing. Igor Kabashkin** (TSI, Riga, Latvia) about actual research trends and examples of the successful collaboration between research and business.

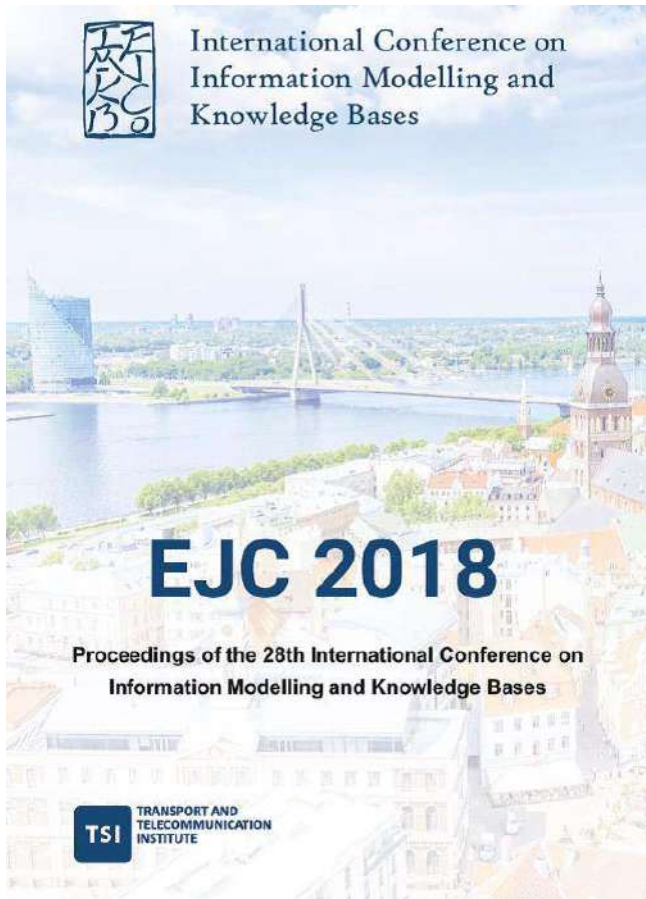
From business community the presentations were done by:

- **Dipl.-Vw. Kay Matzner**, Fraunhofer Institute for Factory Operation and Automation IFF (Germany)
- **Normunds Krūmiņš**, Latvian Logistic Association, Chairman of the Board (Latvia)
- **Artūrs Kokars**, Latvian Aviation Association, Chairman of the Board (Latvia)
- **Danila Larin**, Director of logistics control department, the Aviation Maintenance Holding (Russia)
- **Deniss Bičkovs**, Latvian Coast Guard Service, Shipping security officer (Latvia)

This project of the Baltic-German University Liaison Office is supported by the German Academic Exchange Service (DAAD) with funds from the Foreign Office of the Federal Republic Germany.



THE 28TH INTERNATIONAL CONFERENCE ON INFORMATION MODELLING AND KNOWLEDGE BASES (EJC 2018)



The series of International Conference on Information Modelling and Knowledge Bases originally started as a co-operation initiative between Japan and Finland in 1982. The practical operations were then organized by professor Ohsuga in Japan and professors Hannu Kangassalo and Hannu Jaakkola in Finland. Geographical scope has expanded to cover Europe (European Japanese Conference - EJC) and other countries (International Conference). This year the conference was held in Astor Riga Hotel in Riga, Latvia.

The EJC conference was attended by 45 participants. During the conference more than 40 reports were given in various areas. The conference participants came from 15 countries: Japan, Finland, Germany, Italy, Latvia, Poland, Slovakia, Czech Republic, Russia, Thailand, USA, etc. The main local organizer was TSI's postdoctoral researcher **Tatiana Endrjukaite**.

The firstday of the conference was held in Transport and Telecommunication Institute in Riga, the capital of the Republic of Latvia, in 4 June 2018. Prof.Dr.Sc.Ing. Irina Yatskiv welcomed all participants and gave presentation about Transport and Telecommunication Institute. Keynote speaker Dean of Computer Science and Telecommunication Faculty, **Mihails Savrasovs** gave his presentation on topic: "Simulation as a decision support tool".

A guided tour was organized by Transport and Telecommunication Institute introducing guests with Telecommunications, electronics and robotics center; Robotic technologies class; Image Processing, Biometry and Automated Border Control Systems laboratory.



More information about the Conference:
<http://www.ejc-conference.org/>

TSI INVITED LECTURERS IN 2018!

Decision making methodologies course for TTI Master and PhD students

On April 3, 2018, **Prof. Eftihia Nathanail from University of Thessaly, Greece**, gave the first lecture of the “Decision making methodologies” course for Master and PhD students of Transport and Telecommunication Institute (TSI).

Course topics:

- An Introduction to decision – making: background, techniques, concerns
- Monetary-based techniques (Cost-Effectiveness and Cost-Benefit Analysis (CBA))
- Multi-stakeholder multi-criteria analysis (Delphi, weighing, normalisation, Analytical Hierarchy Process)
- Multiattribute Utility Theory
- Outranking methods (Electre, TOPSIS, Promethee)
- Multi-objective mathematical programming
- Decision making in project management (transportation and logistics projects)



Open research seminar by Dr. Giannis Adamos



On April 5, 2018 Dr. **Giannis Adamos from University of Thessaly, Greece**, gave the research seminar for MSc and PhD students.

The seminar has been divided into 3 modules:

Module 1 – Theory and practice of scientific research

Module 2 – Ports and maritime transport

Module 3 – Urban form and transportation

A new course “Data-driven Business Intelligence” by professor Enrique Onieva



A new MSc course “Data-driven Business Intelligence” has completed in the Transport and Telecommunication Institute. The course was presented by guest prof. Enrique Onieva from Deusto University (Bilbao, Spain). Prof. Onieva is a well-known specialist in Machine Learning, one of top researchers in DeustoTech and director of the executive programme “Big Data and Business”. The presented course was devoted to application of modern methods of data analysis (association rules, decision trees, and classifiers) and has strongly highlighted practical orientation (R/RStudio).

RUNNING PROJECTS

ERASMUS+ KA2 “Spread your wings”

Acronym of the project:

SYW

Head of the Project from TSI:

Dr.sc .admin. Yulia Stukalina

Period:

01.12.2017.-31.08.2020.

3 partners from 3 countries:

Latvia, Poland, Lithuania are involved in this project.

1. University of Information Technology and Management in Rzeszow (Poland)
2. Transport and Telecommunication Institute (Latvia)
3. Kazimieras Simonavičius University (Lithuania)



Short description:

Project SYW started at 1st December 2017. The main aim of the project is modernization of the educational offer of 3 universities by developing, testing and implementation of an innovative course titled “The Development of Sustainable Aviation” for undergraduate and graduate students of Aviation Management as well as related faculties.

Funding: Total funding: 134 935.00 EUR



Project No. 8.1.1.0/17/I/009 "Modernisation of Transport and Telecommunications institute STEM study programmes"

Acronym of the project:

STEM

Head of the Project from TSI

Dr.sc .admin. Yulia Stukalina

Period:

21.11.2017. - 31.10.2019

Project tasks are as follows:

- modernize 3 auditoriums – investments in renovation and equipment;
- establish 2 new laboratories and upgrade 1 existing laboratory;
- modernize practical practice equipment and equipment for 3 aviation STEM study programmes;
- improve institutes IT infrastructure;
- upgrade library collections with electronic literature and new paper publications.

Short description:

The aim of the project is to modernize 11 STEM study programmes, increase the number of students in the STEM field and improve the material-technical base of the institute with state-of-the-art equipment and technologies with the priority being such thematic education groups as information technologies and engineering. In the long term, the project will contribute to the transformation of the Latvian economy with emphasis on high-end value-added products, promoting growth in sectors with a high potential for future growth and in sectors with significant horizontal effects.



REGULĀCIJUMS TAVĀ NĀKOTNĒ

NEW PROJECTS

Project "Strengthening Transport and Telecommunication Institute Academic Staff in the Areas of Strategic Specialisation" (STTIAS) No 8.2.2.0/18/A/011

On November, a new European Social Fund (ESF) project "Strengthening academic staff of Transport and Telecommunication Institute capacity in strategic specialisation areas" started at TSI. The project is funded by the European Union (85%) and the Latvian state (15%).

Acronym of the project: STTIAS

Head of the Project from TSI: Prof. Boriss Misnevs

Period: 01.11.2018.-30.10.2020.

The main goals of this project:

- The involvement of doctoral students in academic work.
- Attraction of academic staff from abroad.
- Improving the competence of academic staff (including internships at Latvian enterprises for academic staff and vocational English language training).
- The project involves the participation of academic and administrative staff of all three faculties. The project is scheduled for a period of 24 months until October 30, 2020.



IEGULDĪJUMS TAVĀ NĀKOTNĒ

Digitally supported and virtual study practices for modern logistic systems (DIGILOG) ERASMUS + KA2

Acronym of the project: DIGILOG

Head of the Project from TSI: Prof. Igor Kabashkin

Period: 01.09.2018.-31.08.2021.

The aim of the project:

The project aims to foster interchange and cooperation between education and training systems within the frame of digitalization of T&L under the new strategy of the European Union - the Single European Railway Area. To achieve the project aim, a virtual study environment will be established by network of four partner organizations. In this open and joint environment, every student or trainee will have the possibility to create an individual profile of study where selected themes from partner organizations are listed.

Partners:

1. TallinnaTehnikakool (Estonia)
2. Hame University Of Applied Science td (Finland)
3. Statens Vag-Och Transport for skningsinstitut (Sweden)
4. Transport and Telecommunication Institute(Latvia)

Short description:

Digitalization of Transport and Logistics (T&L) is one of the key pillars of the European Digital Single Market strategy. For the development of the sector, skilful and well-trained personnel with new competences in T&L is needed. Integration of the European core transport network, creation of the Single European Railway Area (SERA) and multinational operating environment is another important trend for the transport sector. Both of these trends require new unified supranational educational approaches for all participants in T&L higher education and VET. Enhancing e-learning and cross-curricular opportunities in universities and VET institutions is a way to harmonize the content of study practices over countries, and to prepare students and trainees for working in digital and multinational environments.

SUCCESSFULLY COMPLETED PROJECT

Sci-Bi: Digitalization in Logistics and Transport

Acronym of the project: Sci-Bi

Head of the Project from TSI:
Prof. Dr.sc.ing. Irina Yatskiv (Jackiva)

Period: 01.04.2018.-31.10.2018.

Short description:

The Baltic-German University Liaison Office supports projects, which promote the scientific cooperation between Estonia, Latvia and Lithuania, on the one hand, and Germany, on the other, and the cooperation between the Baltic States as well. The projects can represent any scientific field and can be carried out in different forms, such as seminars and guest lectures, research projects, conferences, publications etc.

The aim and goal of the project:

Strengthening the research capacity of Latvia in Digitalization in Logistics and Transport and stimulating synergies between research and business in Baltic. The goal for the sustainable development of Latvia's transport system is to fully integrate Latvia's transport infrastructure with the Trans-European multi-modal transport system. For transport infrastructures developing the essential conditions are: the effective use of the transport network; the planning of development from an economic point of view, taking into account established transport corridors; and the development potential of economic relations between the EU and neighbouring countries. It forms the core strategies in moving Latvia towards meeting the needs of human resource development and creates a pool of highly competent knowledgeable specialists.

Project consists of 3 planned/realized events:

- 1. 26.04.2018: Open Workshop “Digitalization in Logistics and Transport” in Riga, TSI:** Direct target group: PhD and Master students from Baltic Region, Baltic lecturers in transport and logistics;
- 2. 19.06.2018: International Doctoral Student Workshop (IDWL):** Input-Presentations from Latvian and German business speakers at IDWL in Magdeburg: Direct target group: PhD and Master students from different countries get input presentation from Latvian and German business speakers;
- 3. 16.10.2018: PhD seminar “Sci-Bi: Digitalization in Logistics and Transport” in Riga, TTI:** Direct target group: PhD and Master Students from Baltic Region, Business from Logistics and Transport sector; Indirect target group: Baltic lecturers in transport and logistics and doctoral supervisors.

Project is co-financed by The Baltic-German
University Liaison Office -
<http://www.hochschulkontor.lv/en/projects>



TSI ACTIVITIES IN 2018

Successful realization of the ALLIANCE project 2nd Summer School

With great success was realized at the premises of TSI in Riga, Latvia, the 2nd Summer school entitled: **“Sustainable Transport Interchanges Program (STIP) – Part II: Public Transport Systems: from research to decision making”** from 1st to 7th July, 2018. The Summer School was organized by the Transport and Telecommunication Institute (TSI), Traffic, Transportation and Logistics Laboratory of the University of Thessaly (TTLog) and Fraunhofer Institute for Factory Operation and Automation (IFF). In total 25 young researchers from Latvia, Greece and Germany participated in the Summer School.

The School was opened by the representative of the Latvian Transport Ministry **Ms. Inta Rozenšteina** (Deputy Director, Department of Finance and Development Planning), the Chairwoman of the Board JSC “Riga International Coach Terminal” **Dr. Vaira Gromule**, and TSI’s Vice-Rector for Science and Development Affairs and ALLIANCE Project coordinator **Prof. Irina Jackiva (Yatskiv)**.

Three invited lecturers gave their presentations in the field of planning and analysis of urban transport systems:

- **Mr. Javier Aldecoa Martínez-Conde**, winner of the ITF/UITP prize on outstanding innovation for public transport (Consortio Regional de Transportes de Madrid, Spain), lecture title: “Integration of sustainable transport modes in urban modal hubs”
- **Prof. Maria Eugenia Lopez Lambas** (TRANSyT, Universidad Politécnica de Madrid, Spain), lecture title: “Urban interchanges design: are we missing something?”
- **PhD Tamara Djukic** (Senior senior research engineer at Aimsun, Barcelona, Spain), lecture title: “Data as a service for better mobility planning, monitoring and organization”.

In addition, the young researchers who attended the Summer School had the opportunity to make educational visits to Riga’s Railway Central Station, Riga International Coach Terminal, Riga International Airport and Riga Passenger Port Terminal.



Participation of TSI in the XXI International conference “TransBaltica 2018”

TSI researchers **Prof. Irina Yatskiv (Jackiva)** and **Dr. Genadijs Gromovs** took part in the XXI International conference “TransBaltica 2018”, which was held on May 31 in the premises of the Riga City Council.

The conference was opened by the Minister of Transport of the Republic of Latvia Uldis Augulis with the presentation “Transport sector in Latvia and its development prospects”.

Key issues that were discussed at the conference concern EU Development of Trans-European Transport Networks (TEN-T) corridors and related challenges: digitalisation, alternative fuels availability and the place of Latvia in these processes (<http://www.rmsforum.lv/en/event/158>)

The participants’ auditorium of TransBaltica 2018 were representatives of the Ministry of Transport of the Republic of Latvia, The Parliament of the Republic of Latvia, Pricewaterhouse Coopers, VYGON Consulting, Latvian Railway, Ventspils nafta terminals (VNT), Baltijas Ekspresis, Riga International Bus Station, BDO Latvia, EVR Cargo, Embassy of the Republic of Estonia in Latvia, Freeport of Riga Authority, Atlas RFK, Liepaja Special Economic Zone, LatRailNet, Balt Market Consult, Schenker, Latvian Transit Business Association, Latvian Aviation Association, Ernst&Young Baltic, LDZ Loģistika, Ventspils Freeport Authority, etc.



Discussion on road safety governance in Riga

On May 30, 2018 Transport and Telecommunication Institute represented by **Prof. I. Yatskiv** and **Ms. K. Malnaca**, in collaboration with the International Transport Forum (ITF), organized a discussion about road safety governance in Riga, Latvia.

The key objective of the discussion was to understand the level of road safety in Riga, as well as to identify specific governance arrangements, policies and actions taken at a local level to improve road safety performance.

Representatives from Riga City Council Traffic Department and Road Traffic Safety Directorate explained their roles and responsibilities regarding road safety related issues in the city of Riga. The participants exchanged their views on the existing transport policy and future infrastructure investment plan focusing on

improving access, safety and quality of life in urban areas. This event was a part of Access and Safety in European Cities project carried out by ITF with the support of the European Commission.



Successful realization of the 11th International Doctoral Students Workshop on Logistics on June 18, 2018 in Magdeburg, Germany

On June 19-22, 2018, the Institute for Logistics and Material Handling Systems of the Otto von Guericke University (OVGU) Magdeburg, in cooperation with Fraunhofer IFF and with the support of ALLIANCE project, hosted the **11th International Doctoral Students Workshop on Logistics**. The Workshop was in the frame of the 21th IFF Science Days of the Fraunhofer Institute for Factory Operation and Automation.

Approximately, 40 guests from four countries were welcomed this year, among them participants from Hungary, Cuba, Latvia and Germany. In total 12 presentations were made from doctoral students, generating insight into their dissertations' topics or into the common scientific work of the ALLIANCE collaborative research teams. For the first time Dr.-Ing. Sebastian Trojahn from OVGU gave an introductory speech about how to write a dissertation and presented useful tips to the students. Another highlight

of this year was the moderation of the discussion table "Logistics networks and organization" by Prof. Irina Yatskiv from TSI, in the frame of ALLIANCE project and SCI-BI.

For further information please see:

<http://www.ilm.ovgu.de/doktorandenworkshop.html>



TSI participation in the 15th Anniversary of the Association of Pan-European Coach Terminals (APC)



The Association of Pan-European Coach Terminals (APC) celebrated its 15th anniversary by organizing a workshop entitled "Innovations in passenger transport with bus and coach and terminal development in the future" in Riga, September 3-5, 2018. Representatives from public transport authorities, operators, coach terminals, APC members and Transport and Telecommunication Institute (TSI) had the opportunity to share experiences and provide insights into the future development of passenger transport services.

TSI Vice-Rector for Science and Development Affairs **Prof. Irina Yatskiv** gave a presentation about one of the most emerging topics in transportation research entitled "Possible effects of connected and automated

driving on the economy, employment and skills". Analytically, Prof. Yatskiv presented an overview of the challenges and main research questions in this area, focusing on risks and safety. This presentation is based on Prof. Yatskiv participation at the **6th EU-US Transportation Research Symposium JUNE 26-27, 2018 (Brussels)** "Socio-economic Impacts of Automated and Connected Vehicles" that organized the Transportation Research Board (TRB), in collaboration with the European Commission (EC) and US Department of Transportation (USDOT). During this two-day symposium 25 researchers from EU countries and 25 researchers from US discussed the draft of European White Paper "Synthesis of the Socio-Economic Effects of Connected and Automated Vehicles and Shared Mobility".

TSI researcher **Kristine Malnaca** presented the results of the study "Economic viability of converted diesel city bus into electric bus" which was performed within a research project implemented by the company "Ferrus" in Riga. Other topics that were discussed were the assessment of new bus technologies, passenger needs, management and improvement of public transport services, safety and security in passenger terminals and future challenges for public transport service development.

ALLIANCE project co-organizes a special session in ETC 2018

ALLIANCE project co-organizes the special session entitled **“Education and Training – New challenges towards the Future Transport”** which was held within the European Transport Conference (ETC) on 10-12 October 2018 in Dublin, Ireland. The scope of the special session was to disseminate information about the progress and the findings of the project as well as to identify the linkages between education, research, and industry based on ALLIANCE project’s experience.

The agenda of the special issue included among others the following topics:

- Partnerships for innovation, skill, and jobs and how to engage the profitable international cooperation (Prof. **Irina Yatskiv (Jackiva)**, TSI)
- New educational program on intermodal connections (**Dr. Giannis Adamos**, UTH)
- Assessing knowledge of stakeholders on sustainable interchanges’ design and operation (**Dr. Mihails Savrasovs**, TSI)

Moreover, roundtables between researchers and stakeholders were organized addressing the following questions:

1. How to facilitate stakeholder collaboration and the development of strong linkage among education, research, and industry?
2. How can we focus education, research, and innovation activity on social and economic development?
3. Balanced combination to the triplex of research/education, industry and policy makers, acknowledging the key role of society. How to increase related R&I impact and exploitation? How to identify the skills and competencies needed
4. by the Transport workforce of the future?

For more information about the ETC 2018, visit Conference’s website.



TSI SCIENTIFIC WEEK

We would like to thank PhD and Master students, their supervisors, researchers and representatives from Latvian business community for participation and presentations that were given in frame of the **TSI Scientific week from 16 to 20 October 2018**. During the TSI Science week following events has been realized:

PhD seminar “Sci-Bi: Digitalization in Logistics and Transport”

The seminar was organized by Transport and Telecommunication Institute (TSI) and took place on 16 October 2018 in Riga, Latvia. The aim of the project is strengthening the research capacity of Latvia in Digitalization in Logistics and Transport and stimulating synergies between research and business in Baltic.

The PhD seminar “Sci-Bi: Digitalization in Logistics and Transport” has been divided into 4 sections.

PhD and Master students, their supervisors, researchers and representatives from logistics and transport business gave their presentations on the following topics:

1. Smart Solutions in Logistics and Transport
2. Decision-making on the basis of Modelling and Simulation
3. Impacts on Economics and Society

Workshop was started with fundamental keynote presentations from researcher’s community that were provided by:

- **M.Sc. Sebastian Lang** (Otto von Guericke University Magdeburg, Institute of Logistics and Material Handling Systems (ILM), Germany))
- **Prof. Dr.sc.ing. Irina Yatskiv** (TSI, Riga, Latvia)

Also, the presentations were done by PhD and Master students:

- **M.Sc. Paulius Skačkauskas**, Vilnius Gediminas Technical University (Lithuania)
- **M.Sc. Ilya Jackson**, Transport and Telecommunication Institute (Latvia)
- **Andris Spulis**, Riga International School of Economics and Business and Business administration – RISEBA (Latvia)
- **M.Sc. Tom Assmann**, Fraunhofer Institute for Factory Operation and Automation IFF (Germany)

More information about the project can be found here: <http://www.tsi.lv/en/content/sci-bi-digitalization-logistics-and-transport>



This project is supported by the German Academic Exchange Service(DAAD) with funds from the Foreign Office of the Federal Republic Germany.

ALLIANCE Final Conference

“Sustainable urban interchanges: Trends and new prospects”

The Transport and Telecommunication Institute (TSI) in cooperation with Traffic, Transportation and Logistics Laboratory of the University of Thessaly (TTLog) and Fraunhofer Institute for Factory Operation and Automation (Fraunhofer IFF) successfully realized the **ALLIANCE Final Conference “Sustainable urban interchanges: Trends and new prospects”** on 17 October 2018 at the premises of TSI in Riga, Latvia. In total 52 participants from Latvia, Greece and Germany participated in the Conference.

The ALLIANCE Final Conference aimed at bringing together Latvian and European researchers, practitioners and stakeholders to share the results of the project as well as to discuss about trends and new prospects on sustainable urban interchanges.

In the first part of the Conference, a summary of the main outcomes of the ALLIANCE project was given, and the project’s collaboration teams presented the key findings of their three-year common research work in a Poster Session. In the second part, representatives of Latvian transport bodies discussed in a roundtable about the challenges and trends in Latvian transport interchanges development.



More information about the project can be found here: <http://alliance-project.eu/>

The 18th International Multi-Conference "Reliability and Statistics in Transportation and Communication" (RelStat-2018)

The 18th International Multidisciplinary Conference of Reliability and Statistics in Transportation and Communication (RelStat-18) was held in the Transport and Telecommunication Institute (TTI) on 18-20 October 2018 in Riga, Latvia.

This year's conference was attended by 106 participants. During the conference more than 96 reports were given in various areas. The conference participants came from 18 countries: Algeria, Belarus, Bulgaria, Czech Republic, Estonia, France, Germany, Greece, Hungary, Israel, Japan, Latvia, Lithuania, Poland, Russia, Slovakia, Spain, Ukraine.

Selected papers will be published in the conference proceeding by Springer Lecture Notes in Networks and Systems <http://www.springer.com/series/15179>

This year a special interest was caused by the plenary session, that was attended by:

- **Prof. Enrique Onieva (Spain)** - top-ranked specialist in Machine Learning, one of top researchers in DeustoTech and director of the executive programme "Big Data and Business" gave his presentation on topic: "Artificial Intelligence and Data Analysis Applications in Intelligent Transportation Systems"
- **Prof. Itzhak Benenson (Israel)** - Professor of Geography at the Department of Geography and Human Environment of Tel Aviv University, Israel, and a Head of the Geosimulation and Spatial Analysis lab gave his presentation on topic: "SMART-PT: Adaptive Public Transport for a Smart City"
- **Prof. Gunnar Prause** - Board Member of the Institute of Cooperative Studies at Humboldt University Berlin, gave his presentation on topic: "The Socio-Economic Impact of Green Shipping: A Holistic View from the Baltic Sea Region"



ANNOUNCEMENT

TSI Students in European Projects!

On 6 June 2018, three Transport and Telecommunication (TTI) students participated in international workshop, that was organized in the frame of project **“Harmonised and Modernised Multidisciplinary Railway Education” (EDU-RAIL)**.

It was a great opportunity to get in touch with state-of-the-art railway engineering programmes in frame of the EDU-RAIL project.

The project managed to develop various innovative modules taking into account standards of the European railway system and joint regional aspects. The project may be considered as a brilliant vocational training programme and was quite useful for international networking.



Congratulations to Evelīna Budiloviča for the ALLIANCE Scientific Excellence Award 2018!



In 2017, during RelStat'17, the Management Board of the ALLIANCE project announced the scientific excellence award for the young researchers participating in the research collaboration teams of the project.

In October 2018, the members of the Management Board received four applications from young researchers, and after

evaluating the application forms, they decided during the 6th Project Management Board meeting that the Certificate of Recognition is awarded to **Ms. Evelīna Budiloviča** for being an outstanding young researcher and winning the ALLIANCE Scientific Excellence Award 2018 for active and fruitful collaboration in international research teams.

The awarded ceremony was realized during RelStat'2018, organised by the Transport and Telecommunication Institute on 17-20 October 2018 in Riga, Latvia.

The awarded student Evelīna Budiloviča will be financially supported to visit POLIS 2018 Conference in November 2018. Ms. Budiloviča is a PhD student of Transport and Telecommunication institute and at the same time, she works at Riga Municipality Development Department. Her PhD thesis is related to sustainability measurement framework development.

During ALLIANCE project, she actively participated in all organised events and she was an active member of the research collaboration team. The last 3 years, she has published a number of significant publications related to ALLIANCE scope and topics of research.

Participation of TSI's researchers in the international conference

The 4th International Conference on Logistics Operations Management (GOL)

Iyad Alomar from TSI participated in the 4th International Conference on Logistics Operations Management (GOL), that was held in Le Havre, France, on April 10-12, 2018. Iyad Alomar gave his presentation on topic: "Shortening the turnaround times of aircraft by improving ground handling processes through a simulation study". Conference aims to bring together researchers and professionals interested in logistics not only from a technology standpoint but also from a social sciences perspective. This multi-disciplinary approach will examine the current state of the art focusing on new techniques and models relevant to the operations management of various logistics flows. The

scope of the conference to cover several topics such as logistics systems modelling, decision support systems, information systems, legal and regulatory environments, framework and control of the global logistics chain, manufacturing organization, transport and storage operations, performance modelling and measurement, risk analysis and planning.



The 27th Nordic Conference in Mathematical Statistics (NORDSTAT2018)

TSI's postdoctoral researcher **Nadezda Spiridovska** (Project 1.1.1.2/VIAA/1/16/075, "Nontraditional regression models in transport modelling") participated in **NORDSTAT2018 – The 27th Nordic Conference in Mathematical Statistics**, held in Tartu, Estonia, from 26th till 29th of June 2018. The conference was organised by the Institute of Mathematics and Statistics in cooperation with Reisiexpert/Conference Expert.

The programme of the Conference included different actual topics in Statistics: Computational Bayesian statistics, Statistical inference for stochastic differential equations, Applications in spatial and spatio-temporal statistics, Functional data analysis among many others. Keynote speeches were presented by luminaries in Statistics such as: Aad van der Vaart (Leiden University), Steffen Lauritzen (University of Copenhagen), Håvard Rue (King Abdullah University of Science and Technology), Hermann Thorisson (University of Iceland), Pauliina Ilmonen (Aalto University), Filip Lindskog (Stockholm University), Tõnu Kollo (University of Tartu).

The original research entitled "On a parametrical estimation for a convolution of exponential densities" (with collaboration with prof. Alexander Andronov) was presented at the Conference. This study concerns the approximation of arbitrary nonnegative density by a convolution of exponential densities, the usage of which is an approach of considerable interest since broad application of the continuous time Markov chain is caused by memoryless property of exponential distribution, but an employment of non-exponential distributions leads to remarkable analytical difficulties.



More information about the Conference can be found via the following link: <http://nordstat2018.ut.ee/>

International Conference on Information Systems, Logistics and Supply Chain (ILS2018)

TSI's researchers **Aleksandrs Avdeikins** and **Raitis Apsalons** participated in ILS2018 – International Conference on Information Systems, Logistics and Supply Chain, held in Lyon, France on July 8-11, 2018. Aleksandrs Avdeikins gave his presentation on topic: “Using smart logistics technologies to make added value in the Baltic transit to the Russian Federation” and Raitis Apsalons presentations topic: “The impact of picking flow uncertainty on outbound flow of supply chain”.

The theme of the ILS 2018 conference was: Sustainable impacts of digitalised supply chains.

The objective of the ILS international conference is to bring together researchers, business leaders and professionals from industry and services to share and exchange on world class research related to supply chain design and management, information and

decision-making systems, innovative practices in logistics, etc.

The 2018 edition aims at discussing sustainability from all perspectives: sustainability with human, social and environmental impact as well as economic viability and technological state-of-the art. Special attention will be devoted to the role of digital solutions and economic intelligence in this multi-dimensional supply chain challenge.

More information about the Conference on website: <https://ils2018.sciencesconf.org/>



29th European Conference on Operational Research (EURO2018)

TSI's postdoctoral researcher **Nadezda Spiridovska** participated also in **EURO2018 – 29th European Conference on Operational Research**, which was held by the two major Valencian universities, Universitat de València and Universitat Politècnica de València from 8th till 11th of July 2018 in Valencia. EURO 2018 is the largest and most important conference for Operational Research and Management Science (OR/MS) in Europe organized by EURO – the European Association of Operational Research Society and the Spanish Statistics and Operations Research Society. More than 1000 participants attended the conference.

The research “Public transport passenger flow analysis and prediction using alternating Markov-modulated linear regression”, which was presented at the conference, includes alternating Markov-modulated linear regression application for the tram's line passenger flow analysis taking into account weather conditions as the external environment. Participation

in this conference allowed the postdoctoral researcher to popularize her research and present the results to a wide audience.

EURO conferences gather the finest researchers in the OR/MS and sister areas. The program committee is composed of highly devoted individuals and experts in some of these areas.



Conference booklet and final complete book is available via the following link:
<http://euro2018valencia.com/conference-booklet-and-final-complete-book-available/>

hEART 2018 – 7th Symposium of the European Association for Research in Transportation conference



TSI's postdoctoral researcher, **Dmitry Pavlyuk**, participated in hEART 2018 – 7th Symposium of the European Association for Research in Transportation conference, hosted by the Technical University of Munich,

Germany and the National Technical University of Athens, Greece from 5th till 7th of September 2018 in Athens.

The study “Spatiotemporal structure of urban traffic flows: from road network to data-driven feature selection” was presented at the Conference, among more than 100 presentations from top researchers and transport engineers from all over the world. This study was devoted to empirical comparison of different feature selection approaches to identification of the spatiotemporal structure in statistical forecasting models and discovering bounds of their applicability for citywide urban networks.

The very intensive programme of the Conference

included emerging topics in transportation: travel behaviour modelling, automated driving, traffic control, macroscopic models of traffic flows, road safety, among many others. Keynote speeches were presented by famous prof. Kostas Goulias, UC Santa Barbara, prof. Elise Miller-Hooks, George Mason University and prof. Markos Papageorgiou, TU Crete. In addition, Dmitry Pavlyuk used the opportunity to participate in a pre-conference summer school, where prof. A. Polydoropoulou, A. Alahi, T. Toledo, E. Jenelius, and L. Leclercq presented overview of their current research topics.

The Conference is an excellent place for establishing new academic contacts for future collaboration, exchanging of new ideas in transport area, as well as for making new friends.

Find the abstracts that were presented in hEART2018 by following link:

https://www.events.tum.de/frontend/tum/media/hEART2018/Proceedings/hEART2018_Abstracts.zip

Winter Simulation Conference (WSC)

TTI's PhD student, **Ilya Jackson**, participated in the Winter Simulation Conference that took place on December 9-12 in Gothenburg, Sweden. The Winter Simulation Conference (WSC) is the innovative international forum for discussion of recent advances in the field of simulation modelling. Over the past 50 years WSC provides the common multidisciplinary platform for simulation-software developers, researchers, and practitioners from industry, service, academia and governmental sectors. This year more than 800 participants from all over the world visited WSC in order to share original ideas and gain new business connections. During the conference Ilya Jackson was able to witness that simulation is an extremely vibrant field. Simulation modelling is developing swiftly fostering new cutting-edge ideas and incorporating state-of-the-art methodology. Alongside, with theoretical breakthroughs, such software giants as Siemens, Mathworks, Simio and AnyLogic are continuously developing their products keeping up with the times.

The event was held under the motto “Simulation for a Noble Cause” seeking to highlight applications of simulation for social and ethical issues faced by humanity. Namely, poverty reduction, world hunger, environmental issues, humanitarian aids and disaster response. In this regard, our research was focused on

the project with potentially gargantuan social impact, namely Rail Baltica. In paper “Dynamic Model of the Passenger Flow on Rail Baltica” proposed by Ilya Jackson the design and application of a model simulating the passenger flows on the high-speed rail line. The proposed model is developed in order to allow the stakeholders of Rail Baltica to define passenger flow service indicators along the railway. WSC was a perfect place for discussion of such an important for Latvia project and promotion of the Latvian simulation community. Besides that, such an event was very fruitful for his PhD thesis nourishing it with fresh ideas.

More information about the conference on website: <http://meetings2.informs.org/wordpress/wsc2018/>



TSI IMPORTANT EVENTS 2018

Fair Day 2018

Fair day at the Transport and Telecommunication Institute began in 2012. It was a day with companies-wide lectures and presentations.

The event has been widely responded and, since 2016, the Fair Day is taking place in a much wider format, with open lectures and presentations, as well as companies with their stands throughout the day to communicate with students about practice, work and career opportunities.

In total, 38 companies joined the Fair Day 2018. 24 companies from all over the world were represented by their stands - information technology and telecommunications, air, sea and land transport, logistics, robotics, various online services, real estate management, etc.: Accenture, Airline Support Baltic, Atea Global Services, ATLANT-TEC, Baltic Express LV, C.T.Co, DECTA, EVRY Latvia, Evolution Latvia, GEFCO

Baltic, Intechsystems, Kreiss, KUEHNE+NAGEL, Like a Coffee, MSC Shared Service Center Riga, Prakse.LV, RAF-AVIA, Rigas namu parvaldnieks, International airport "Riga", TELE2 Shared Service Center, Tieto Latvia, Webhelp Latvia, X INFOTECH ZABBIX, Transport and Telecommunication Institute.

During the career days, students actively took the opportunity to visit some of the 12 companies' interesting lectures and presentations on ICT, transport and logistics topics.

At the end of the career day, 10 companies have taken care of the pleasant surprises of students - many of the most active were receiving interesting and valuable prizes.

Thank you to the companies - partners, students, other interested persons for active participation in the Fair Day in 2018!

Science Night 2018

On September 28, 2018, Science Night 2018 was held in Transport and Telecommunication Institute (TSI). Annual European Researchers' Night took place in over 340 cities across Europe and in other countries. „Science Night” – the public event dedicated to popular science and fun learning to everyone! This year's theme - SCIENCE THAT MAKES US! TSI has invited everyone to visit the newest laboratories in TSI. TSI has provided an unforgettable experience for all visitors, who arrived that night. The Science Night program offered how to program and use in everyday life humanoid robot NAO and voice Assistant Alexa, industrial robots demonstrations: robot KUKA – a painter, Collaborative universal robot UR3 handing out candies, mobile robot competitions in sumo and football, race tracks, 3D printer possibilities,

Augmented and Virtual reality, Drone polygon with flying tasks and labyrinth, masterclass for prospective electricians and also Aircraft AN-2 simulator demonstration and had the opportunity to meet animals as robots in the Future Zoo. And finally - guest lecture „User identification: today & tomorrow” from business partners X-INFOTECH. European Researcher's night at TSI.

During the „Science Night” on September 28, 2018, Transport and Telecommunication Institute was visited by more than 892 guests! Among them were pupils and teachers, parents and just curious visitors. The visitors signed up by groups, there were whole busses of people interested in this event. European „Science Night 2018” at TSI was properly held!





TSI Action Days with Accenture

Action Days were held by Accenture Latvia at the Transport and Communication Institute (TSI) from 5 to 6 November 2018. This time this regular event was aimed at first-course students of the TSI Faculty of Computer Sciences and Telecommunications studying:

- computer sciences
- electronics
- telecommunication systems and computer networks

The event was presented by Jevgenijs Kersovs, Dmitrijs Zhuravlovs-Nevskis and Kirils Tolkuns, the leading experts of Accenture Latvia.

The main purpose of this event was introducing the students to IT professions and new trends in software development, including an opportunity for the students to try a hand as developers, and a lot more. This year, the TSI event again featured a presentation of Voice Assistant Alexa.

The Institute was also visited by Humanoid Robot Nao. The robot played a ball game, did push-ups, danced and answered hard questions, too.

Wings Over Baltics Airshow 2018

The show was organised at Tukums- Jurmala Airport and was held on a two days event that was of the biggest Aviation event in the Baltics and the whole Europe. TSI with APAC Drone School took participation and was one of the air show main sponsors. The event was attended by the Baltic Bees Jet Team, the MiG-29

destroyer from the Polish Air Force, the Scandinavian Airshow CATWALK, the AirBaltic Airbus A220-300, Team Orlik, Aerosparx and the race between the jet L39C and BMW Latvia M5 - which will be faste

OpenAIRE Horizon 2020 Framework Gets on a New Level with OpenAIRE Obtaining Independent Entity Status

OpenAIRE Horizon 2020 is the European Commission-funded framework under the broader Open Science Policy (OSP) aiming at transforming science through ICT tools, networks and media. The European Union OSP ultimate goal is to make research more open, global, collaborative, creative and closer to society. OpenAIRE-specific mission is to facilitate openness of science by creating tools of sharing research outputs.

On 29 October 2018 OpenAIRE, the implementing body for the framework, has gotten a status of the independent non-profit organisation. Its mission is to “shift scholarly communication towards openness and transparency and facilitate innovative ways to communicate and monitor research”.

Since 2017 the OpenAire FAIR (Findable, Accessible, Interoperable, Re-usable Data) standards are a requirement for all Horizon 2020 Programme

participants. Under the standards, researchers & research managers follow Data Management Plan to assure quality, information dissemination and build on best practices around Europe. Additionally, Individual researchers and research institutions are encouraged to contribute to open data repository Zenodo, provide open access and reuse of research data generated by Horizon 2020 projects.

Transport and Telecommunication Institute (TTI) proudly commits to values and will continue implementing OpenAIRE Horizon 2020 mission, goals and standards according to our best Research & Development practices. In particular, the Research & Development Department of the TTI welcomes OpenAIRE Monitoring Services, which will accelerate our capabilities of monitoring progress, do risk analysis and accommodate KPI results for our future development.



ECTRI 15 Year Anniversary Event

On December 12th, 2018, the European Conference of Transport Research Institutes (ECTRI) was celebrating 15th year of existence and achievements with a special event organized in Brussels, at Le Bouche à Oreille. **December 12th, 2018 / 18:00 – 21:30 / Le Bouche à Oreille, Brussels, Belgium**

On this occasion, distinguished personalities were brought together to discuss challenges and opportunities for the future of European research and innovation in the transport domain in the perspective of the new Framework Programme – Horizon Europe. The panel discussion has been preceded by brief scientific speeches from prominent ECTRI researchers on topics moving forward our vision to achieve a sustainable and multimodal transport system. The event was moderated by Ms Jacki Davis, Journalist. It was attended by a select audience of personalities,

representatives from all sectors of European transport as well as ECTRI Members and associated or cooperating Organisations and was followed by a reception at the same venue.

More information and programme on website:
<http://ectri.eu/ectri-15-year-anniversary/>



CONGRATULATIONS

TSI Research & Development Department earns ISO 9001:2015 Quality Management Certification



Riga, Latvia, Nov 2018 – Transport and Telecommunication Institute Research & Development (RD) Department proudly announces that we ensured ISO 9001:2015 Quality Management certification as of Nov. 29, 2018.

International Organization for Standardization (ISO) 9001:2015 is the most updated standard of its kind and focuses on quality management systems and performance. A successful certification is tangible proof of the RD Department lasting “ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements” by effectively applying a comprehensive quality control system.

The RD Department appreciate efforts of all involved parties and individuals who made the certification happen. Separately, we would like warm-heartedly to express our gratitude to the registrar LRTDEA - TÜV RheinlandGrupa for high professionalism in performing the external audit.

The RD Department understands the importance of the quality management standard approval and will continue constant verification of research and development management quality to ensure continuous satisfaction of our partners and clients in academia, the private sector and beyond.

