



TRANSPORTA
UN SAKARU
INSTITŪTS

Evaluation of the research performance of TTI

2012

GENERAL INFORMATION	3
G.1. INSTITUTION'S/UNIT'S RESEARCH PROFILE	4
G.2. OTHER RELEVANT FIELDS CONNECTED TO THE INSTITUTION'S/UNIT'S RESEARCH PROFILE	4
1. RESOURCES	5
1.1. STAFF IN 2012 (PERSON-MONTHS OR FTE)	5
1.2. ACADEMIC AND POSTDOCTORAL RESEARCHERS (PERSONNEL WITH DOCTORAL DEGREE)	5
2. RESEARCH OUTPUT	6
2.1. DESCRIBE THE INSTITUTION'S/UNIT'S RESEARCH	6
2.2. NUMBER OF SCIENTIFIC PUBLICATIONS AND OTHER OUTPUTS 2012	6
2.3. LISTS OF MOST IMPORTANT PUBLICATIONS BY ACADEMIC PERSONNEL AND RESEARCHERS WITH DOCTORAL DEGREE	6
2.4. COPIES OF THE INSTITUTION'S/UNIT'S BEST PUBLICATIONS	10
3. DOCTORAL TRAINING	12
3.1. NUMBER OF STUDENTS IN 2012	12
3.2. LIST OF DOCTORAL DISSERTATIONS IN 2012 AND PRESENT EMPLOYMENT	12
4. NATIONAL AND INTERNATIONAL COLLABORATION	13
4.1. NATIONAL COLLABORATION	13
4.2. VISITS ABROAD (MINIMUM DURATION OF VISIT: ONE MONTH) IN 2012	13
4.3. VISITS TO THE UNIT (MINIMUM DURATION OF VISIT: ONE MONTH) IN 2012	14
4.4. MOST IMPORTANT FOREIGN COLLABORATORS	14
4.5. DESCRIBE THE MOST IMPORTANT OUTCOMES OF THE VISITS AND COLLABORATION CONTACTS	15
4.6. NON-ACADEMIC COLLABORATION	15
5. OTHER SCIENTIFIC AND SOCIETAL ACTIVITIES	16
5.1. INVITED PRESENTATIONS IN SCIENTIFIC CONFERENCES	16
5.2. MEMBERSHIPS IN EDITORIAL BOARDS OF SCIENTIFIC JOURNALS	16
5.3. PRIZES AWARDED TO RESEARCHERS, HONOURS AND SCIENTIFIC POSITIONS OF TRUST	17
5.4. MEMBERSHIPS IN COMMITTEES AND IN SCIENTIFIC ADVISORY BOARDS OF BUSINESS COMPANIES OR OTHER SIMILAR TASKS OF NO PRIMARILY ACADEMIC NATURE	17
6. THE INSTITUTION'S/UNIT'S SELF-ASSESSMENT	20
6.1 SWOT – EVALUATION OF THE UNIT'S SCIENTIFIC STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS ...	20
6.2. EVALUATE THE UNIT IN RELATION TO ITS LEADING SCIENTIFIC COMPETITORS	20
6.3. THE INSTITUTION'S/UNIT'S RESEARCH STRATEGY (RELATION TO THE STATE'/PARENT ORGANISATION'S STRATEGY, RESEARCH PRIORITY AREAS, DEVELOPMENT MEASURES, PERFORMANCE INDICATORS)	20
6.5. ASSESS THE ROLE OF THE INSTITUTION/UNIT IN DOCTORAL TRAINING AS WELL AS ACADEMIC AND SOCIETAL NEED FOR DOCTORAL TRAINING WITHIN THE INSTITUTION'S/UNIT'S RESEARCH FIELDS	20
6.6. ASSESS THE INSTITUTION'S/UNIT'S RESEARCH INFRASTRUCTURE	20
7. FUNDING	21
7.1. THE INSTITUTION'S/UNIT'S FUNDING FOR SCIENTIFIC ACTIVITIES	21
1. HIGHWAY P133 AND ZIEMELU STREET INTERSECTION SIMULATION AND CAPACITY ESTIMATION, 09.2012 – 12.2012, 1 863 LVL	22
7.2. EVALUATE THE ROLE OF DIFFERENT FUNDING SOURCES (STATE AND DIFFERENT FUNDING ORGANISATIONS) IN PROMOTING THE SCIENTIFIC AND SOCIETAL IMPACT OF RESEARCH	22

GENERAL INFORMATION

Institution	Transport and Telecommunication Institute
Address	1 Lomonosov street, Riga LV-1019, Latvia
Phone	+37167100594
Internet home page	www.tsi.lv
Unit or equivalent (department, laboratory, faculty, institution)	Institution
Address	1 Lomonosov street, Riga LV-1019, Latvia
Phone	+37167100675
Head of the Institution/Unit	B. Mishnev
Phone	+37167100675
E-mail	Misnevs.B@tsi.lv
Contact person for the Evaluation	Mihails Savrasovs
Phone	+37167100584
E-mail	mms@tsi.lv

G.1. Institution's/Unit's research profile

(give estimate percentage)

Research fields	(%)
Transport and Traffic	50
Information Technologies	15
Computer Science	15
Electronics and Telecommunication	10
Economics	5

G.2. Other relevant fields connected to the Institution's/Unit's research profile

(Mark with x the columns 1, 2 or 3, where 1=collaboration, 2=joint projects, 3=integrated in the group. More than one column can be marked in the same row.)

Research fields	1	2	3
Sociology	X		
Mathematics	X		
Physics	X		

1. RESOURCES

1.1. Staff in 2012 (person-months or FTE)

See instructions at the end of the report.

	2012
Academic personnel	41
Professors	12/ 7.1
Associated Professors	3/ 1.75
Docents	3/ 1.5
Lecturers	7/ 3.2
Assistants	1 / 0.5
Doctoral students (among the above)	15/7.7
Academic research personnel	
Leading researchers	
Researchers	
Research Assistants	
Doctoral students (among the above)	
Other academic personnel	
Visiting Professors	1/0.6
Visiting researchers and visiting research Students	5
Total active academic and research personnel	91
Administrative personnel ¹⁾	26/9.5
Technical personnel ²⁾	28/5.3
Other (e.g., cleaners, security guard) ³⁾	38/3.1
Total staff at the institution/unit	183

¹⁾ Includes all administrative personnel

²⁾ Includes all technical personnel

³⁾ Includes all personnel not included in the other categories in the table.

1.2. Academic and postdoctoral researchers (personnel with doctoral degree)

Name, Surname	Position	Period of time
Jurijs Krasnitsky	Professor	02/2006-08/2009
	Visiting Professor	09/2009-till present
Viktors Truhachovs	Assistant Professor	01/2006-till present

2. RESEARCH OUTPUT

2.1. Describe the Institution's/Unit's research

2.2. Number of scientific publications and other outputs 2012

	2012
1. Original articles in anonymously refereed scientific journals cited in <i>Thomson Reuters Web of Science</i> , SCOPUS, ERIH or Engineering Village	20
2. Articles in other refereed scientific edited journals and conference proceedings	71
3. Monographs published ¹⁾	2
4. Other scientific publications ²⁾	
5. Text books and other research-related publications	2
6. Patents/ including international	2
7. Computer programs and algorithms ³⁾	
8. Registered cultivars	
9. Conference abstracts	70
10. Visiting lectures	37
11. Articles, radio and television programmes and journals popularising science	42
12. Other ⁴⁾	

¹⁾ Includes doctoral theses and monographs

²⁾ Includes edited proceedings, collections and special issues of scientific journals, and unrefereed scientific articles, excluding conference abstracts

³⁾ Approximates the number of programs and algorithms that have been in use outside the unit.

⁴⁾ May include design products, prototypes, artefacts, exhibitions, performances etc. Please specify.

2.3. Lists of most important publications by academic personnel and researchers with doctoral degree

(max 7 publications/person)

Each academic staff member and researcher will list 7 of his/her key publications during the period under review, preferably indicated in the order of quality. The list may also include manuscripts published in 2012 or manuscripts approved for publication but still unpublished. References to books should include names of editors, place of publication, and year.

Alexander Andronov

A.Andronov and D.Santalova. "Statistical Estimates for Modified Gravitation Model by Aggregated Data", *Communication in Statistics - Simulation and Computation*, Vol. 41. 2012, pp.730 – 745, ISSN 0361-0918 [SCOPUS]

Alexander Grakovski

A.Batenko, G. Berzins, **A.Grakovski**, I.Kabashkin, E.Petersons and V.Truhachov. "Experimental research of the external factors impact on the measurement's properties and calibration of weight-in-motion fibre optic sensor". *Proceedings of the 12th International Conference "Reliability and*

Statistics in Transportation and Communication” (RelStat’12). 2012. ISBN 9789984818498, pp. 267–273.

A.Grakovski, A. Batenko, G. Berzins, I.Kabashkin, E.Petersons and V.Truhachov. "Impact of external factors on the measurement of weight-in-motion by fibre optic sensor", Computer Modelling and New Technologies, Vol. 16. 2012 (in print)

V.Truhachov and **A. Grakovski**. "Signal simulation fiber-optic sensors measuring weight", Computer Modelling and New Technologies, Vol. 16. 2012 (in print).

A.Grakovski and I. Kabashkin. "Project „Fiber optic sensor applications for automatic measurement of the weight of vehicles in motion: research and development” foreword", Computer Modelling and New Technologies, Vol. 16. 2012. (in print)

Gennady Gromov

G. Gromov, V. Kuznetsov, A. Vigovska and I. Grigorjeva. "Applying a Case Study Approach to Improve the Learning Outcomes in Logistics Education". Actual problems of education. 2012. ISBN 9789984818559, pp. 15-18.

Igor Kabashkin

I. Kabashkin. "Freight Transport Logistics in the Baltic Sea Region. Regional Aspects", Transport and Telecommunication, Vol. 13. 2012, pp. 33–50. ISSN 1407-6160. [SCOPUS]

I. Kabashkin, I.Yatskiv, Y.Kryukov and A. Medvedev. The Market Structure Analysis for International Road Freight Transport in Latvia, C.A.S.H. Turku School of Economics, University of Turku, 2012. ISBN 9789522492258

I. Kabashkin, I.Yatskiv, A. Medvedev, G.Beliha and D.Dubanov. Latvian Road Sector and Enforcement of Regulations of International Road Haulage in Historical Perspective, C.A.S.H. Turku School of Economics, University of Turku, 2012. ISBN 9789522492227

Eugene Kopytov

E.Kopytov and A. Muravjovs. "Multiple Criteria Analysis and Choice of Simulation Tools for Inventory Control Modelling Using AHP Method". Proceedings of the 12th International Conference “Reliability and Statistics in Transportation and Communication”. 2012. pp. 211-220. ISBN 9789984818498

E.Kopytov, S.Yunusov, A.Urbah and K.Savkov. "Analytical Data Processing of the Results of Experiments on Producing the Multi-component Nanostructured Protective Coating.". Proceedings, 2nd Stochastic Modeling Techniques and Data Analysis International Conference 5-8 June 2012, Chania Crete Greece. 2012. pp. 411-418.

Sh. Guseynov, **E.Kopytov**. “Complex Mathematical Models for Analysis, Evaluation and Prediction of Aqueous and Atmospheric Environment of Latvia”, Transport and Telecommunication, Vol. 13. 2012, pp. 57-74. ISSN 1407-6160, [SCOPUS]

E.Kopytov and D. Abramov. "Multi-Criteria Analysis and Choice of Transportation Alternatives in Multimodal Freight Transport System". Transport and Telecommunication, Vol. 13. 2012, pp. 148-148. ISSN 1407-6160, [SCOPUS]

E.Kopytov and D. Abramov. "Comparative study of multiple criteria methods for choosing cargo transportation mode". Proceedings of the 14th International Conference on Harbor Maritime Multimodal Logistics Modeling and Simulation (HMS 2012). A. Bruzzone, Y. Merkurjev and Others eds. 2012. pp. 146-152. ISBN 9788897999034 [Thomson ISI, SCOPUS]

E.Kopytov and A. Muravjovs. "Comparative Analysis of ExtendSim and AnyLogic efficiency for inventory control systems simulation". 26th European Conference on Modeling and Simulation (ECMS 2012). K. G. Troitzsch ed. 2012. pp. 595-601. ISBN 9780956494443 [SCOPUS]

E. Kopytov, N. Petuhova and V. Demidov. "Improving of Railway Information Analytical Systems Using Newest Databases Technologies". Proceedings, 2nd Stochastic Modeling Techniques and Data Analysis International Conference. 2012. pp. 401-409.

Rostislav Kopytov

R.Kopytov. "Formalization of a reliable enterprise design", Computer Modelling and New Technologies, Vol. 16. 2012, pp. 15-29.

R.Kopytov. "A reliable organization's design axioms", Issues of Business and Law, Vol. 4. 2012, pp. 94-105. ISSN 2029-9214 [EBSCO]

R.Kopytov, L. Fainglozs and K. Cernavskis. "Using principle of complementarity when diagnosing complex logistic activities by applying alternative approach", Transport and Telecommunication, Vol. 4. 2012, pp. 310–321. [SCOPUS]

R.Kopytov and L. Fainglozs. "Logistics process management: neutralization of after-effects on the basis of compensatory mechanisms". The 7th International Scientific Conference //Business and Management 2012 (Vilnius) 2029-4441 print / ISSN 2029-929X online; ISBN 978-609-457-116-9 CD, pp. 982-988.

Valery Kutev

A.Krainyukov and **V.Kutev**. "Improving the Effectiveness of Radar Monitoring for Roadway Coverage". Abstracts of the 12th International Conference Reliability and statistics in transportation and communication (RelStat'12). I. V. Kabashkin and I. V. Yatskiv eds. 2012. pp. 89-90. ISBN 9789984818504

E.Kopytov, A. Urbach, **V. Kutev**, V. Labendik and S. Yunusov. "Support System for Technology of Applying the Multi-component Nano-structured Protective Coatings", Transport and Telecommunication, Vol. 13. 2012, pp. 229-242. ISSN 1407-6160, [SCOPUS]

Vladimir Labendik

E. Kopytov, V. Labendik, V. Muhin and A. Urbach. "Analysis of the Heat Processes of Forming the Aluminide Coating of the Gas Turbine Blades". Proceedings of 12-th International Conference Reliability and statistics in transportation and communication (RelStat'12). 2012. pp. 70-77. ISBN 9789984818498

Boris Mishnev

B.Mishnev, N.Fila, A.Dunjashkins and J.Abasheva. "Simulation model of distance learning planning and implementation on the basis of ECTS credits". Proceedings of the 35th International Conference, MIPRO 2012. 2012. pp. 1215 - 1219. ISBN 9781467325776 [IEEE Xplore]

N.Fila and **B.Mishnev**. A.Dunjashkins. "Distant learning programs' implementation: evaluation of its effectivity on the basis of the ECTS credits". Inter-Higher School Scientific and Educational Conference "Actual Problems of Education MIP 2012". 2012. pp. 7.

Sergey Orlov

S. Orlov and B. Tsilker. "Software development Technologies". The textbook for higher education institutions. 4-th edition, 608 pages., Spb.: Piter, 2012. ISBN 9785459011012 (In Russian)

S. Orlov. "Programming languages development principles". The textbook for higher education institution. 362 pages, Riga: TSI, 2012. ISBN 9789984818481 (In Russian)

Yuri Sikerzhitsky

P. Shakun, **Y. Sikerzhitsky** and M. Petrunina. "Signal processing of the fiber optical sensors", Computer Modelling and New Technologies, Vol. 16. 2012. (in print)

Alexander Stetjuha

A.Stetjuha. "Pros and cons of globalisation in the post-soviet development of the Baltic countries". Management and Sustainable Development. University of Forestry. A. prof. I. Paligorova ed. 2012. pp. 4-8.

Yulia Stukalina

Y.Stukalina and V.Kazanovska. "Developing an online language course: Some issues to consider". Actual Problems of Education. International Inter-higher School Scientific and Educational Conference. Papers. 2012. pp. 38-41. ISBN 9789984818559

Y.Stukalina. "Addressing service quality issues in higher education: the educational environment evaluation from the students' perspective", Technological and Economic Development of Economy, Vol. 18, March, 2012, pp. 84-98. ISSN 2029-4913 [ISI Web of Science]

Juri Tolujew

A.Brandau and **J.Tolujew**. "Logistics event management – an overview of concepts to interpret logistical real time data". Proceedings of the 12 th International Conference "Reliability and Statistics in Transportation and Communication" (RelStat'12). 2012. pp. 171-178. ISBN 9789984818498

B.Zvirgzina and **J.Tolujew**. "Simulation-based metaheuristic optimization of logistics systems". Proceedings of the 12 th International Conference "Reliability and Statistics in Transportation and Communication" (RelStat'12). 2012. pp. 221-226. ISBN 9789984818498

Boris Tsilker

V.Krebss and **B.Tsilker**. "VANET Nodes Localization with Limited Reference Points Availability". Proceedings of the International Conference "Reliability and statistics in transportation and communication" (RelStat'12). 2012. pp. 285-295.

Irina Yatskiv (Jackiva)

E.Yurshevich and **I.Yatskiv**. "Consideration of the Aspects of the Transportation Systems Microscopic Model Application as Part of a Decision Support System", Transport and Telecommunication, Vol. 13, June, 2012, pp. 209-218., ISSN 1407-6160, [SCOPUS]

I.Yatskiv, I.Pticina and M.Savrasov. "Urban Public Transport System's Reliability Estimation Using Microscopic Simulation", Transport and Telecommunication, Vol. 13, June, 2012, pp. 219-228 ISSN 1407-6160, [SCOPUS]

I.Yatskiv and V.Gromule. "Quality Management of the Passenger Terminal Services on the Base of Information System. Chapter 3." In book: "Modern Information Systems". C. Kalloniatis ed. InTech. 2012. pp. 41-64. ISBN 9789535106470

2.4. Copies of the Institution's/Unit's best publications

(Append copies of publications, maximum number of publications = number of professors/researchers in the Institution/Unit, but a minimum of five publications)

*The copies of relevant publications should be scanned and added as separate files (in *.pdf or *.jpg formats) together with the self-assessment report file submitted to the Ministry of Education and Science. For ensuring easy readability do not make the font size smaller when copying publications. The copies of publications shall be two-sided. For monograph and book copy the title page and content.*

Original articles:

I. Kabashkin. "Freight Transport Logistics in the Baltic Sea Region. Regional Aspects", Transport and Telecommunication, Vol. 13. 2012, pp. 33–50. ISSN 1407-6160. [SCOPUS]

E.Kopytov and D. Abramov. "Comparative study of multiple criteria methods for choosing cargo transportation mode". Proceedings of the 14th International Conference on Harbor Maritime Multimodal Logistics Modeling and Simulation (HMS 2012). A. Bruzzone, Y. Merkuriev and Others eds. 2012. pp. 146-152. ISBN 9788897999034 [Thomson ISI, SCOPUS]

E.Kopytov and A. Muravjovs. "Comparative Analysis of Simulation Packages for Inventory Control System Modeling". 26th European Conference on Modeling and Simulation (ECMS 2012). K. G. Troitzsch ed. 2012. pp. 595-601. ISBN 9780956494443 [SCOPUS]

E. Kopytov, N. Petuhova and V. Demidov. "Improving of Railway Information Analytical Systems Using Newest Databases Technologies". Proceedings, 2nd Stochastic Modeling Techniques and Data Analysis International Conference. 2012. pp. 401-409.

R.Kopytov. "A reliable organization's design axioms", Issues of Business and Law, Vol. 4. 2012, pp. 94-105. ISSN 2029-9214 [EBSCO]

E.Kopytov, A. Urbach, **V. Kutev**, V. Labendik and S. Yunusov. "Support System for Technology of Applying the Multi-component Nano-structured Protective Coatings", Transport and Telecommunication, Vol. 13. 2012, pp. 229-242. ISSN 1407-6160, [SCOPUS]

E. Kopytov, **V. Labendik**, V. Muhin and A. Urbach. "Analysis of the Heat Processes of Forming the Aluminide Coating of the Gas Turbine Blades". Proceedings of 12-th International Conference Reliability and statistics in transportation and communication (RelStat'12). 2012. pp. 70-77. ISBN 9789984818498

Y.Stukalina. "Addressing service quality issues in higher education: the educational environment evaluation from the students' perspective", Technological and Economic Development of Economy, Vol. 18, March, 2012, pp. 84-98. ISSN 2029-4913 [ISI Web of Science]

B.Mishnev, N.Fila, A.Dunjashkins and J.Abasheva. "Simulation model of distance learning planning and implementation on the basis of ECTS credits". Proceedings of the 35th International Conference, MIPRO 2012. 2012. pp. 1215 - 1219. ISBN 9781467325776 [IEEE Xplore]

A.Brandau and **J.Tolujew**. "Logistics event management – an overview of concepts to interpret logistical real time data". Proceedings of the 12 th International Conference “Reliability and Statistics in Transportation and Communication” (RelStat'12). 2012. pp. 171-178. ISBN 9789984818498

E.Yurshevich and **I.Yatskiv**. "Consideration of the Aspects of the Transportation Systems Microscopic Model Application as Part of a Decision Support System", Transport and Telecommunication, Vol. 13, June, 2012, pp. 209-218., ISSN 1407-6160, [SCOPUS]

I.Yatskiv and V.Gromule. "Quality Management of the Passenger Terminal Services on the Base of Information System. Chapter 3." In book: "Modern Information Systems". C. Kalloniatis ed. InTech. 2012. pp. 41-64. ISBN 9789535106470

Monographs and books

1. Kabashkin, I. Yatskiv, Y. Kryukov and A. Medvedev. *The Market Structure Analysis for International Road Freight Transport in Latvia*, C.A.S.H. Turku School of Economics, University of Turku, 2012. ISBN 9789522492258;
2. I.Kabashkin, I. Yatskiv, A. Medvedev, G. Beliha and D. Dubanov. *Latvian Road Sector and Enforcement of Regulations of International Road Haulage in Historical Perspective*, C.A.S.H. Turku School of Economics, University of Turku, 2012. ISBN 9789522492227;
3. S. Orlov and B. Tsilker. “Software development Technologies”. The textbook for higher education institutions. 4-th edition, 608 pages., Spb.: Piter, 2012. ISBN 9785459011012 (In Russian)
4. S. Orlov. “Programming languages development principles”. The textbook for higher education institution. 362 pages, Riga: TSI, 2012. ISBN 9789984818481 (In Russian)

3. DOCTORAL TRAINING

3.1. Number of students in 2012

Give the number of completed Master degrees and their ratio among those enrolled in the doctoral training.

	2012
Completed their Master degree ¹⁾	61
Enrolled in doctoral studies ²⁾	2

¹⁾ Master students are enrolled at the host universities and complete their degree there. Institution's/Unit's personnel is also involved in supervising Master's theses. Research institutes indicate Master students, if at least half of the Master thesis has been performed at research institute during 2012 under the guidance of the research staff of the institute.

²⁾ Doctoral students enrolled at the university/ or a number of PhD students who have been working at Institution/Unit during 2012 under the guidance of the researcher of the Institution/Unit, their FTE performing research work being almost 50 percent of the total.

3.2. List of doctoral dissertations in 2012 and present employment

If at least half of the doctoral dissertation has been supervised and/or done at a research institute, the research institute can also list the doctoral dissertation as its own outcome. In this case indicate also the university (in year of completion) where the doctoral dissertation has been presented for approval. In present employment, indicate the type of organisation (university, business company, research institute, state, municipality or other).

Name (given name and family name)	Topic of dissertation	Year of completing the degree	Present employment (job description, organisation)

4. NATIONAL AND INTERNATIONAL COLLABORATION

4.1. National collaboration

List the national collaboration partners of the Unit. Collaborator refers to a person or a research team with whom the cooperation has either generated or is expected to generate within the next three years one of the outcomes indicated in item 2.2. Types of collaboration include e.g. joint projects, researcher mobility. In "Field of science", give the main field of the collaborator (physics, chemistry, mechanical engineering etc.)

Organisation	Type of collaboration	Field of science
Universities		
Riga Technical University	Common projects – LZP, Common conferences	Engineering
University of Latvia	Common projects – LZP	Engineering
Other higher educational establishments, graduate schools, colleges		
Latvian Transport Development and Education Association	INTERREG projects	Transport
Public research institutes		
Enterprises		
„IMINK”, Ltd.	Common projects	Transport
„Kemek”, Ltd.	Common project (ERAF)	Transport, Electronics
National conferences, workshops and seminars organised by the institution/unit		
Research and Academic Conference <i>Research and Technology – Step into the Future</i> , Riga, April, 2012		
Research and Academic Conference <i>Research and Technology – Step into the Future</i> , Riga, December, 2012		

4.2. Visits abroad (minimum duration of visit: one month) in 2012

List the visits per year. List the visits of each year by country in the alphabetical order. In item "Purpose of the visit" indicate clearly the objective of the visit.

Name	Target organisation	Country	Purpose of the visit	Duration in months
I. Kabashkin	Immanuel Kant Baltic Federal University (IKBFU)	Russian Federation	Guest lectures	1 month
K.Alfimova	UPM	Madrid, Spain	Research visit	1 month

4.3. Visits to the Unit (minimum duration of visit: one month) in 2012

List the visits per year. List the visits of each year by country in the alphabetical order. In item "Purpose of the visit" indicate clearly the objective of the visit.

Name of visitor	Home organisation	Country	Purpose of the visit	Duration in months

4.4. Most important foreign collaborators

List the most important foreign collaborators, as defined in item 4.1.

Name and Organisation	Type of collaboration	Country
Universities		
Universitat Autònoma de Barcelona	Common project	Spain
Universita degli Studi di Trieste	Common project	Italy
London Imperial Colledge	Common project	UK
Immanuel Kant Baltic Federal University (IKBFU)	Academic and scientific cooperation	Russian Fedearation
Research Institutes		
FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Common Project	Germany
Enterprises		
LAGRANGE SARL	Common project	France
KEMA Nederland BV	Common project	Netherlands
Asociación Española de Fabricantes de Equipos y componentes de Automoción	Common project	Spain
INTELSPACE Texnologies Kainotomias AE	Common project	Greece
International conferences, workshops and seminars organised by the institution/unit		
The international Conference " <i>Reliability and Statistics in Transportation and Communication</i> ", (RelStat-12), TTI, Riga, Latvia, 2012.		
The international Conference " <i>1st Baltic HPC (High Performance Computing) & Cloud Computing Conference</i> ", in cooperation with Riga Technical University, Riga, Latvia, 2012.		
International Conference «Regional Development of Air Cargo Transportation" Riga, Latvia. 6-7 Novembry 2012		
COST Action TU1004 " Modelling Public Transport Passenger Flows in the Era of Intelligent Transport Systems " Workshop, TTI, Riga, Latvia, June 2012.		
COST Action TU1004 " Modelling Public Transport Passenger Flows in the Era of Intelligent Transport Systems " Workshop, TTI, Riga, Latvia, October 2012.		

COST Action TU0903 “ Methods And Tools For Supporting The Use, Calibration And Validation Of Traffic Simulation Models ” Workshop, TTI, Riga, Latvia, October 2012.
International Inter-higher School Scientific and Educational Conference. <i>Actual Problems of Education</i> . February, 2012. TTI, Riga, Latvia.
InterReg IVC “ Police Learning in Information Technologies for Public Transport Enhancement ” Workshop, TTI in cooperation with LaTDEA, Riga, Latvia, October 2012.

4.5. Describe the most important outcomes of the visits and collaboration contacts

Describe here e.g. key joint publications, researcher training, adoption and use of new technologies or new approaches.

Fraunhofer Institute for Factory Operation and Automation (IFF) and TSI signed agreement to set out a framework for future collaboration in the field of Virtual Reality (VR) and Virtual Interactive Training (VE) in Aviation Industry. Specific areas for cooperation will be developed by the respective Boards of the two organisations, but may include:

- a) establishment of a VR/VE centre of excellence in Riga;
- b) collaboration on VR/VE related research and development projects;
- c) development of VR/VE based applications for training & qualification, education and industry services;

The common Virtual Reality Centre was established within the frame of activities of development Aviation Research Centre in Latvia.

One the most important issues of collaboration contacts in 2012 was the increasing amount of visit lectures of famous professors and scientists – Prof. Jaume Barselo (SPAIN), Prof.Roberto Bertini (USA) etc.

4.6. Non-academic collaboration

List here the non-academic collaboration, e.g. industry contacts.

Name and Organisation	Type of collaboration	Country
Association of Paneuropa Coach Terminals	Participation in External Expert Board	Germany
Other organisations		

5. OTHER SCIENTIFIC AND SOCIETAL ACTIVITIES

5.1. Invited presentations in scientific conferences

Invited plenary and other presentations.

Name	Topic of presentation	Name and time of the conference
Alexander Andronov	Markov-modulated samples and their application in reliability tasks	International Conference "PROBABILITY THEORY and its APPLICATIONS", (Moscow, June 26-30, 2012)
Irina Yatskiv (Jackiva)	Connecting Authorities for Safer Heavy Goods Traffic in the Baltic Sea Region	XIV International Conference "TransBaltica 2012" Riga, Latvia, 7 June
Igor Kabashkin.	International Global Monitoring Aerospace System (IGMASS) as Space Segment of National Intelligent Transport System.	4th International Scientific Conference „Spatial Strategy for Sustainable Development: United by Borders" March 6-7, 2012, Riga, Latvia
Igor Kabashkin.	EU Projects and Development of Transport Logistics in Baltic as Part of Euro-Asian Supply Chain.	Proceedings of the International Conference "TRANSRUSSIA-2012", 24-25 April 2012, Moscow, Russia
Igor Kabashkin.	Baltic Transport: Trends of Development.	XIV International Conference "TransBaltica 2012" Riga, Latvia, 7 June
Igor Kabashkin.	Possibilities for the Extension of the International Cooperation in the Baltic Sea Region.	V Annual International Conference "TRILOGY" (Transport. Investments. Logistics). September, 6-7, 2012, Pskov, Russia.

5.2. Memberships in editorial boards of scientific journals

Give only the most important membership. Present names for the most important journals in the field.

Name	Journal	Period
Alexander Andronovs	Automatic control and computer science, Alerton Press, New York	2000 to present
Igor Kabashkin	Journal "Computer Modelling and New Technologies" (ISSN 1407-5806), Latvia, Editor	1996 to present
Igor Kabashkin	Journal "Transport and Telecommunication" (ISSN 1407-6160), Latvia, Editor	2000 to present
Igor Kabashkin	Journal "Journal of Air Transportation" (ISSN 1093-8826), USA, Co-Editor	1999 to present
Igor Kabashkin	Journal "Transport" (ISSN 1392-1533), Lithuania,	1999 to present

	Member of the board	
Igor Kabashkin	Journal “Aviation” (ISSN 1392-1534), Lithuania, Member of the board	2002 to present
Igor Kabashkin	Journal “Transactions on Transport Sciences” (ISSN 1802-971X), Czech Republic, Member of the board	2007 to present
Igor Kabashkin	Journal “Technological and Economic Development of Economy” (ISSN 1392-8619), Lithuania, Member of the board	2002 to present
Eugene Kopytov	Journal "Computer Modelling and New Technologies" (ISSN 1407-5806), Latvia,	2002 to present
Irina Yatskiv (Jackiva)	“Mathematics in Engineering, Science and Aerospace”, member of Editorial Board, ISSN: 2041-3165 (print) 2041-3173 (online);	from 2011
Irina Yatskiv (Jackiva)	Final conference of the European COST action TU0801 “Usage, Usability, Utility of 3D City models	October 29 – October 31, 2012
Irina Yatskiv (Jackiva)	Journal "Transport and Telecommunication" (ISSN 1407-6160), Latvia, Member of the board	2006 to present
Irina Yatskiv (Jackiva)	Research and Technology - Step into the Future Scientific & Research Journal of TTI, (ISSN 1691-2853, ISSN 1691-2861)	2004 to present
Irina Yatskiv (Jackiva)	Member of the Editorial Board, International Journal “Maintenance and reliability”, Polish Maintenance Society (Warsaw)	2005 to present

5.3. Prizes awarded to researchers, honours and scientific positions of trust

Give only the most important prizes and awards to the personnel.

Name	Prize, position etc.

5.4. Memberships in committees and in scientific advisory boards of business companies or other similar tasks of no primarily academic nature

Name	Tasks	Period
Irina Yatskiv	Expert in “ <i>Telematika un loģistika</i> ” council	2009 to present
Irina Yatskiv	eCoach Project, Association of Paneuropa Coach Terminals, external expert	2010 to present
Irina Yatskiv	Member of the Management Committee of European COST Action TU0801 “Semantic enrichment of 3D city models for sustainable urban development”	2008 to 2012
Irina Yatskiv	Member of the Management Committee of European COST Action TU0804 “Survey Harmonization with New Technologies Improvement”	2008 to present

Irina Yatskiv	Member of the Management Committee of European COST Action TU0903 “Methods and Tools for Supporting the Use, Calibration and Validation of Traffic Simulation Models”	2009 to present
Irina Yatskiv	Director of the Latvian Operation Research Society	2006 to present
Irina Yatskiv	Member of the Latvian Simulation Society	2002 to present
Irina Yatskiv	Member of the Programme and Organisation Committee of The international Conference “Reliability and Statistics in Transport and Communication”, (RelStat), Riga, Latvia	2005 to present
Igor Kabashkin	COST (European Co-operation in the Field of Scientific and Technical Research) Technical Committee on Transport and Urban Development, Member.	1999 to present
Igor Kabashkin	Joint OECD/ECMT Transport Research Committee (OECD – Organisation for Economic Co-operation and Development, ECMT – European Conference of Ministers of Transport), Member.	2000 to present
Igor Kabashkin	International Committee on the International Global Aerospace Monitoring System (IGMASS) Project Implementation, Member	2010 to present
Igor Kabashkin	Chairman in “Telematics and logistics” council	1998 to present
Igor Kabashkin	Expert in “Air transport exploitation” council	1999 to present
Igor Kabashkin	„Latvijas Auto mācību konsultatīvās sabiedrības” consultant	2002 to present
Igor Kabashkin	„Zinātniska mācību konsultatīvā transporta un loģistikas centra” consultant	2003 to present
Igor Kabashkin	„Rīgas pilsētas Komercedarbības attīstības padome”, expert	2007-2009
Igor Kabashkin	„Rīgas transporta sabiedriskās padome”, expert	2004 to present
Igor Kabashkin	„Transporta un loģistikas nozares ekspertu padome”, expert	2011 to present
Eugene Kopytov	EUROPEAN OECD/ECMT Joint Transport Research Committee, member	2005 to present
Eugene Kopytov	European Quality Assurance Network for Informatics Education (EQANIE), expert	2011 to present
Eugene Kopytov	„Augstākās izglītības kvalitātes novērtēšanas komisija”, expert	2008 to present
Eugene Kopytov	„LR IZM augstākās izglītības akreditācijas komisija”, member	2007-2011
Eugene Kopytov	Expert in “Telematics and logistics” council	2003 to present
Alexander Andronovs	Riga Technical University „RTU P-17” council member	2006-2014
Alexander Grakovski	Expert in “Telematics and logistics” council	2008 to present
Alexander Grakovski	Satiksmes ministrijas elektronisko sakaru nozares padomes eksperts	2010 to present

Vladimir Labendik	Dangerous goods (ADR) transport security consultant	2006 to present
----------------------	--	-----------------

6. THE INSTITUTION'S/UNIT'S SELF-ASSESSMENT

6.1 SWOT – evaluation of the Unit's scientific strengths, weaknesses, opportunities and threats

(max 2 pages)

Analyse the Institution's/Unit's scientific expertise and achievements, funding, facilities, organisation and management. What are the major internal Strengths and Weaknesses as well as external Threats and Opportunities in the Institution's/Unit's activities and research environment? Assess what the present Strengths enable in the future and what kinds of Threats are related to the Weaknesses.

Strengths •	Weaknesses •
Opportunities •	Threats •

6.2. Evaluate the Unit in relation to its leading scientific competitors

(max 1 page)

How does the Institution/Unit perceive itself in the international context? What is the “niche” of the Institution/Unit in the global research environment? What characteristic features distinguish the Institution/Unit from its international competitors? What are the most relevant competitors (university departments or other research institutions) of the Institution/Unit in the international context? What are the main channels through which the Institution/Unit interacts with the international scientific community? Are the professors and leading researchers at the Institution/Unit active in international learned societies etc.? What are the most relevant research projects the Institution/Unit has been engaged in during the assessment period jointly with other institutions in Latvia or abroad? Has the Institution/Unit been the main organizer of major international conferences?

6.3. The Institution's/Unit's research strategy (relation to the state'/parent organisation's strategy, research priority areas, development measures, performance indicators)

(max 2 pages)

6.5. Assess the role of the Institution/Unit in doctoral training as well as academic and societal need for doctoral training within the Institution's/Unit's research fields

6.6. Assess the Institution's/Unit's research infrastructure

7. FUNDING

7.1. The Institution's/Unit's funding for scientific activities

(Expressed in thousand LVL)

Core (maintenance) funding applies to the Institution's/Unit's budget received annually under the Regulations No1316 adopted by the Cabinet of Ministers on 10th November 2009. The funding covers both the salary costs with taxes and operational costs. Use of research funding received from external sources, indicated per year.

Sources of funding	2012	Total 2006-2012
State budget funding		
Core (maintenance) funding	0	0
Grants of the Latvian Council of Science	23.289	172.689
State research programmes *	0	-57.6
Other state budget funding	0	0
Other sources of finances		
Contract research	1.8	118.0
ESF, ERDF funding	588.354	1219.154
Framework programme projects	9.9	35.1
Other international projects	3.9	54.3
Private funding	0	57.6
Other	0	49.3
Total	627.43	1648.543

* In State Research Program TTI take part as a private institution as executor of the project "Latvijas transporta sistēmas harmonizācijas ilgtermiņa programmas izstrāde" (Development of the long-term programme of the Latvia transport system harmonization) without state financing, but with self financing.

7.1.1. Characterise the international competitiveness of the Institution/Unit in attracting the funding (number of projects granted, types of the projects (EU Framework Programmes, European Cooperation in Science and Technology (COST), North Atlantic Treaty Organisation (NATO), other international projects) in 2012) (name of project, project execution time, allotted funds for project)

(Projects started in 2012)

EU Framework Program projects: (Networks of Excellence, Specific targeted research Project, Collaborative Project):

1. Enhancing the transfer of Intelligent Transportation System innovations to the market (T-TRANS), FP7, 2012-2014, 128897.00 EUR

Other EU Framework Program projects:

1. InterReg IVC "Police Learning in Information Technologies for Public Transport Enhancement" (Polite), (with TTI participation), 2012. – 2009.51LVL

2. COST TU1004: Modelling public transport passenger flows in the era of intelligent transport systems, 2012, – 3461.51 EUR.
3. COST TU0903: Methods and tools for supporting the use, calibration and validation of traffic simulation models, 2012, – 435.7 EUR.
4. COST TU0902: Integrated assessment technologies to support the sustainable development of urban areas, 2012, – 633.6 EUR.
5. COST TU0804: Survey Harmonisation with New Technologies Improvement (SHANTI), 2012, – 1045.73 EUR.
6. COST TU0801: Semantic enrichment of 3D city models for sustainable urban development, 2012 – 731.36 EUR.

Other international projects:

7.1.2 Characterise the potential contribution of the Institution/Unit in economic development – the orientation to commercialization of the research and implementation of the results of research (collaboration with **industry partners/entrepreneurs**, contract research, Market-oriented research projects, and International support program for market-oriented R&D and innovation projects by industry to develop innovative and competitive products (*EUREKA*) in 2012):

Market-oriented research projects

***EUREKA* projects**

Contract research

1. Highway P133 and Ziemeļu street intersection simulation and capacity estimation, 09.2012 – 12.2012, 1 863 LVL

Other

7.2. Evaluate the role of different funding sources (State and different funding organisations) in promoting the scientific and societal impact of research