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Newsletter

December 2017 Issue 2

Editorial

Dear reader,

Welcome to the 2nd issue of the ALLIANCE Newsletter! ALLIANCE is an EU-funded project, focusing on the development of advanced research and higher education institution in the field of transport in Latvia.

In this issue, you will be informed about the pan-European survey on transport interchange design and operation, organized and implemented by the Traffic, Transportation and Logistics Laboratory of University of Thessaly, Greece and the Transport and Telecommunication Institute, Latvia, and you will read the preliminary results, based on feedback from Latvian stakeholders.

In addition, you will be updated on the events and activities, completed in the 2nd year of the project, including the successful realization of the 1st ALLIANCE Summer School, which took place in Riga, Latvia in July 16-22, 2017. Details about the project's future events and activities are also included in this issue.

Finally, we are happy to host an article on the challenges and barriers on integrated intermodal transport systems, and three interviews of selected stakeholders.

Happy reading!

http://alliance-project.eu/

Prof. Irina Yatskiv (Jackiva)
Project Coordinator

Prof. Eftihia Nathanail
Dissemination Manager

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 692426

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Enhancing excellence and innovation capacity in sustainable transport interchanges

A preliminary survey on transport interchange design and operation

The aim of the preliminary survey was to investigate relevance of existing knowledge, importance and requirements for skills and competence on interchanges' design and operation, as perceived by Latvian stakeholders. Data were collected through a questionnaire survey, structured in three parts:

- Part I of the survey aimed to assess the relevance of 12 topics that have been identified as educational requirements for sustainable transport interchanges *(1)*. The research questions formulated, are:
  - Q1: How important is to have knowledge on the 12 topics?
  - Q2: How familiar are you with methods/techniques relative to the 12 topics?
  - Q3: During your university studies, at what level have you developed skills on the 12 topics?
  - Q4: How important would it be for your career development to gain skills on the 12 topics?
- Part II aimed to assess 15 emerging topics in the domain of intermodal transportation *(2)*, *(3)*. The relevant research questions addressed in this case, are:
  - Q5: At what level each of the 15 emerging topics has been introduced in your profession (or studies, when respondents were students)?
  - Q6: How important would it be for your career development to gain skills on the 15 emerging topics?
- In Part III, background information was collected about the respondents, including aspects such as: stakeholder category, gender and age, level of completed studies, etc.

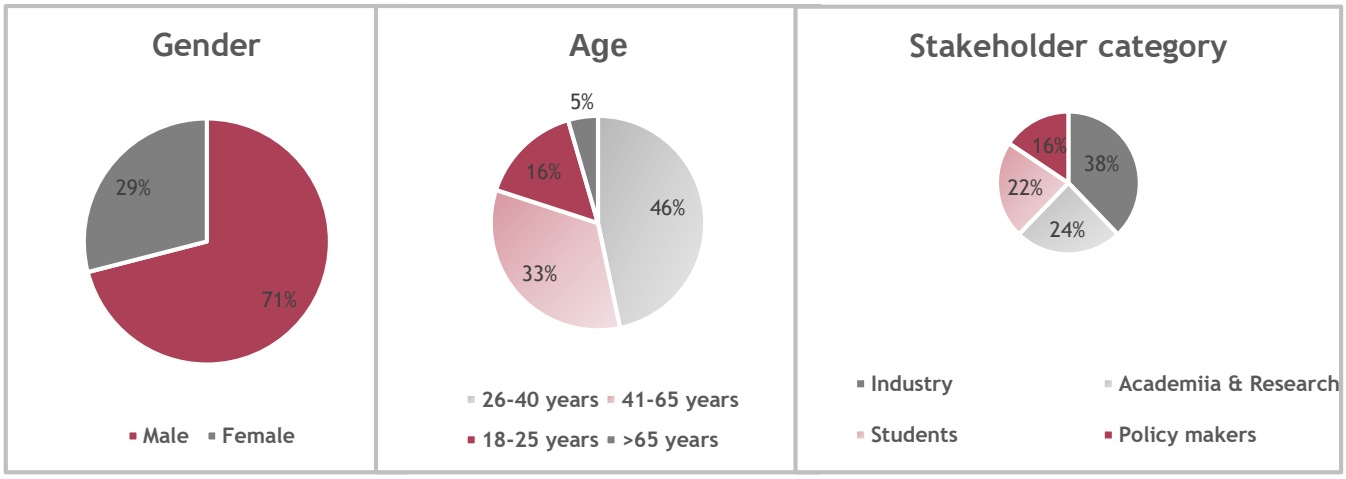

Fig. 1: Stakeholders' characteristics

A preliminary survey on transport interchange design and operation

Table 1: Questionnaire topics

No.	Educational requirements	No.	Emerging topics
1	The European policy on intermodal transportation	1	Utilization of big data for policy-making
2	Building business models for intermodal transport interchanges	2	Innovative organizational and governance concepts for mobility solutions at neighbourhood and district level
3	Sustainable development and transportation planning	3	Public procurement of innovative sustainable transport and mobility solutions in urban areas
4	Operation and management of intermodal transport systems	4	Optimization methods improving resilience of interchanges (i.e. under unexpected events)
5	Optimization of intermodal transport systems	5	Incorporation of Vehicle-to-Infrastructure (V2I) and Infrastructure-to-Vehicle (I2V) systems and information-sharing in efficient operation and management of interchanges
6	Intelligent services for passenger transportation	6	Benefits of connected-automated vehicles in the operation and management of interchanges
7	Information systems of intermodal freight transportation	7	Shared-use services and solutions promoting interchange sustainability
8	Design of passenger transport interchanges	8	Unmanned aerial systems in logistics
9	Design of freight transport interchanges	9	Innovative design methods and green buildings at interchanges
10	Smart technologies for efficient transport logistics	10	Incorporation of alternative fuel vehicles in smart transshipment
11	Decision making methodologies	11	Promoting accessibility, inclusive mobility and equity in interchange design
12	Data collection methods	12	Physical and cybersecurity at transport interchanges
		13	Information Communication Technologies and cooperative Intelligent Transportation Systems for smart, safe, accurate and reliable interchange operations
		14	3D printing in supply chain
		15	Collection, storage, processing and visualization of big data to support decision making in transportation

A preliminary survey on transport interchange design and operation

The 45 participants were grouped according to several parameters, i.e. stakeholder categories, age, gender, etc. and a number of statistical tests were conducted. For example, bivariate analysis was carried out among the six variables, as formulated by the relevant research questions (Q1 to Q6), and, indicatively, the correlation between the importance of knowledge on the 12 educational requirements and its importance for the respondents' career development, is presented in Fig. 2.

It's clear that respondents consider that high knowledge on the 12 educational requirements can enhance their career development.

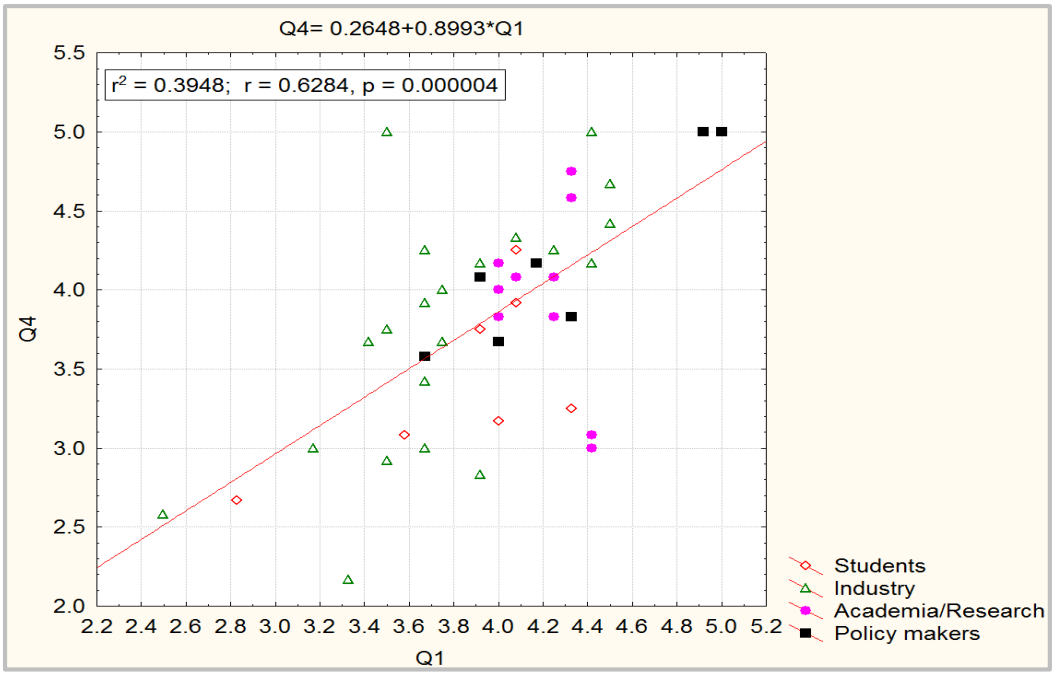

Fig. 2: Importance of knowledge on the 12 educational requirements (Q1) and its importance for the respondents' career development (Q4)

References

1. *Mitropoulos, L., Adamos, G., Nathanail, E., Yatskiv, I. & Kabashkin, 2017. Building on European scientific excellence to develop an educational program on intermodal connections for Latvia and the region, Transport Journal, 2017, Vol. 32, Iss. 1.*
2. *HORIZON 2020. The EU Framework Programme for Research and Innovation. https://ec.europa.eu/programmes/horizon2020/.*
3. *Transportation Research Board, 2016. Transportation Research Circular, Number E-C208, Transformational Technologies in Transportation. State of the Activities. http://onlinepubs.trb.org/onlinepubs/circulars/ec208.pdf.*

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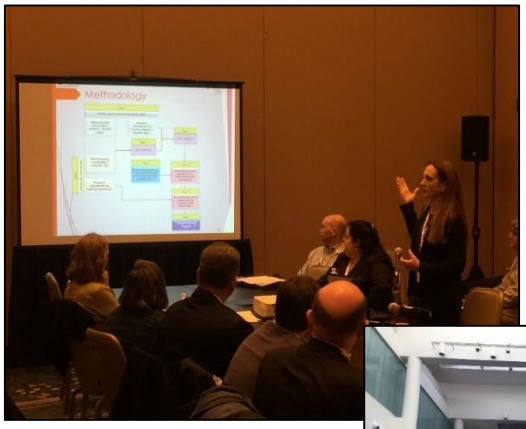
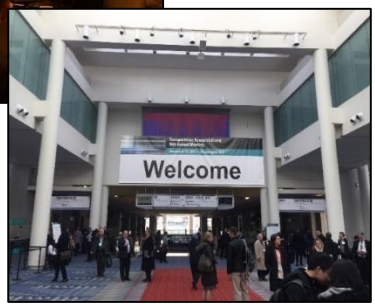
ALLIANCE events

ALLIANCE in Transportation Research Board (TRB) 96th Annual Meeting





8-12 January 2017 Washington D.C., USA

ALLIANCE dissemination managers, Prof. Eftihia Nathanail and Dr. Giannis Adamos participated in the Transportation Research Board (TRB) 96th Annual Meeting, which was held in Washington D.C. on 8-12 January 2017. Prof. Eftihia Nathanail presented the paper "Developing an educational program for transportation across regions: The case of intermodal connections for Latvia and the region", prepared by UTH and TTI partners, based on the research and work that has been conducted in ALLIANCE.

10th International Doctoral Student Workshop on Logistics

20-22 June 2017 Magdeburg, Germany

ALLIANCE supported the 10th International Doctoral Student Workshop on Logistics, which was hosted by the Otto von Guericke University's Institute of Logistics and Material Handling Systems in cooperation with the Fraunhofer Institute for Factory Operation and Automation IFF, on 20 June 2017 in Magdeburg, Germany. The project was represented in this event by 8 young researchers, who are members of the project's collaborative research teams.

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ALLIANCE events

1st ALLIANCE Summer School

16-22 July 2017 Riga, Latvia

The 1st Summer School entitled: "Sustainable Transport Interchanges Program (STIP) – Part I: Freight Transportation" was organized by the Transport and Telecommunication Institute (TTI), Traffic, Transportation and Logistics Laboratory of the University of Thessaly (TTLog) and Fraunhofer Institute for Factory Operation and Automation (IFF) and in total 25 young researchers from Latvia, Lithuania, Greece and Germany participated. Young researchers had the opportunity to attend a number of selected courses and two special lectures focusing on freight transportation, and to visit Riga's commercial port.

28 September 2017 Torres Vedras, Portugal

CIVITAS Deployment Day

ALLIANCE project participated in the Civitas Deployment Day within the CIVITAS ANNUAL CONFERENCE 2017. The project's representatives promoted to a wide audience the scope, concept, thematic areas, ALLIANCE e-platform, as well as, a synopsis of the 1st ALLIANCE Summer School.

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ALLIANCE events

ALLIANCE organized a Trainers' Seminar and a Young Researchers' Seminar in Riga, Latvia on 18-21 October 2017, during the 17th International Conference on Reliability and Statistics in Transportation and Communication (RelStat'17).

Trainers' Seminar

19 October 2017
Riga, Latvia

Scope of the Trainers' Seminar entitled "Experience and impressions after 1st Summer School" was to organize a discussion with all involved parties about the results of the 1st Summer school "Sustainable Transport Interchange Program (STIP) – Part 1: Freight transportation", in order to receive feedback regarding their vision on introducing STIP courses to the TTI new or existing study program.

Young Researchers' Seminar

20 October 2017
Riga, Latvia

During the Young Researchers' Seminar, 11 presentations were given by young researchers and PhD students from Latvia, Greece, Germany, Kazakhstan and Japan who are either members of the ALLIANCE international collaboration teams or interested in topics of transport modeling, logistics and evaluation of transport systems, ICT in transport and economical aspects of transport development.

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ALLIANCE events

1st Widening Conference

8 November 2017
Brussels, Belgium

The European Commission organized on 8 November 2017, the 1st Widening Day in Brussels, Belgium during "The WIDENING CONFERENCE: Towards the Creation of a Widening Community". The scope of this event was to bring together all coordinators of the three widening actions ERA CHAIRS (FP7 and Horizon 2020), TWINNING and TEAMING (phase 2) and to create a WIDENING COMMUNITY, in order to exchange best practices, experiences and create new links for future synergies.

ALLIANCE project was represented by Prof. Irina Yatskiv (Jackiva) (Coordinator) and Assoc. Prof. Eftihia Nathanail (Dissemination Manager).

ALLIANCE participation in Workshop "From data to added value: points of view and solutions"

8 December 2017
Riga, Latvia

On 8 December 2017, Transport and Telecommunication Institute (TTI) organized an open workshop entitled "From data to added value: points of view and solutions". Academic and research staff, TTI students, representatives of the private and public sector (Rīgas Satiksme Ltd., Rīgas Karte Ltd. Riga Municipality, Ministry of Transport, Riga City Council City Development Department) attended the Workshop.

During the Workshop, ALLIANCE members had the opportunity to establish networking activities with representatives of the transport field and to promote the 2nd ALLIANCE Summer School program and other activities.

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Save the date 1-7 July 2018

ALLIANCE organizes the **2nd Summer School**, entitled "Sustainable Transport Interchange Program (STIP) – Part II: Public transport systems from research to decision making" in Riga, Latvia on 1-7 July 2018.

An open call for participation will be soon released!

STIP courses

Code	Course	Code	Course
C0	Research methodology and teamwork setup	C7	Smart information technologies in freight transport logistics
C1	The European policy on intermodal transportation	C8	Design of passenger transport interchanges
C2	Building business models for intermodal transport interchanges	C9	Design of freight transport interchanges
C3	Sustainable development and transportation planning	C10	Smart equipment for freight transshipment
C4	Operation and management of intermodal transport systems	C11	Decision making methodologies
C5	Optimization of intermodal transport systems	C12a	Data collection methods: Travel surveys
C6	Intelligent services for passenger transportation	C12b	Data collection methods: Historical and observed data

Note: Grey marked courses will be lectured in the 2nd Summer School

School schedule

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:00	Introduction	C2 - Fraunhofer	Invited lecture	Invited lecture	Invited lecture
10:00-11:00			C8 - UTH	C5 - UTH	C12a - UTH
11:00-12:00	C1 - UTH	C4 - UTH			C12b - Fraunhofer
12:00-13:00					
14:00-15:00	C11 - UTH	C6 - Fraunhofer	C3 - UTH	Project time	Project time
15:00-16:00					
16:00-17:00	C0 -TTI	Project time	Project time	Technical visit	
17:00-18:00	Project time				

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Future events and activities

4th Conference on Sustainable Urban Mobility – CSUM2018

Skiathos Island, Greece

ALLIANCE Special Session on Sustainable Transport Interchanges

MAY 2018

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE 2018

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

11th International Doctoral Student Workshop on Logistics

Magdeburg, Germany

ALLIANCE support and young researchers' participation

18th International Conference on Reliability and Statistics in Transportation and Communication (RelStat'18)

Riga, Latvia

ALLIANCE Final Conference (17/10/2018)

OCTOBER 2018

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

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Integrated intermodal transport systems: challenges and barriers

by **Mr. Artūrs Kokars**
Advisor of the Board
Riga International Airport
Riga, Latvia

At EU level, the challenges that are faced for creating an integrated intermodal transport system for passenger and freight transport are:

- New technologies developing faster than academic education programmes
- State aid policies for aviation sector is slowing down increase of airport capacity and development of new brake trough solutions
- EU customs code is not responding to new trends in aviation transport.

At the same time, when trying to implement different smart mobility measures in transport terminals, significant barriers may appear, such as:

- Difficulties to justify cost benefit for new systems
- Measure the risks related to implementation of new technologies
- Impossibility to integrate various systems and connectivity measures in between
- Lack of information exchange between partners and stakeholders
- Significant barriers for public funding related to aviation sector.

ALLIANCE project is expected to contribute to smart interconnecting sustainable transport networks in Latvia and the region. Towards this direction, it would be necessary to share results of the research with stakeholders. Common consultations, sharing of experience and guidelines for further developments as well methodology to measure the benefits of implementation of intermodal transportation modes would be great contribution for airport and related organizations.

Interview

with **Mr. Dirk Beckmann**
German Aerospace Center (DLR)
Transport, among others ERRAC, Shift2Rail, EGVI
Brussels, Belgium

What are the knowledge, skills and competence in the domain of urban interchanges?

Urban interchanges form a truly interdisciplinary challenge from a research point of view. It spans across societal aspects, human factors, city planning to technical details. Hence the knowledge, skills and competences needed for urban interchanges are of interdisciplinary nature as well. While conventional mode-centric research is very much focused on the start-to-arrival requirements of the corresponding mode, the key research subject is the connection of modes and hence demanding a sector spanning expertise across modes while still understanding the particularities of the modes.

Understanding of end-user behavior, needs and demands has been a well-researched subject in recent years. The fast uptake of new technology, such as mobile phones and apps, has impacted the domain significantly. Understanding the effects of new technologies, such as automation in transport, on mobility and in particular on urban interchanges will form a challenging field of research to gain knowledge and competence in this changes scenario.

Cities in Europe are undergoing a significant change. In the last century, access to a city with private vehicles was understood as a significant contributor in the prosperity of a city and led to car-optimized cities. In recent years, this trend has reversed and many cities try to reverse this development, e.g. by limiting car access to city centers and penalizing inner city car use. This changes user behavior by forming a growing demand towards public transport in city centers. Changing the cities' key paradigm from private cars towards other modes impacts urban design and challenges the traditional values in this domain. Urban interchanges are key contributors to a modal change and hence understanding urban design, its challenges and benefits is a key requirement.

Digitalization and in particularly automation in transport will have a significant effect on mobility in general. Expertise in the domain of urban interchanges is based on technical innovation in this sector. Hence understanding the technological principles is a key competence. This includes the knowledge about mode specific aspects, as well as, the technological aspects of connecting modes.

The key knowledge is characterized by the broad spectrum of contributing factors to the domain of urban interchanges, while maintaining a deeper understanding of underlying societal aspects, urban design challenges, technologies and concepts.

The key competence for urban interchanges is to tie all these individual aspects into a comprehensive understanding. The key skill is to develop solutions for the pressing challenges of cities by offering tailored urban interchanges that address them in a future-proof way.

What are the emerging areas of expertise required for transportation professionals?

From a research point of view there seem to be three major aspects than need to be considered. The first aspect is the significant and fast paced change transport is undergoing in recent years. The demographic change, the declining appealing to own a car, maturing automation in cars and new mobility concepts are some examples that illustrate the dynamics of a changing sector. This forms a significant challenge in understanding future trends and developments in urban mobility. Urban interchanges form a considerable long-term investment for a city, tie annual resources and form the cities mobility concept that in itself determines urban design aspects. Hence understanding and forecasting mobility on a comprehensive level needs is a key expertise to form future-proof urban interchanges.

The second aspect is the digitalization of transport. The fast developing technological improvements are particularly difficult challenging for long term investments as their forecast is not trivial. Assuming that planning for urban interchanges can omit developments seems too optimistic. The fast developing pace in regard to digitalization can also significantly improve the urban interchange concept e.g. through more accurate travel information, increased user acceptance and better service offerings. The management of digitalization both in understanding the impacts on urban interchanges as well as adopting the benefits for this domain can be seen a key expertise.

Transport has developed into rather isolated mode-centric silos, not just in aspects of technology, but also in competing for a customer share. Overcoming the boundaries of modes is key factor to form cross-modal mobility and successful urban interchanges concepts. In the past we have seen strong industry driven advocacy for specific modes. This vehemence isn't yet visible for sector spanning concepts that answer the needs of end users rather than industry sectors. From a policy level this demands transportation professionals that can advocate the needs of sector spanning concepts, such as urban interchanges and bring it to the attention of policy makers.

Interview

with **Ms. Inta Rozenšteine**
Deputy Director
Department of Finance and Development Planning
Ministry of Transport
Riga, Latvia

What are the knowledge, skills and competence in the domain of urban interchanges?

From the point of view of my competence (i.e. planning) - the most important is the understanding of the role of the urban interchanges in the whole city transport system, and also in the overall national level transport system.

Knowledge of environmentally friendly, economic (time and money) transport solutions are required, knowledge in urban planning (as the place is not unlimited), as well as knowledge on new technologies to be used in transport and logistics.

What are the emerging areas of expertise required for transportation professionals?

In my opinion, it is very important for a transport professional to be able to follow the opportunities provided by the use of new technologies, in order to use this knowledge creatively for planning transport interchanges (and not just that, of course).

with **Dr.Sc.Ing. Vaira Gromule**
Chairman of the Board
JSC "Riga International Bus and Coach Terminal"
Riga, Latvia

What are the knowledge, skills and competence in the domain of urban interchanges?

Professionals of different profiles with the following skills are required:

- Urban planning
- Transport modeling
- Transport organization
- IT data protection
- Environmental safety and inclusive design
- General knowledge of management
- Risk management
- Civil protection

What are the emerging areas of expertise required for transportation professionals?

- Organization and modeling of transportation activities
- Risk management
- Environmental safety and civil protection
- IT and data protection

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Consortium

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UNIVERSITY OF THESSALY, TRAFFIC TRANSPORTATION & LOGISTICS LABORATORY (UTH-TTLog)	Greece
FRAUNHOFER INSTITUTE FOR FACTORY OPERATION AND AUTOMATION (IFF)	Germany

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