

**ALLIANCE Fact Sheet N° 2:**

*Defining educational requirements and areas in transportation  
for Latvia and the region*

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

## **Background and content**

Statistics reveal that over 50% of the world population lives in cities, approximately 75% of the European population lives in urban areas, urban mobility accounts for 40% of all CO<sub>2</sub> emissions of road transport and up to 70% of other pollutants from transport, and urban freight vehicles account for 6-18% of total urban travel (European Commission, 2014; European Commission, 2015; Figliozzi, 2010; Grimm et al., 2008).

Even if there are various new technological solutions, still, economic, managerial and regulatory barriers restrict the incorporation of these solutions to the sustainable management and operation of transport systems. To this end, it is crucial that cities and stakeholders identify and apply innovative strategies to improve quality of life of citizens, taking into consideration factors such as economic competitiveness, business needs and emerging traveling and consuming trends.

The understanding of the aforementioned situation requires targeted actions, aiming at organizing an educational and training program, which can inspire the involvement of researchers, practitioners and decision makers, and stimulate scientific excellence and knowledge-sharing in transportation.

The scope of the 2<sup>nd</sup> ALLIANCE fact sheet is to present the main findings of a coherent gap analysis, which resulted in the identification of educational requirements and areas in transportation for Latvia and the region.

## **Educational requirements and areas in transportation for Latvia and the region**

Conducting a two-level gap analysis, practice related requirements for passenger and freight interchanges (Gap analysis I) were converted into educational gaps and requirements for passenger and freight transport interchanges (Gap analysis II). The requirements per thematic area, i.e. governance, smart solutions and decision-making, were then linked with an educational area. In total, twenty educational areas were defined, based on the Gap analysis II requirements, and the existing research, educational and training programs offered at European institutes. The educational requirements and educational areas per thematic area and topic are presented in Table 1.

**Table 1:** Educational requirements and areas for Latvia and the region (Source: ALLIANCE, 2016)

Thematic Area	Topic	Gap I	Educational requirement	Educational areas
Governance	Stakeholders	-	Incorporation of organizational and business models in course material.	1. Building business models for passenger transport interchanges
	Policy	Legal framework does not focus on interchanges.	Improvement of course content on transport legal frameworks with reference to EU and partial coverage of interchanges and environmental legislation. Special attention on interchanges and environmental legislation in the courses oriented on EU transport policy issues.	2. Development and implementation of sustainability and transport policies in the EU region
		<b>Not harmonized policy for interchanges.</b>	<b>Improvement of course content on transport legal frameworks with reference to EU, freight transport and environmental legislation</b>	3. Development and implementation of freight transport policies in the EU region
	Ownership	Limited involvement of several authorities.	Incorporation of courses oriented on public private partnerships (PPP) models and mega infrastructure financing schemes in educational and training the program.	4. Public Private Partnerships in transport: Theory and schemes
		<b>Limited business models development.</b>	<b>Incorporation of innovative business models in course material.</b>	5. Building business models for freight transport interchanges
	Sustainable development	Limited incorporation of interchanges in regional and national development plans.	Incorporation in the program of topics with integrated development plans with reference to sustainable development and the environment.	6. Sustainable passenger transportation planning
		<b>Limited incorporation of interchanges in regional and national development plans.</b>	<b>Incorporation in the program topics with integrated development plans with reference to sustainable development and the environment.</b>	7. Sustainable freight transportation planning
	Management	Interchange Management Plan not including all aspects of interchange functionalities and interests.	Development of material on integrated coordination and operation of mega infrastructure facilities with special reference to interchanges and the utilization of	8. Operation and management of urban public transport systems

Thematic Area	Topic	Gap I	Educational requirement	Educational areas
			technological advances.	
		-	<b>Incorporation of innovative business and management models in course material.</b>	<b>9.</b> Operation and management of urban freight transport systems
	Operation	Limited coordination among modes and operators.	Incorporation of transport operations education and training materials that will focus on multimodal systems.	10. Multimodal transport optimization for passenger transport
		-	<b>Development of education material on integrated coordination and operation of mega infrastructure facilities with special reference to interchanges and the utilization of technological advances.</b>	<b>11.</b> Multimodal transport optimization for freight transport
Smart solutions	Information	Limited multimodal information.	Exploration and utilization of technologies to respond to transport information based needs.	12. Information systems for passenger intermodal terminals
	Services	Limited integrating ticketing. Existing services do not offer travelers real-time information across all stages of a multimodal trip Possible conflicts between vehicles and pedestrians. Not sufficient security level.	Development of course that integrates public transport with smart solutions (technology and policy oriented) and potential sustainability impacts.  Incorporation in the program topics with interchange and terminal design and planning with reference to their special characteristics and safety issues.	13. Integrated ticketing and time table coordination  14. Design and safety principles of transport terminal infrastructure
		Physical properties	Limited access for all. Insufficient cycling and walking facilities. Environmental concerns vary depending on facilities' age.	Development of education materials on transport planning and design of intermodal terminals for all users to satisfy user needs and fulfill sustainability principles.
	<b>New consolidation /distribution and logistics</b>	<b>Individually planned urban consolidation centers.</b> <b>Limited business and transport</b>	<b>Development training materials for case studies of planning urban consolidation centers.</b>	<b>16.</b> Urban freight terminals design

Thematic Area	Topic	Gap I	Educational requirement	Educational areas
	cooperative concepts	operational planning.		
	Information technologies	Limited cooperation between publicly owned and operated Intelligent Transport Systems and enterprise-level software for supply-chain management, trip planning and fleet management.	Study of ITS characteristics and utilization in case studies for the effective supply chain management and trip planning.	17. Information technologies for intermodal freight transport
	Smart transshipment	Limited use of alternative, friendly to environment and energy technologies.	Review of policies related to alternative fuels and propulsion technologies, and estimation of environmental impacts for intermodal terminals.	18. Smart transshipment and alternative transport fuels
Decision-making	Interchange status assessment and users' feedback	Not obligatory. Insufficient information for decision-making: only few surveys, data not reliable; no network assessment at the strategic level, etc. Limited data sharing.	Development of integrated course material that will focus on assessment practices with focus on interchanges and life cycle impacts (society, environment and economy) by including users' satisfaction.	19. Risk assessment analysis, behavioral modeling, social cost benefit analysis and multi-stakeholder multi-criteria assessment
	Decision-support methods	Limited sharing of data.	Incorporation of novel data collection methods and exploitation of big data opportunities in decision-making and analytics of freight transport.	20. Innovative data collection methods to support decision-making

Note: Grey hatched cells are freight based.

## Conclusions

Concluding, the first level gap analysis, conducted between the interconnecting networks in the European Union (EU), and Latvia and the region, showed that the latter cover the majority of the thematic areas in terms of practices for both passenger and freight interchanges. Nevertheless, compared to EU practices, Latvia and the region perform poorer, mainly due to limited incorporation of sustainability principles into planning and operation of terminals, and the absence of integrated business and management plans.

The second level gap analysis revealed the lack of a common integrated approach for the development of transport programs and transport courses content, even if there are several transport related programs in Latvia and the region.

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