EUROPEAN UNION
HORIZON 2020 RESEARCH & INNOVATION PROGRAMME

ALLIANCE Fact Sheet Nº 1:

An overview of transportation networks' interconnection in Europe

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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

During the last decade, the European Union has proposed a common transport policy framework as an overall strategy, integrating sustainable development in urban transport, and addressing aspects such as economy, competition, land-use planning and research policy. Transporting people and goods is a key catalyst in economy; still, increased traffic volumes significantly affect the quality of life in the urban-interurban environment. Therefore, cities and stakeholders need to identify new strategies to improve quality of life of citizens, setting up their planning according to economic competitiveness and business needs, but also to emerging travelling and consuming trends (ALLIANCE, 2016).

ALLIANCE addresses the topic of intermodal interconnections, through interchanges for passenger mobility and freight transportation, taking into consideration legal and organizational issues, mobility needs and patterns of transport usage, interaction with other domains, such as spatial planning and economic development, smart and sustainable solutions for achieving smooth and seamless transportation, and decision-making strategies, methodologies and techniques for assessing and evaluating the impact of these solutions on the transportation domain, as well as the economy and society.

The scope of the 1st ALLIANCE fact sheet is to present the main findings of a comprehensive state-of-the-practice review in the interconnection of transportation networks in Latvia, the region, and generally in Europe, and to highlight good practices revealing from specific passenger and freight interchanges.

Intermodality and transport interchanges

Intermodality is defined by the European Commission as a policy under which "*different transportation modes are being combined in a trip, in order to achieve a seamless journey*", with the aim of providing the means for better mobility and impact minimization (European Commission, 2007). Legal and institutional structures, decision-making schemes, infrastructural and technological solutions are other dimensions concerning intermodality (Adamos et al., 2012).

Transport interchanges are considered as the network components that enable intermodal operations. A definition for passenger interchanges is the following (Adamos et al., 2015): "*transportation nodal points that enable seamless mobility, increase travelling efficiency, achieve user satisfaction and ensure system performance for door-to-door journey by making optimal use of combinations of modes in a sustainable way*". In the case of freight transport, a respective definition for freight interchanges can be: "*network nodes enabling logistics operations, which are required for the transshipment of goods along a corridor*" (ALLIANCE, 2016).

In physical terms, transport interchanges compose the field of intermodal activities, including the transferring from a long to a short distance network, from interurban transport to urban distribution, referred to as "last mile" and the change of transportation modes and/or vehicles (ALLIANCE, 2016).

Good practices in passenger interchanges

In total, 41 passenger interchanges were reviewed, covering a wide range of the European Union, including 17 countries: France, Norway, Greece, Lithuania, Spain, United Kingdom, Finland, Hungary, Czech Republic, The Netherlands, Germany, Switzerland, Austria, Denmark, Estonia, Belgium and Portugal. The 32% of the interchanges were identified as national hubs, and the rest

68% of the interchanges can either be considered as national city terminals or other city/local terminals. Five more passenger interchanges, located in Latvia and the region, were also reviewed.

Table 1 summarizes good practices revealed when reviewing the 46 European interchanges. The practices are presented under three main topics: governance and policy, smart solutions and decision making, and they are separated into the European Union, and Latvia and the region.

Table 1: Summary of practices for passenger interchanges (Source: ALLIANCE, 2016)

Thematic area	Topic	EU practices	Latvia and region – state of practice
Governance	Stakeholders	Clear identification of the roles and responsibilities of multiple stakeholders. Use of concession contracts for the organization of the station operation.	Roles and responsibilities clearly identified. Various types of participation available.
	Policy	When the municipality has clear roles and responsibilities, then it can lead the processes at an interchange and bring in funding sources, if needed. National and regional authorities make efforts to familiarize transport and terminal operators with relevant policies.	National/regional/local policies for strategic development exist. National and local authorities have interest in establishment of interchange terminals.
	Ownership	Pursuit of public/private model to ensure that the operations and management are co-ordinated across all the transport and other functions. Organizing the relationships between public and private according to the local context and functions of the interchange. Ownership separation from operation.	Limited involvement of private investors due to small market. Restriction on the use of the public-private partnership model by the government. Poor use of public-private partnerships.
	Sustainable development	Involvement of private sector and pursuit of private funding. Development plan for city integration.	Development plans include integration of transport sector at the municipality level, not enough emphasis on integration of transportation modes at the national level.
	Management	Development of Interchange Management Plan.	Fragmented existence of management plan; may not cover all aspects of functionalities. The cities and the government of Latvia are eager to better control their subsidies to public transports companies, and they need automatic passenger counter systems widely accepted across the country.

Thematic area	Topic	EU practices	Latvia and region – state of practice
	Operation	Integrated coordination among transport operators and modes.	Poor operation integration among various operators at the state level.
Smart solutions	Information	Real time information: Pre-trip planning, electric departure time display, multilanguage information. Way finding plan: maps, floor plans, directional signals (WC, ticket booth, concise, clear, consistent and ambiguous information).	Smart solutions applied fragmentarily. Basic information is provided.
	Services	Integrating ticketing: ticket sale for all services in the interchange facility zone, definition of fare paid areas, staff presence, smart ticket readers. Safety: Design covering all emergency and security requirements (hand rails, anti-sleep flooring, and lighting), avoidance of conflicts between pedestrians and vehicles, emergency management plan amongst stakeholders, trained staff, emergency exits. Security: Consultation of crime prevention specialists during the design phase, consideration of crime prevention through environmental design, good lighting, CCTV, trained key staff presence.	Different ticketing systems developed for various modes of transport. Design in terms of safety does not correspond to today's requirements in cases of old passenger interchanges. Average level of security is provided.
	Physical properties	Appropriate design and layout of access/egress. Accessibility for all users. Environmental concerns and energy efficiency. Variety and high quality facilities.	Design and layout of access varies depending on facility's age. Energy efficiency is taken into account for new projects.
Decision-making	Interchange status assessment and users' feedback	Pursuit of public participation. Customer satisfaction surveys.	User feedback is used fragmentarily.

Good practices in freight interchanges

In this case, the review included 13 freight interchanges located in 8 European countries: Denmark, Finland, France, Germany, Greece, Italy, Romania and Spain, and 5 more interchanges, located in Latvia and the region. A summary of good practices, also separated into governance and policy, smart solutions and decision-making, and into the European Union and Latvia and the region, is given in Table 2.

Table 2: Summary of practices for freight interchanges (Source: ALLIANCE, 2016)

Thematic area	Topic	EU practices	Latvia and region – state of practice
Governance	Stakeholders	Absence of clear identification of the roles and responsibilities of multiple stakeholders.	Roles and responsibilities clearly identified.
	Policy	Not harmonized policy.	National transport policies are in line with the EU transport policy. Fragmented focus on intermodality, in some cases effective integration of different modes of transport. Segmented policy on tariffs (for different transport modes).
	Ownership	Access to all companies to terminals under equal conditions of ownership.	Public and private ownership. Poor use of public-private partnerships.
	Sustainable development	Involvement of private sector and pursuit of private funding.	Sustainable development is foreseen in strategic plans.
	Management	Development of Master Plan.	Master Plan exists for each freight terminal.
	Operation	Integrated coordination among transport operators and modes.	Provision of high-level productivity, fast and reliable services. Effective integration of different transport modes.
Smart solutions	New consolidation/distribution and logistics cooperative concepts	Establishment of urban consolidation centers. Business and transport operational plan.	Consolidated distribution centers continue to develop.
	Information technologies	Use of Information and Communication Technologies for developing Truck Management Systems and Warehouse Management Systems.	IT systems introduced and used for supply-chain management, trip planning and fleet management, high standard technologies.
	Smart transshipment	Use of equipment for loading-unloading operations and movements within the interchange facilities.	Use of equipment for loading-unloading operations and movements. Fragmented use of energy effective and environmentally friendly equipment.

Thematic area	Topic	EU practices	Latvia and region – state of practice
Decision-making	Decision-support methods	Agent-based modeling approach and multi-stakeholder multi-criteria analysis.	Several decision support tools used such as environmental impact assessment, traffic forecasting, economic analysis and risk assessment. Fragmented data collection and analysis.

Conclusions

Concluding, the review of the interconnecting networks in EU and the Latvia and the region showed that Latvia and the region cover most of the areas in terms of practices for both passenger and freight interchanges. Latvia and the region corresponds adequately to basic needs and requirements; however, compared to EU practices it performs poorer mainly due to limited incorporation of sustainability principles into planning and operation of terminals and limited integration of technological advances with new transport trends as well as business and management plans.

References

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