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JOINING OF THE LOGISTICAL PARKS OF ŽILINA INDUSTRIAL ZONE TO RAILWAY TRANSPORT

Summary. This text deals with the possibilities of joining logistical parks to railway transport in Žilina industrial zone. There are detailed characteristics of designed variants of joining - 4 chosen areas suitable for location of a logistical center considering the other means of transport (water, road, air) and necessary occupation of territory. Solution takes into account the use of existing railway system for passenger and goods transport and at the same time it accepts territorial plans of included areas.

POŁĄCZENIE PARKÓW LOGISTYCZNYCH STREFY PRZEMYSŁOWEJ ŻILINY Z TRANSPORTEM KOLEJOWYM

Streszczenie. W artykule omówiono możliwości połączenia parków logistycznych z transportem kolejowym w strefie przemysłowej Żiliny. Szczegółowo scharakteryzowano proponowane warianty połączenia – 4 wybrane lokalizacje centrum logistycznego biorąc pod uwagę pozostałe gałęzie transportu (wodny, drogowy, powietrzny) oraz potrzebną powierzchnię terenu. Rozwiązanie uwzględnia wykorzystanie istniejącego systemu kolejowych przewozów pasażerskich i towarowych, a jednocześnie zgodne jest z planami rozwoju terytorialnego analizowanych obszarów.

1. INTRODUCTION

The Department of Railway Engineering and Track Management (KŽSaTH), the Faculty of Civil Engineering (SvF), the University of Žilina in Žilina (ŽU) is involved in solving the international project named “*Regional Development Transport Logistic – the Best European Practices for Designing Logistical Parks (REDETREAL)*” which is being solved as a part of the program INTERREG III.C EU. Solving this project, the team of KŽSaTH co-operates with other workplaces of ŽU and it's responsible for the part of the solved problem connected with the sphere of railway transport.

The project INTERREG III.C is an international project being solved within the EU. It's concentrated on interregional co-operation and its aim is to improve the policy of ways of regional development and solidarity in the form of changing information and mutual changing of experience. The aim of this program is to overcome problems of international development which are caused with frontiers.

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2. CHARACTERISTIC OF THE PROJECT

There are six partners solving the program of the project and they are:

1. The town of Žilina (its solving organisation is also ŽU) – the Slovak Republic,
2. The town of Břeclav – the Czech Republic,
3. Shannon Development – the Irish Republic,
4. Klok Kompetenzzentrum Logistik Komwestheim GmbH – Germany,
5. AMAVE – Associacio de minicipios do Vale do Ave – Portugal,
6. Klein Region Ratschendorf AT – Austria.

Leading partner of the project is the Town of Břeclav.

The main aim of the project REDETRAL is to develop the European practice in establishment and development of logistical parks considering tenable transport and transport solutions. Results of the solution will be pilot projects in which conditions of their establishment and optimal use should be defined. The main outputs of the project are supposed to be :

- the manual for designing of logistical parks with the special focus on the use of structural funds of the EU,
- elaboration of pilot projects,
- definition of economic and transport intentions connected with logistical parks,
- definition of optimal organization structures for logistical parks and strategies of implementation,
- marketing strategy,
- presentation of results in the form of workshops, a common conference and publications.

As for the contents, the project is divided into 4 components:

A component number 1: management and coordination (the Town of Břeclav and all partners),

A component number 2: elaboration of the general strategy, marketing strategy (Shannon Development – Ireland),

A component number 3: pilot project – designs of logistical parks concepts and solutions (Žilina),

A component number 4: publicity and spreading of knowledge (the Town of Ratschendorf AT-Austria).

Basic relations among partners participating in this project INTERREG III.C “East” are drawn in the **fig.1**.

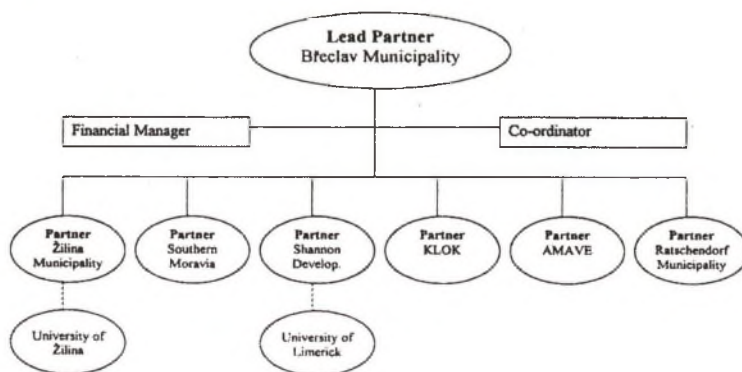


Fig.1. List of partners participating in solving the project INTERREG III C

Rys.1. Lista partnerów biorących udział w rozwiązaniu projektu INTERREG III C

Employees of KŽSATH, SvFŽU in Žilina are involved within the action INTERREG III.C into solving of the pilot project named “*Transport Logistics in Žilina Region*”. The main aim of this project solution is the development of new transport solutions for needs of developing industrial zones in the Town of Žilina and its region from the point of view of the best European practice. Concrete aims of the project are orientated on:

1. Explorations and analyses of the present possibilities of Žilina region from the point of view of territorial possibilities, human and material resources, transport requirements, as well as, definition of requirements of new industrial zones in the sphere of human and material resources, considering European strategic development programs in the sphere of regions; elaboration of general strategy for transport development, marketing studies of logistical parks.
2. A concept of logistical parks development based on the best EU experience – the pilot project; application of the general study and search for the best solutions for the specific project.

Considering conditions of Žilina region the aims of the project are focused on:

- an analysis of possibilities for the town and region development (human resources, territorial possibilities, material conditions and etc.)
- an analysis of transport conditions in industrial zones of the town, transport logistics, logistical chains,
- an analysis of transport availability of transport conditions and infrastructure, mainly the analysis itself:
 - a) passenger transport,
 - b) goods transport,
 - c) transport road system,
 - d) quality of transport service,
 - e) present conditions of transport infrastructure,
 - f) an analysis of environmental conditions (noise, emission),
 - g) elaboration of the general strategy for transport conditions solutions of the town and its region,
 - h) presentation of the solution results at conferences.

In the sphere of railway transport the solution is focused on:

- an analysis of the present state of railway tracks from the point of view of wider European relations, from the point of view of the region, as well as, of the town (laying tracks, location of bus stops, evaluation of existing state),
- the present state of the track load,
- the present state of utilization of the railway system for the needs of the town and region (town tracks and suburban tracks),
- the present state of the railway system from the point of view of the possible use for needs of industrial zones.

3. DESIGNS OF JOINING LOGISTICAL PARKS TO THE RAILWAY SYSTEM

In the first stage of choosing locations for the logistical park in Žilina region there were explored four locations. **In the fig.2** there is drawn the first design in which are drawn possibilities of location of logistical parks in Žilina region, and that is **the location n.1 Žilina – Teplice** near the automobile company KIA, **the location n.2 near the Airport of Žilina – Hričov**, **the location n.3 in the industrial zone of the Town of Žilina** and **the location n.4 in the industrial zone of Kysucké Nové Mesto**.

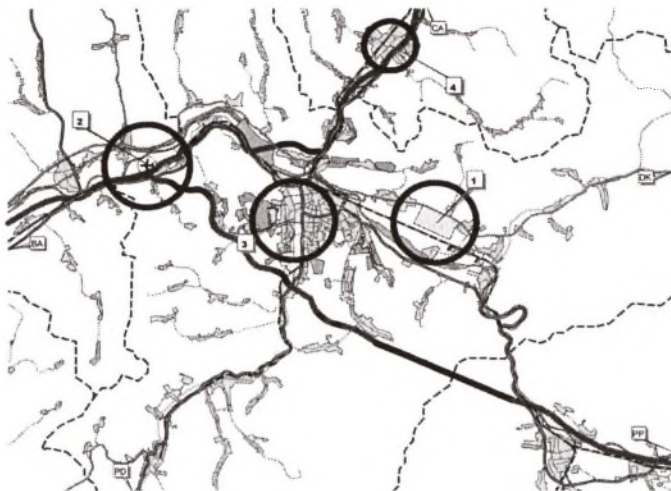


Fig.2. The choice of suitable locations for placement of the logistical park
Rys.2. Wybór odpowiedniej lokalizacji parku logistycznego

From the point of view of the done analysis of transport and transport infrastructure in Žilina region for decision whether to establish a logistical park in Žilina region there were made the following conclusions:

Facts for the location of the logistical park:

- international road and railway transport corridors cross Žilina region in the direction north – south and east – west, it has connection to the highway system and system of motorways, near the town there is an airport and water route in the river Váh,
- inhabitants of this region have a very good transport access to regional seats and to the District Town of Žilina as for roads and railways, too (only region Námestovo hasn't a railway connection).

Facts against location of the logistical park:

- overloading of main road routes with the possibility of the situation getting worse after production of the automobile company starts,
- absence of the superior transport system (highway D1, D3 and international corridors crossing Žilina district E 75, E77 and E 50),
- connection to international roads in the direction Žilina – Čadca to Poland (Bielsko Biata) and to the Czech Republic across Český Tešín still doesn't reach required parameters.

Gradually the choice of the suitable location for placement of the logistical park was specified into two locations, and those are:

- Žilina – Teplice – the location n.1,
- Žilina – Hričov – the location n.2.

3.1. The location n.1 – Žilina – Teplice

This location is given along the railway track Košice – Žilina (track section n.2601). On the left side of this railway track in the direction of its kilometrage (southern direction) and the river Váh there hasn't been finished the marshalling yard Žilina – Teplice so far and on the right side (northern direction) the construction of the company KIA Motors Slovakia is being finished. In this location there were designed and evaluated four variant solutions of placement of the logistical park considering its connection to the existing railway system.

In each variant there were explored possibilities of connection and service in three possible ways, and those are from the railway station (r.st.) Žilina, r.st. Varín and the marshalling yard Žilina – Teplička (the last one is to be finished and given into use in the nearest future). The railway track Košice- Žilina is a part of the transeuropean corridor n.V and in the nearest future it is going to be modernized to track speed 160 km/h .

Variant n. 1 is situated near the r.st. Žilina, between the village Teplička nad Váhom and connecting track A2, leading on the bridge over the river Váh to the marshalling yard Žilina – Teplička to the north of the track Košice - Žilina.

The advantage of this variant is a relatively small distance from the railway and road junction Žilina. In case there are enough passengers, it's possible to think about connection of this location to the town and suburban public transport, The disadvantage of this variant is a relatively big distance from the company KIA Motors Slovakia. As the only possibility to provide connection of both new plants (KIA Motors and MOBIS) to the railway transport at the same time is their mutual connection, profitableness of given financial funds for establishment of a siding and its connection to the connecting track A2 and then in the direction to the r.st. Žilina, in case in the direction to the r.st. Varín is questionable. Connection of the marshalling yard Žilina – Teplička would be possible only by using of a dead-end track which is disadvantageous from the point of view of traffic and it's practically unrealistic solution.

Variant n. 2 is situated near the set of reception sidings of the marshalling yard Žilina – Teplička, namely to the south of the railway track Košice – Žilina, nearer to the r.st. Varín. In this place there is situated also siding complex of the chemical plant (PCHZ).

The advantage of this variant is use of the existing siding track to PCHZ, as well as, the possibility of connection of this location from all railway stations in surroundings (Žilina, Žilina – Teplička, Varín). It's necessary to emphasize that usage of siding track of PCHZ would lose its meaning without possibility of using the dead-end track.

Variant n. 3 is situated to the north of the railway track Košice - Žilina near the village Gbeľany and in the direction to the east also near the plant KIA Motors Slovakia (behind the plant MOBIS). The advantage of this variant is a relatively small distance from both plants (KIA Motors and MOBIS), as well as, the near r.st. Varín. The disadvantage of this variant is a necessity of a connection to passing track n.4 at the r.st. Varín (resulting from organization of set of sidings in r.st. Varín), which is situated directly in front of the station _building, as well as, impossibility of establishment of next track without reconstruction of the station building.

Variant n. 4 is situated to the south of the railway track Košice – Žilina and at the same time near the set of direction sidings of the marshalling yard Žilina - Teplička. This location was determined also on the basis of supposed construction of a terminal of combined transport near the set of departure sidings which is situated between the Dam of Žilina and the set of departure sidings of the marshalling yard Žilina – Teplička.

The advantage of this area is a possibility of its connection to all railway stations in surroundings (Žilina, Žilina – Teplička, Varín) as well as the possibility of its direct connection with a planned terminal of combined transport.

3.2. Location n.2 – Žilina – Hričov

This location is situated near the Airport of Žilina – Hričov (at a distance of about 15 km from Žilina) with the possibility of connection to the railway track Bratislava – Žilina, as well as, to the road and highway system. The Airport of Žilina – Hričov is a public international airport for air transport which serves for the region of Northwestern Slovakia (territories of Považie, Kysuce, Turiec and Orava) with approximately 1.2mil. of inhabitants (towns of Trenčín, Púchov, Považská Bystrica, Bytča, Žilina, Kysucké Nové Mesto, Čadca,

Martin, Ružomberok, Dolný Kubín, Námestovo a Trstená). In this context it is certainly important that at the present time this airport is also used for goods transport. Interest in this location is risen also with the fact that in the nearest future, after realization of modernization of the corridor railway track Bratislava – Púchov – Žilina (it's supposed to be finished in 2012) and after finishing the highway D1 (2008), it will be available very well which can quicken its further development.

Connection of this location to the railway track was solved in two variants.

Variant n. 1 considers connection of the location from the r. st. Dolný Hričov (it's situated on the railway track Bratislava – Žilina) with minimum changes in the existing set of sidings. Its disadvantage is that considered connection has with the highway D1, which is being built at present, fly-over crossing, realization of which would be hardly possible in the future.

Variant n. 2 considers connection of the location from the stop Horný Hričov where would be necessary to build a branching-off with fly-over crossing of track lines on the railway track Bratislava – Žilina. Even despite higher investment expenses, however, the variant n.2 is more realistic as the highway D1, which is already being built, crosses the railway track behind r.st. Dolný Hričov and it is not necessary to cross the highway D1 any more. If the number of goods trains, going to this logistical park, were higher, then instead of the branching-off shunting loop could be built in Horný Hričov within considered modernization of the railway track Bratislava – Žilina.

Variant 1, as well as, variant 2 respect not only building of the highway D1 but also a supposed relaying of the railway track after its modernization. As within modernization of the railway track Bratislava – Žilina a new stop Dolný Hričov is considered to be established near the Airport of Žilina – Hričov, passenger transport could be solved in an above-mentioned way, however, for goods transport there would be necessary to build a new connection, namely according to the variant n.1 or the variant n.2.

4. CONCLUSION

Solving the project REDETRAL – INTERREG III. C EU, which deals with regional development and transport logistics within design of logistical parks, is planned for longer time and its final opponent judgement is to take part in the first term 2007. Because of this fact there hasn't begun solving of problems in the sphere of railway transport which are planned for later period within the international co-operation. It's clear from this paper that the project solves an extraordinary up-to-date problem for Žilina region considering construction of new automobile plants, workplaces and the considered logistical center in this area and their connection to the existing railway system together with acceptance of its modernization in the nearest future.

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