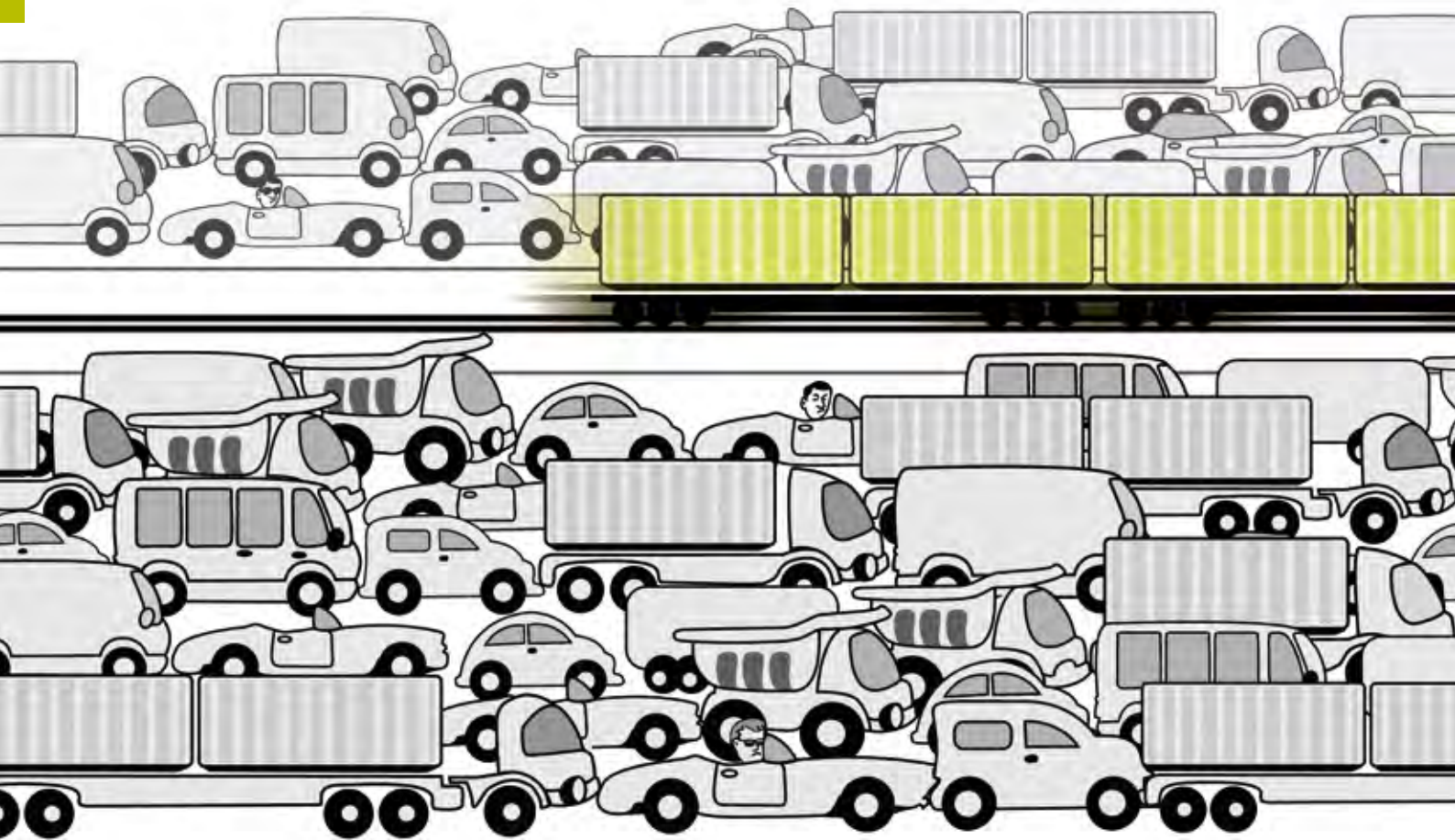


The FLAVIA experience



Successful solutions to develop an important
European logistics corridor

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Dear Readers,

In March 2011 the European Commission adopted its White Paper „Roadmap to a Single European Transport Area“, a strategic document that assesses recent transport policy, looks at long-term challenges and identifies the goals we must meet over the next 40 years to 2050, while providing a detailed framework for policy action in the next ten years.

The future development of rail transport and infrastructure plays a prominent role in this strategy and also puts transport policy in a wider perspective: how to promote growth and jobs while becoming more efficient in the use of resources – in particular how to enhance transport while massively reducing reliance on oil to address both fuel security and climate change.

The international community agreed in Cancún to limit climate change to 2°C, requiring that developed countries cut greenhouse gas emissions by 80 to 95% by 2050 with respect to 1990. The European Council has subsequently endorsed this target. European transport will have to reduce its emissions by at least 60%.

To guide us to a 60% cut of transport emissions while enhancing mobility, the White Paper sets benchmarks for policy action and to measure progress. These include a shift of 30% of long-distance road freight (>300 km) to other modes, in particular to rail, by 2030, and more than 50% by 2050. This means that rail freight will almost double (+87%) compared to 2005, creating both immense opportunities, but also challenges for rail. The rail sector needs to prepare to accommodate circa 360 billion ton-kilometres more than today on its network. Multimodal transport solutions as well as Single Wagonload traffic need to be promoted, inland waterways need to be integrated in the transport system and support for eco-innovations in the freight sector should be created.

The project **FLAVIA**, which is supported by the European Commission, aims to improve intermodal freight logistics between Central and South-Eastern Europe, while strengthening the position of climate-friendly transport modes like rail and inland waterways. This will reduce the burden on the roads and improve access to the regions.

The examples of successful modal shift to rail and inland waterways in seven European countries, which form part of the **FLAVIA** project, show that these environmentally attractive transport modes are becoming more important for shippers and transport companies, which increasingly see them as competitive alternatives to road transport in terms of both quality and cost efficiency.

Besides the modal shift examples, the **FLAVIA** project prepared various solutions to strengthen the intermodal transport along the **FLAVIA** countries. The identification of technical, organisational and administrative transport obstacles and the preparation of concrete action plans to remove them is one of them. New train concepts as real alternatives to road transport were realized for the corridor. During the project an innovative intermodal routing tool was created. It enables the user to plan and route intermodal transports across Europe. Cooperative structures were established by setting up national pro-rail alliances in the **FLAVIA** countries. They will help to carry on the **FLAVIA** idea in future. These outcomes demonstrate how the challenges caused by the growth in freight transport demand can be handled in an economically viable way, which is responsible towards the environment, the climate and the European citizens.

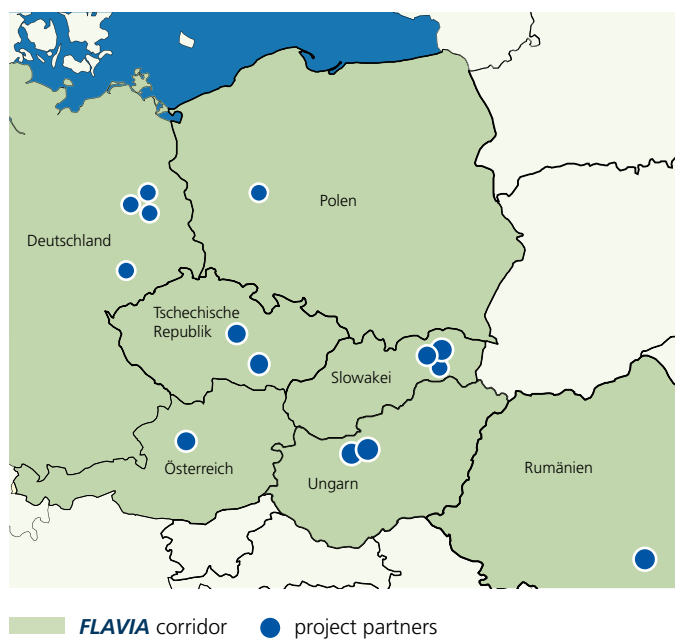
I hope you find the **FLAVIA** findings interesting and see it as an inspiration that will help strengthening the position of environmentally-friendly transport modes: rail and inland waterways and intermodal transport solutions.




Siim Kallas
Vice-President of the European Commission and Commissioner for Transport

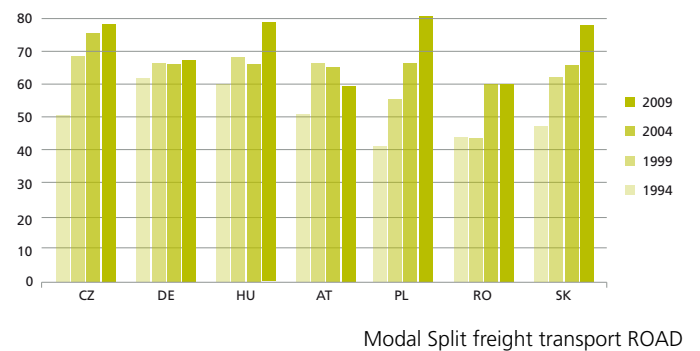
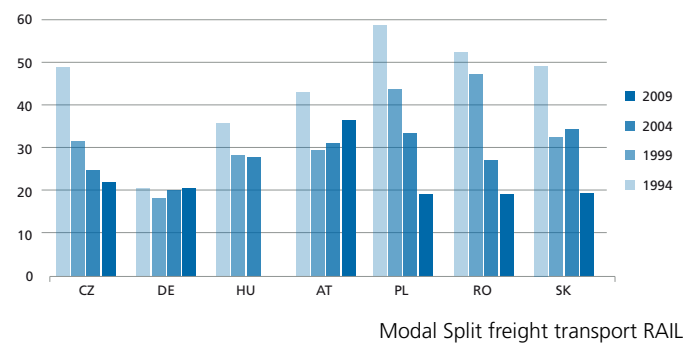
The challenge to develop a logistics corridor in Central Europe

With the EU-accession of the former Eastern Bloc countries the challenge has arisen to integrate the new member states efficiently into the existing structures. Besides the economic development, the establishment of sustainable, freight and logistics transport connections is one key element of the European cohesion policy. The **FLAVIA** freight and logistics corridor reaches from Germany in the Northwest to Romania at the Black Sea and includes mostly the new East European member states.



The **FLAVIA** project has chosen therefore a logistics-oriented approach to improve and strengthen the rail and inland navigation freight transport along the corridor. The historic isolated development of the national rail freight markets has led to fragmented transport networks across Europe. As a consequence, missing interoperability hinders transnational transports along the corridor. The current conditions in the new member states implicate that the railway cannot assert its system advantages compared to the road freight transport. Bottlenecks like cross border waiting times, inadequate infrastructure and capacity constraints weaken

The **FLAVIA** corridor considers itself as an add-on to the important North-South land-bridge from the North and Baltic Sea range to the Mediterranean Sea. Though, the **FLAVIA** corridor struggles with technical and organizational obstacles (e.g. the modal split of the rail freight transport decreases continuously in the last years) which interferes the transport performance and hence the function of the corridor as connection between Central Europe and the new emerging economies at the Black Sea and beyond (e.g. Turkey, Ukraine, and Kazakhstan).



the rail transport. The **FLAVIA** project has identified various obstacles and has prepared concrete proposals to remove them. Furthermore, new transport concepts and marketing tools have been developed to push and promote the intermodal transport along the corridor and among the market actors.

Infrastructure improvement – a precondition for better logistics and accessibility

The analysis of the capacity of the freight rail network in each **FLAVIA** country resulted in an inventory of rail network segments and nodes with insufficient capacity. In each **FLAVIA** country there are highly utilized segments which are more or less well equipped and secondary segments with insufficient infrastructure. So, a catalogue has been prepared which comprises the most critical infrastructural bottlenecks. Main reasons for capacity lacks are missing second tracks, missing electrification, and overstrained freight terminals as well as shunting yards (see report 3.5.1).

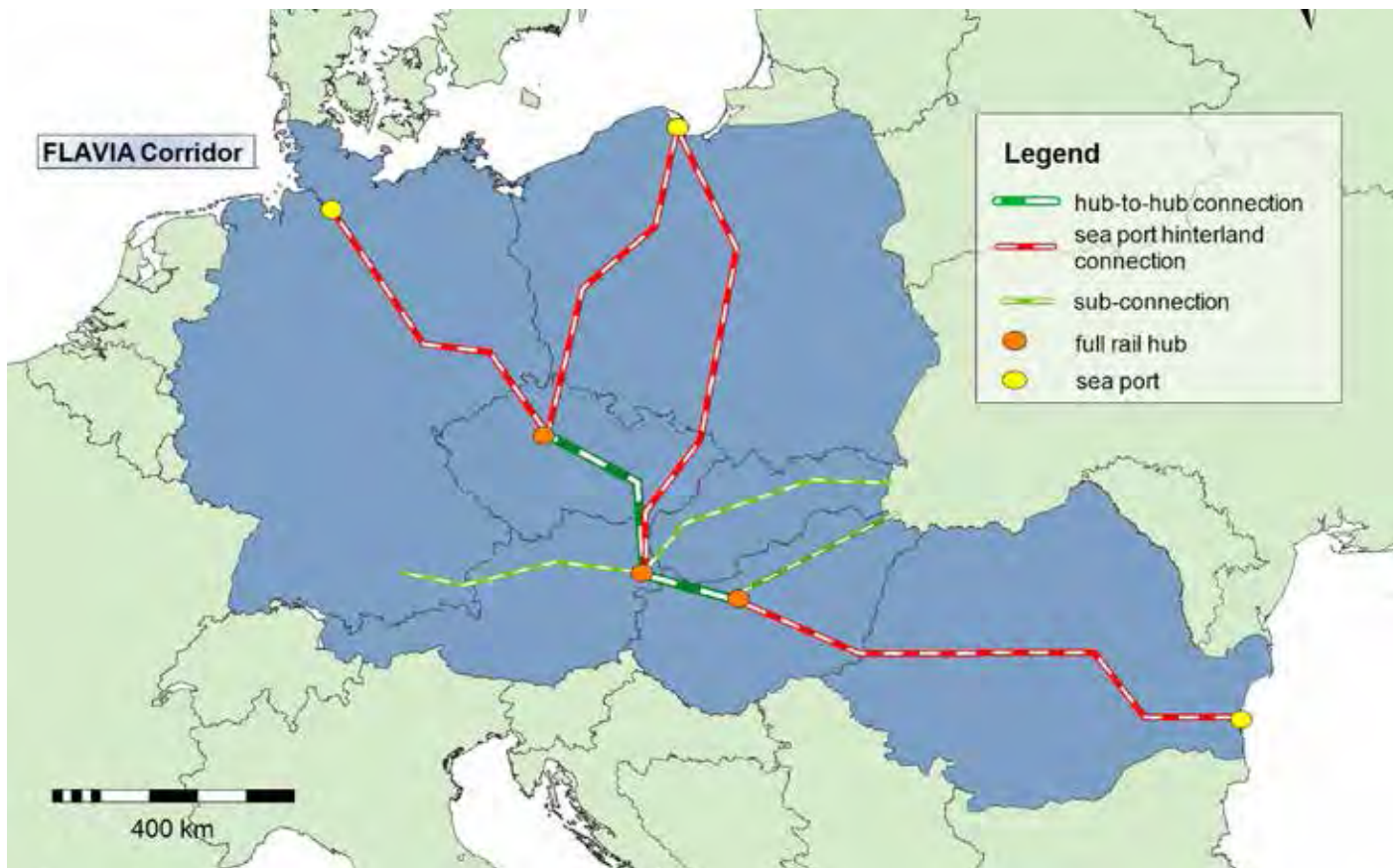
The revision of the TEN-T guidelines in October 2011 was an important step for a better integration of the European transport networks. Basically, the key input for freight flows are logistics and industrial centers, terminals, and manufacturers. But the guidelines of the revision handicaps regions with low population and high freight volumes. Therefore, a critical review of the new TEN-T core network from a logistical point of view has been carried out in **FLAVIA** (see policy paper 3.5.6).



Capacity of the railway network along the FLAVIA corridor



Missing segments and nodes of the revised TEN-T network



Requested liner services with high potential for implementation

The potential of the market

To identify the current needs for new liner services a survey among transport operators was carried out. Various experts from the transport market were interviewed to express their opinion related to missing rail liner services along the **FLAVIA** corridor. The main findings are:

- ▶ There are actual needs for rail liner services in each country and at transnational level, connecting important economic and demographic clusters from the different **FLAVIA** countries,
- ▶ The West to East direction prevails the North to South direction. From Central Europe to the Black Sea most of the missed liner services are using the TEN-T corridor IV; from Budapest to Constanta it is possible to have a bundling effect.
- ▶ Several rail liner services, which were requested by the transport operators, and have a high market importance, are: (i) Hamburg/Bremen, DE – Prague, CZ; (ii) Gdańsk, PL – Prague, CZ; (iii) Munich, DE – Linz, AT – Budapest, HU; (iv) Prague, CZ – Budapest, HU; (v) Budapest, HU – Constanta, RO.

Prague and Budapest are therefore candidates to take over the role of hubs along the corridor (see report 3.5.3).

Speeding up the freight flows

Cross-border points are essential interfaces within a logistics chain and hence influence the overall performance of transnational rail freight transports. The most common problems at the border points along the corridor broken down according to the individual countries have been identified:

1. interoperability of the railway networks
2. administration related to the customs clearance
3. technical capacity
4. waiting times (as resulting value)

A lacking interoperability of the railway networks leads to time consuming processes at the borders. These are time consuming technical inspections of the rolling stocks, changing the electric power systems and signalling/ safety equipment systems. The administration related to the customs clearance can cause delays and bottlenecks at Schengen borders which need to be improved and simplified. It concerns the border stations in Hungary toward Ukraine, Serbia and Croatia, in Poland at the Ukrainian, Belarusian and Lithuanian borders, in Romania at the Ukrainian, and Moldavian borders as well as in Slovakia at the Ukrainian border. But also the situation within the Schengen Area has to be harmonised (see reports 3.5.7, 3.5.8 and 3.5.9).

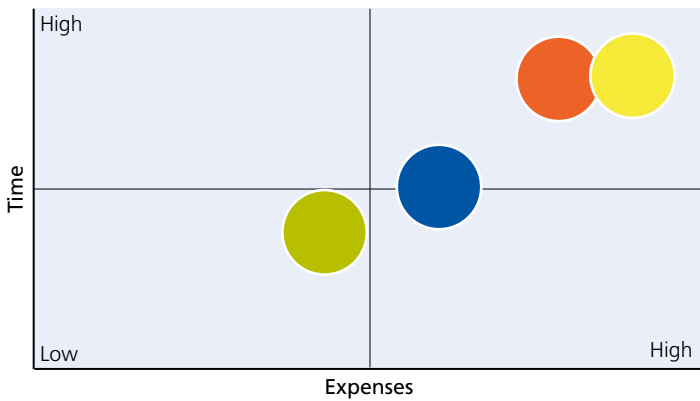
Making logistics chains more efficient

Environmental issues, market development and energy restrictions represent future challenges and shortcomings for the transport industry. Different measures from the operators as well as administrators side can enhance the level of transport efficiency in future. Organizational aspects within the transport sector (operator's side) have an influence on the transport times which in turn affect customer's decision to select a transport mode. Shippers now pay attention not

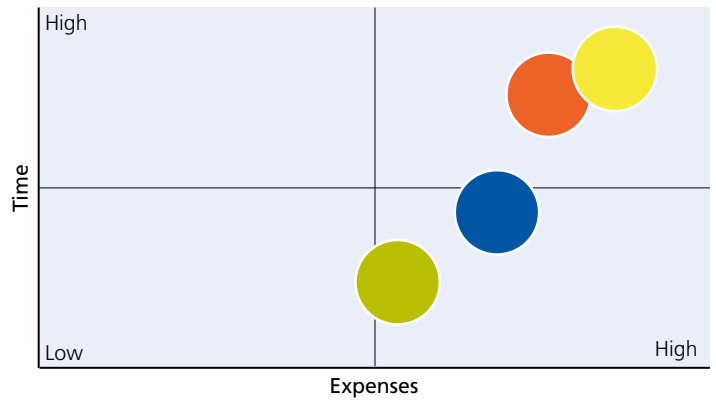
only to the cost of the service, but mainly on the quality and in particular the security of goods along the whole supply chain. Bottlenecks on infrastructure can affect capacities or throughputs and hence limit the whole logistics chain.

The most important measures to reduce the above mentioned bottlenecks from the operators as well as administrators side are shown in the graphic below (red: organizational measures; green: educational measures; blue: security measures; yellow: infrastructural/technical measures).

Most efficient measures from a FLAVIA point of view-operator



Most efficient measures from a FLAVIA point of view-administration



- Opening hours in terminals — Cross border train schedules — Transparency about transport service
- Reduction of waiting times and stops during transport process — Support employees (creation of awareness) — Cooperation with security services
- Language problems — Cross national training programs — Training of internal personal — Reduce damage and theft
- Port and terminal expansion — Maintenance of vehicles — Terminal tranship techniques — E-trucks for pre-and end-haulage

- Cross border procedures — Creation of competitive conditions on the transport market — Transparency about transport services — Interoperability — Facilitating trade regulations — Information concerning the licencing process and legislative issues
- Improve safe parking areas — Give advice to operators — Examine international incentives
- Cross national training programs — Problem with multidisciplinary knowledge
- Building additional tracks on the network — Reduce points on the rail infrastructure which lead to inefficient speed restrictions — Complete electrification of different segments in the network — Complete the ETCS upgrading program

Intelligent rail freight concept

The corridor analysis has shown various obstacles and bottlenecks. The proposed action plans shall support operators and authorities by removing them. Nevertheless, the **FLAVIA** project proved that presently many shippers use rail

and inland waterway transports consciously as competitive and environmental-friendly alternatives compared to the road transport. Such best practice examples were collected for each **FLAVIA** country in form of 8 brochures.



Brochures "From Truck to Train" from all FLAVIA countries

Cosmetics from Bavaria to Monheim (DE)

Actually, the starting point was ideal: more than 50 years ago, Schwarzkopf had built its factory in the immediate vicinity of the train station in the small Bavarian town of Wassertrüdingen. The direct rail connection had the advantage that products could be dispatched from the factory by train. When Henkel took over the factory in the 1990s as part of its acquisition of Schwarzkopf, the track had fallen into disuse and the transport of the finished products had already been shifted to the roads. During the last 14 years, Henkel made several attempts to start using rail freight transport again. In the end, reactivation of the railway siding was completed in a record-breaking time of just four months.

A long story with a happy end

The company's central depot for cosmetics and body care products is located in Monheim near Düsseldorf. Dr. Stefan Huchler, the head of Global Supply Chain Management for the company's Cosmetics/Body Care division explained how the rail option came about: „When the turnover of goods increased we had to find a new and, above all, sustainable transport solution between our factory in Wassertrüdingen and our depot in Monheim.“ Connecting both locations by rail was quickly identified as an efficient and sustainable alternative to road haulage. A railway siding, although neglected, was already in place at the factory in Wassertrüdingen. In addition, Henkel's depot operator and long-term logistics partner Hammesfahr had plans for constructing a rail connection. However, Huchler first had intensive checks made on whether there was enough capacity on the line to transport the volume manufactured of goods. The bureaucratic hurdles and the extensive and expensive construction measures also necessitated a careful analysis: for example, the track near the factory in Wassertrüdingen had been closed by Deutsche Bahn in 1995 and would have to be reactivated, expanded and repaired. Track construction measures would also be required in Monheim. Henkel finally initiated the project in 2009. In the meantime, Deutsche Bahn had leased the track to Bayern Bahn, a private train operating company (TOC) based in Nördlingen. Thanks to the flexibility of the Bayern Bahn in combination with the TOC in the town of Monheim, Henkel developed an attrac-



tive concept with transport capacity tailored to its requirements. The two private TOCs ensure that trains can run on a direct overnight connection from Wassertrüdingen to Monheim. The company received a grant from the Federal Railway Authority's subsidy fund for reactivating private railway sidings. On January 8, 2010, more than 14 years after the line was closed and only a few months after the start of the planning phase in August 2009, the first train rolled into the cosmetics logistics depot in Monheim. For all participants it was one of the most pleasant ways to start the New Year!

The trains are finally rolling


Two private TOCs provide the haulage services: Henkel signed a transport contract with BayernBahn, a medium-sized TOC, which in turn cooperates with the Monheim TOC. A normal day's transport looks like this: around 17:30, the train is ready to depart from Wassertrüdingen. A diesel locomotive takes the wagons 15 kilometres to Gunzenhausen where an electric locomotive takes over and continues the journey overnight to Langenfeld. A diesel locomotive is used for the final six kilometres from Langenfeld to Monheim using Monheim infrastructure. Hammesfahr can begin unloading the freight train as soon as 6:00 in the morning. The empty wagons then begin their journey back to Gunzenhausen, arriving at 17:00, where they are swapped with loaded wagons. It is a perfect logistics cycle, requiring a to-

tal of three groups of rolling stock: while one train is being loaded, another is being unloaded and a third makes up the so-called Henkel-Shuttle en route between Wassertrüdingen and Monheim. „Everything works perfectly, it is reliable and safe,“ said Huchler happily.

Proud of the railways

The depot in Monheim has also integrated the export warehouse and the warehouse for co-packaging, allowing the railways to run logistics processes efficiently. This reduces the number of HGV journeys in the vicinity and also generates new jobs at the depot. Henkel, which is committed to sustainability, is also currently looking into whether raw materials for the production in Wassertrüdingen can be delivered by train, and makes a point of ensuring that its suppliers have a railway siding and can deliver by rail.

Success can also be demonstrated in figures: Henkel transports 86.000 tonnes of cosmetics products by train annually, including aerosols, which is hazardous freight. At peak times the train comprises up to 12 wagons, each loaded with 45 to 55 tonnes. The Henkel-Shuttle relieves the burden on the environment, with 3000 fewer HGVs and a reduction of 7.000 tonnes of CO₂. Huchler added: „We are all proud that our rail freight concept could be implemented positively and that we never lost sight of our target of sustainable and environmentally friendly transport, in spite of all the complications. ●

| |
|--|
| <p>Product Cosmetics (e.g. hair colour, deodorants, shampoo, hair conditioner)</p> |
| <p>Shifted tonnage 86.000 tonnes annually, equivalent to 3.000 HGV</p> |
| <p>Company Henkel Schwarzkopf</p> |
| <p>Motivation for shifting mode Punctuality, environmental benefits</p> |
| <p>Date of modal shift January 2010</p> |
| <p>Route Wassertrüdingen (Bavaria) – Monheim (North Rhine–Westphalia)</p> |
| <p>Length of route Approx. 500 km</p> |
| <p>Transport company Hammesfahr Logistik, Bayern Bahn, Monheim railways</p> |
| <p>Company contact: Dr. Stefan Huchler Corporate Senior Vice President Cosmetics/ Global Supply Chain Management</p>  |
| <p>Telephone +49 211-797 3626 Fax +49 211-798 4040 E-Mail hanna.philipps@henkel.com Internet www.henkel.com</p> |



Cool freight concept for fresh hams (DE – IT)

Pork transport from Oldenburg-Münsterland to Italy

Every day in the Oldenburg–Münsterland region in the northwest of Lower Saxony, the company Vion Emstek GmbH slaughters and processes between 8.000 and 9.000 pigs, including the most valuable product: fresh hams. With an ever-increasing export share, the company does not just deliver to German customers. One of its most important export markets is Italy. The fresh hams are precut and hung up on hooks before being sent south. Thanks to a smart transport concept that makes use of both road and rail freight transport (combined transport), the major part of the journey between Germany and Italy is by train.

Monitoring the cooling chain online

Fresh meat is a very delicate product and must be permanently cooled to 2 degrees for the duration of the journey. Holger Magiera, Vion’s logistics manager, is responsible for this. Before switching to rail transport, Magiera dispatched the fresh hams to his Italian customers in special refrigerator trucks. Vion Emstek GmbH has its own fleet of 12 trucks and additionally makes use of other transport service providers. When exports to Italy began to rise in 2008, there was not enough capacity on the trucks and Holger Magiera was forced to look for alternatives. The transport and logistics company Paneuropa Rösch, based in nearby Vechta, gave him the decisive tip: a rail-based transport concept. The Vion Emstek logistics manager’s initial scepticism – particularly regarding punctuality and freshness – were alleviated as soon as his colleagues from Paneuropa demonstrated their highly modern, specially developed deep-freeze trailer, which can be hoisted by crane. This rail-based concept was convincing because it promised to maintain the cooling chain. The trailers have a strengthened roof construction with tubular tracks and are cooled by a special combined diesel–electric unit. Sensors measure the temperature in the trailer and transmit the data per GPS to employees at the company’s dispatch central in Vechta where the temperatures in all the trucks can be viewed on a monitor. If necessary, they can take direct action, change parameters and correct problems.



Combined concept is tried and trusted

In the factory in Emstek, the fresh hams are hung on hooks and loaded onto one of Paneuropa’s refrigerated trailers. Every week, four trucks leave the company’s premises at around 15:00 and drive the 60 kilometres to the freight transport hub, the Roland transport terminal in Bremen, where the trailers are loaded by crane onto special train wagons. The truck returns without a trailer. During this period the diesel generator provides electricity to maintain the correct cooling temperature. At 19:45 the train leaves for Italy. The freight arrives 24 hours later at the Italian Terminal Quadrante Europa in Verona, undamaged and without any disruption to the cooling chain. The trailers are then unloaded by crane from the train and attached to trucks operated by an Italian road haulage company and transported to the customers in and around Modena, Bozen and Trentino, a distance of between 100 km and 150 km. Vion Emstek greatly values the



combined transport system, which reliably delivers its freight to Italy. This is because the train has its own slot and arrives at its destination punctually. And any congestion on the long journey is of no interest at all to the pigs.

Fresh deliveries are highly popular

Transporting food products by combined transport is enjoying increasing popularity. Not only fresh hams from Vion Emstek are transported in this way to Italy; other companies in the Bremen and Hamburg region also use these refrigerated services, for example to transport margarine, chicken or milk. The trains, which are run as block trains between two terminals by a neutral operator, also offer space for additional goods in order to optimise capacity utilisation. The 'cool combination' of road and rail ensures that the freight is delivered punctually, safely and, above all, completely fresh. „And for companies having freight transported on this long route it is more economical than simply by road,“ confirmed Holger Magiera from Vion. „If road transport continues to become more expensive in the future then combined transport will become ever more popular, particularly on long-distance connections,“ forecast Marek Dolinski from Paneuropa-Rösch.

Product

Fresh hams

Shifted tonnage

4.160 tonnes per year, equivalent to 208 HGVs

Company

Vion Emstek GmbH

Motivation for shifting mode

Search for alternative concepts began after exports increased, reliability

Date of modal shift

January 2009

Route

Emstek (Lower Saxony) – Roland Terminal in Bremen – Terminal Quadrante Europa in Verona (Italy) – Region Modena, Bozen, Trentino (Italy)

Length of route

Approx. 1.400 km

Transport company

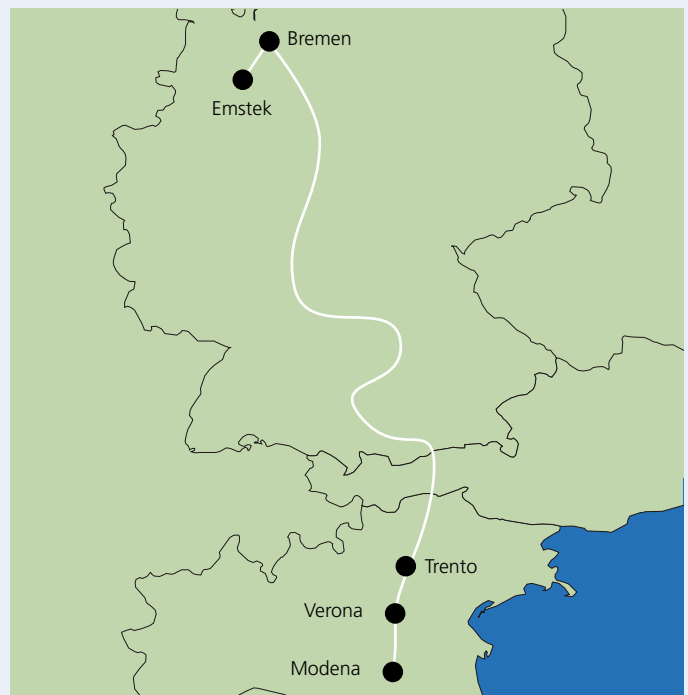
Paneuropa Rösch

Company contact:

Holger Magiera
Head of logistics
Company Vion Emstek GmbH



Telephone +49 (0) 447-380 7346
Fax +49 (0) 447-380 7101
E-Mail holger.magiera@vionfood.com
Internet www.vion-emstek.de/



Castorama Polska Sp. z o.o. (PL)

Do it yourself, with ship and train!

Castorama is Poland's largest DIY hypermarket chain offering DIY, construction, redecoration, home arrangement and gardening products. The company goes back to 1967 when Christian Dubois established the first supermarket in Englos (close to Lille) in France. Rapid development of these shops in France enabled the company to dynamically expand into foreign markets. The company entered the Polish market in 1994 when Castorama Polska was established. Its goal was to develop company's business in Poland. This resulted in immediate action as the first shop was opened in Warsaw in 1997. The supermarkets have been dynamically developing since then and, so far, 67 commercial units have been opened including 60 locations called Castorama and 7 locations operating under the Brico Depot name.

At first, containers filled with goods for Castorama Polska were transported from the Gdynia and Gdańsk to the warehousing centre located in Gądkki near Poznań only via roads. However, utilisation a single mode of transport became less and less effective. There were several reasons for this fact. Firstly, the expenditures for road transport increased steadily. This was connected with skyrocketing diesel fuel prices and the introduction of the electronic toll collection system within the national roads system on 1 July 2011. It must be added that, with time, the network of roads included in this system will expand, which may result in further increase in prices for services provided by means this mode of transport. Another reason consisted in dynamic increase in the volume of the transported cargo stream and rising frequency of heavy containers transport, which required utilising special semi-trailers of considerably limited accessibility and high costs.

All the above factors resulted in the fact that the possibility of using rail transport to deliver particularly heavy goods was taken into account. While taking this decision, the environmental protection aspects were also taken into account as they are clearly defined in the policy of the Castorama's capital group (Kingfisher), i.e. the company should constantly care about environmental protection. The first at-



tempt to use rail transport to deliver cargos from sea ports was successful and, at the end of August 2011, the first train loaded with containers filled with goods for Castorama was sent.

| Item No. | Container type | Quantity |
|--------------|--------------------|------------|
| 1 | 20' | 236 |
| 2 | 40' | 33 |
| 3 | 40' HC (high cube) | 28 |
| Total | | 297 |

The pattern of transporting containers by means of trains from Gdynia or Gdańsk ports to the Gądkki warehousing centre is as follows: containers loaded on flatbeds are formed in a draft of cars and transported from ports to the container terminal in Kobylnica near Poznań, which belongs to Cargosped Sp. z o.o. The distance is over 300 km and the whole trip takes approx. 12 hours. In the terminal, the containers are loaded on semi-trailers and transported to the warehouse in Gądkki located approx. 30 km away from Kobylnica. However, due to the fact that Cargosped opens a new container terminal in Gądkki, soon the distance covered by means of road transport within the final section of the route will be reduced to 2 km.

From the end of August to December 2011, Castorama transported 297 containers in total, by means of trains. See the table below for a detailed list of transported containers. It must be added here that in 2011 ratio of utilisation of rail transport in relation to road transport was 30:70, however, the company is planning to increase the share of rail transport. Currently, the share of rail transport is at a level above 90%. As of today, Castorama Polska Sp. z o.o. considers the decision connected with employing rail transport to deliver cargo containers as a favourable one. Most of all, the transport costs have been lowered and the company has confirmed that its actions taken for environmental protection are not just a greenwashing slogan but a natural element of its business activity. ●

Product

DIY products for renovation, construction and garden

Shifted tonnage

30 containers (45') per week

Company

Castorama Polska Sp. z o.o.

Motivation for shifting mode

costs savings, organizational improvements, protection of the environment

Date of modal shift

August 2011

Route

Gdynia – Kobylnica; Gdańsk – Kobylnica

Length of route

Approx. 320 km

Transport company

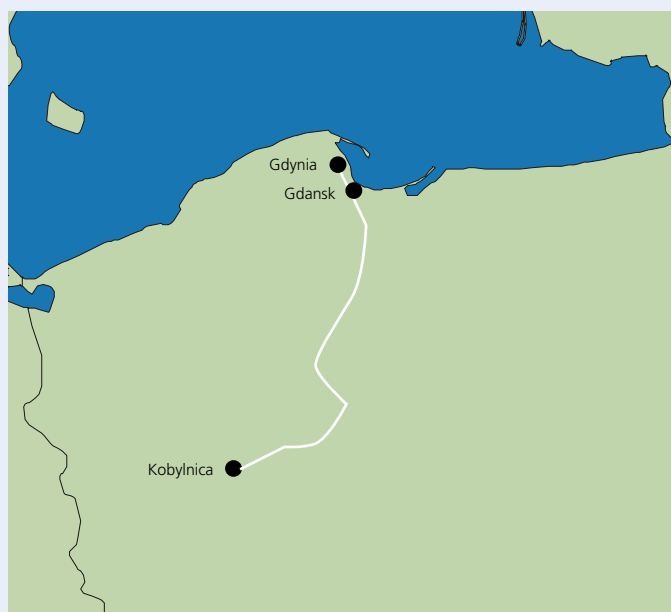
Yusen Logistics Sp. z o.o., DAMCO Sp. z o.o.

Company contact:

Mira Roszkiewicz
Import Logistics Manager



Telephone +48 22-57 53 100
 Fax +48 22-57 53 200
 E-Mail Mira.Roszkiewicz@castorama.pl
 Internet www.castorama.pl





Can Pack Group

Can-Pack S.A. (PL) Intermodal cans from Brzesko

Actually, the starting point was ideal: more than 50 years Can-Pack S.A. has production facilities all over the world and is one of the leading players on the global market for metal packaging, e.g.:

- ▶ two-piece aluminium beverage cans with easy-open aluminium ends for beer and soft drinks
- ▶ round steel food cans and shaped cans for vegetable and meat products
- ▶ steel bottle closures (crown corks) for use with beverage and mineral-water bottles made of glass
- ▶ easy-open steel ends for use with steel cans for meat and fruit/vegetable products.

At the onset, the metal beverage cans were transported from the plant located in Brzesko, between Cracow and Tarnów, to the Gdynia port by means of road transport. The cans loaded to containers on the Can-Pack S.A. premises in Brzesko travelled approx. 700 km throughout the whole country on Polish roads to be delivered to the Gdynia port, from which they were forwarded by ships. However, road transport became less and less effective, i.e. as a result of increasing difficulties in obtaining access to lorries adjusted to transporting cargo containers. Additionally, the prices for road carriers' services have increased rapidly during the last few years. Due to the above, an attempt to deliver cargos by means of rail transport has been made. In practice, this solution appeared to be a good move and, as a result, it has been successfully implemented since 1 March 2011 when the first train carrying containers loaded with metal beverage cans was sent to the Gdynia port.

The replacement of road transport with rail transport has influenced the transformation of product distribution organisation in Can-Pack S.A. Presently, the cargo is loaded to containers already located on rail cars directly at the siding situated within Can-Pack S.A. premises. This eliminates the necessity to transport containers by road to a container ter-

minal, which results in considerable savings, both in terms of money and time. Next, the containers are transported by rail from Brzesko directly to the Gdynia port and shipped through the Baltic Sea to a Finnish ordering party. It must be added here that the fact of shifting from road transport to rail transport has significantly contributed to streamlining the warehouse operation as the process of providing rail cars for loading is planned in such a manner that it does not interfere with the process of loading lorries. This solution enables the company to optimally and effectively utilise the resources stored in distribution warehouses.

Another important reason for shifting the goods distribution from road transport to rail transport is environmental protection treated as a priority by Can-Pack S.A.. The evidence for this is the fact that the company maintained the costly railway siding within the plant premises even though rail transport was used to a limited extent.

Each week, Can-Pack S.A. ships approx. 30 containers by means of 45' rail transport from Brzesko to Gdynia. How-



ever, in this case providing the weight of shipped goods in tonnes is not a reliable method as the transported goods (aluminium cans) are very light. Thus it must be mentioned that a 45' container ships approx. 3 tonnes of cargo.

It is also worth highlighting that Can-Pack S.A. has not borne any costs connected with shifting from road transport to rail transport. The reason for this is obvious, i.e. the company uses its own rail siding located within its premises. With hindsight, company's representatives consider the above-mentioned decision as a favourable one, which results from several reasons:

- ▶ the problem with the temporary shortages of lorries adjusted to transporting containers has been solved;
- ▶ the operation of the warehouse has been considerably streamlined;
- ▶ thanks to shifting the modes of transport, the company achieved savings estimated on the level of 15%. ●

Product

Packages

Shifted tonnage

30 containers (45') per week

Company

Can-Pack S.A.

Motivation for shifting mode

costs savings, organizational improvement, protection of the environment

Date of modal shift

March 2011

Route

Brzesko – Gdynia

Length of route

Approx. 700 km

Transport company

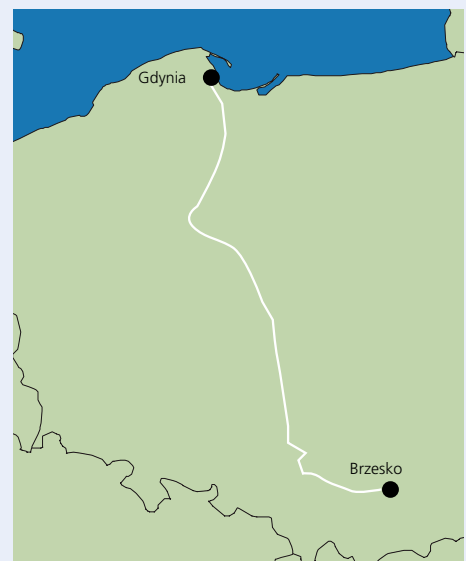
Trade Trans Sp.z o.o. forwarder and PKP CARGO rail operator.

Company contact:

Wojciech Sumara
Logistics Department Director



Telephone +48 14-66 20 166
 Fax +48 14-66 32 881
 E-Mail wsumara@canpack.eu
 Internet www.canpack.eut



Basic products transported through Austria via one train



The retail group REWE International AG processes their daily supply to their stores in Tyrol and Vorarlberg by using the block train Orange Combi Cargo from the company Gebrüder Weiss.

The Orange Combi Cargo was fully launched in 2008 and has a length of 600 meters. There are daily transports offered from Vienna to Vorarlberg. This service is used by the REWE International Lager & Transportgesellschaft. Basic food which is not categorised as „fresh food“ (e.g. perishable goods) and also products for our daily life, like detergent products, are delivered by the Orange Combi Cargo. The pre-carriage of the goods is done by truck from Wiener Neudorf to the loading terminal in Vienna Freudenu. The main carriage to the terminals Hall in Tirol and Bludenz is done with a specific defined amount of transport units. Afterwards the on-carriage to the stores is also processed by Gebrüder Weiss.

Before the beginning of the service, the REWE International AG was doing their transport into the western region of Austria mainly by using the truck. They were forced to have two drivers available which can carry out the long distance transport. Due to this requirement high costs and negative environmental emissions have been created. With the new transport solution REWE International AG saves actually 1,1 million litre fuel for trucks. All in all there are 750.000 kilometers of rail transport every year.


The parameters distance, quantity and route characteristic create favourable terms for the railway transport, as this way of transportation can be done (under this parameters) in a more economical way as compared to direct truck transports.

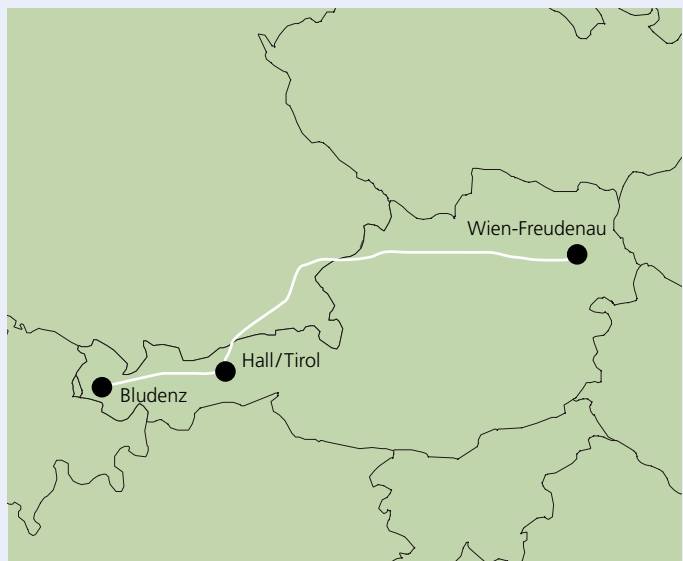
For this transport solution REWE International AG installed well organized partnerships. Next to the cooperation with

Gebrüder Weiss, there are several partners in this transport process involved. The Rail Cargo Austria and the container-service company Hämmerle are important players when it comes to the execution of the transports. Also the terminal operators WienCont and Tiroler Straße-Schienen-Umschlags-gesellschaft do a perfect job in order to get an efficient cargo handling.

REWE International AG uses the given infrastructure for their logistics activities. Due to the fact that there is a long distance combined with non-time critical goods, the transports from the central warehouse in Vienna can be done in a very efficient way. Furthermore, there exists the possibility to transport the inbound-flow of materials and goods to Vienna (central warehouse) also by train. To sum up, the responsibly persons from REWE International AG consider the created transport solution as very positive and efficient. Through the good cooperation strategy along all partners, it was possible to shift the mentioned cargo from road to train.



| |
|---|
| <p>Product Perfumery products, baby food, detergent products – Products from our daily life</p> |
| <p>Company Rewe International Lager- und Transportgesellschaft m.b.H</p> |
| <p>Reasons for modal shift: savings in freight costs, long-term safeguarding of ability to deliver, shorter turnaround, transport reliability, rail solution more acceptable to local community, protection of the environment</p> |
| <p>Length of route 670 km</p> |
| <p>Shifted tonnage: 77.690 tons – approximately 4.000 trucks driving from east to west Austria – in addition 4.000 trucks are going back to Vienna</p> |
| <p>Company contact: REWE International AG Reinhard Wakolbinger Logistics Project Manager</p>  |
| <p>Telephone +43 (0) 22-366 007 633 E-Mail r.wakolbinger@rewe-group.at Internet www.rewe-group.at</p> |





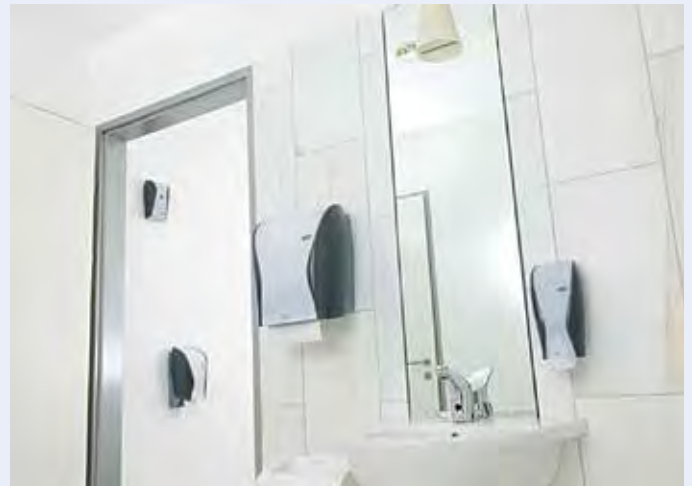
Innovative products transported by train (AT)

Hygiene-products are transported from Zell am See to the service centers Imst, Villach, Graz and Vienna.

The Head Office in Zell am See is situated at the location of the company's head office of the Hagleitner group of companies. Their customers in the province of Salzburg and in neighbouring Tyrol are supported by the Hagleitner employees of the service center at Zell am See, which was already established in the year 1976. This service center has a separate delivery warehouse. The hygiene consultants work in the field, supported by service technicians, delivery staff, warehouse employees and an organisational team at the office. The production facilities are also located in Zell am See. This is the location for the chemical-technical manufacturing, paper conversion and the assembly of dispensers as well as dosing devices.

The fact that not only bulk goods can be transported by train makes this best-practice example remarkable. In Zell am See a wide range of the complete diversity of the Hagleitner products is produced (washroom hygiene, kitchen hygiene, laundry hygiene, janitorial hygiene, wellness hygiene). In total, 8.000 tons of hygiene-products leave the site annually. Cargo is also transported by train via the company's own siding track. The track was opened in 2004 and connects the head office with the service centers in Imst, Villach, Graz and Vienna. Approximately 6.000 tons are transported annually on these routes. Originally, this transport volume to the mentioned destinations was carried out on the road. Through the mentioned shift a total of 300 trucks are saved annually. As there exist a direct connection between the several locations no further infrastructure is required in order to provide a transshipment process.

The given transport situation offers big advantages for the company Hagleitner as the internal logistical planning for the incoming and outgoing wagons can be handled in a very reliable and flexible way. In average, 2 wagons per day leave the head office. Additionally, 3 wagons are heading



for Zell am See within one week. The flexible loading and unloading possibilities as well as the increased transport volume represent great benefits mentioned by Markus Kollmaier, Managing Director of Hagleitner Hygiene.

Next to the logistical advantages presented here, additional opportunities are seen due to the provided rail transport



procedures. Through the installation of the company's own siding track the survival of the head office in Zell am See was ensured as the route connections to and from Zell am See are not optimal, especially for road transports. To create such a solution and procedures, an amount of 1,7 million euros was required. The project was supported by funds from the state as well as federal states.

In 2008 the siding track was extended from 300 to 375 meters. Additional adaptations were made in order to handle new capacities from the central warehouse. The company reports that the installation of the new siding track was the right decision. In the future, further cargo should be shifted to train transport. In general it can be stated, that the movements by rail are a good approach to carry the products in a very reliably way as there almost no damages occur. This is why Hagleitner tries to enhance the level of environmental friendly transports. Although, a slight decline can be noticed caused by the increase transport costs within the rail sector, Kollmaier reported that they are confident to continue their successful way with rail transports in the future. ●



Product

washroom hygiene, kitchen hygiene, laundry hygiene, janitorial hygiene, wellness hygiene

Company

Hagleitner Hygiene International AG

Reasons for modal shift:

transport reliability, congestion on roads, increasing costs of road transport, protection of the environment, free time of loading

Length of route

different lengths

Shifted tonnage

6.000 tons – approximately 300 trucks

Company contact:

Hagleitner Hygiene International GmbH
 Markus Kollmaier
 Managing Director



Telephone +43 (0) 504 561 3001
 E-Mail markus.kollmaier@hagleitner.at
 Internet www.hagleitner.com



Worldwide beech timber exports – via waterways (DE – NL/BL)

Sawn timber in containers from Aschaffenburg to Antwerp and Rotterdam

Good connections to transport infrastructure are a decisive factor for companies, especially when they choose a new location. Pollmeier Massivholz GmbH, a producer of sawn beech timber, decided to locate its third sawmill in Aschaffenburg in Bavaria, directly in the Bavaria Harbour. The location lies directly on the river Main which offers one great advantage. Three transport modes are available for forwarding freight: by road, rail and inland waterway. For Pollmeier, the proximity of waterborne transport facilities was of particular importance.

As a raw material, timber is sustainable, innovative and ecological, and is a true allrounder with a wide range of applications. Sawn beech timber is used mainly for furniture, interior construction and for flooring. Beech wood is hard and resists abrasion, is easy to work with and is the most commonly used hardwood in Germany.

In 2007, Pollmeier opened its new sawmill in Aschaffenburg in Bavaria, choosing the location on the one hand due to the town's proximity to transport waterways, and on the other hand because it is close to a forest region with a plentiful supply of trees. In this way the logs used for producing sawn timber do not have to be transported further than 150 km. „Traffic avoidance“ is how Pollmeier's head of PR and Marketing, Jan Hassan, puts it.

Pollmeier produces sawn beech wood for markets overseas: the USA, China and for Arabian countries. The timber is packed in large, 40-foot freight containers, which leave the sawmill by truck for the short 300 meter journey to the port terminal. There the containers are loaded via cranes onto river barges that are destined for Antwerp or Rotterdam. The waterway has a length of approx. 770 km, initially on the river Main before the barges join the Rhine for the onward journey. Pollmeier dispatches around 1.000 such freight containers each year, with 900 of those being transported on water. In all other cases the waterway is blocked, something that does not happen very often, according to



Hassan. The company annually dispatches 21.600 tons of sawn wood by river barge, saving around 900 truck journeys.

Pollmeier uses several transport companies for shipping its beech wood products. In most cases, the company Contargo GmbH is contracted to process the containers at the terminal and load them onto the barges. Contargo's offices are located directly in the port. „During the summer everything smells of wood,“ said Frank Pfeiffer, operations manager at Contargo Aschaffenburg. Contargo is a neutral service provider with a fleet of 22 vessels that operate along the rivers Main and Rhine, and 18 inland waterway container terminals in Germany, the Netherlands, France and Switzerland. Contargo's smallest barge has a capacity of 54 TEUs, with the largest carrying 700 TEUs. Pollmeier dispatches several dozen containers per week by barge. A vessel with the name of Gerald Albert, a so-called main-feeder, transports Pollmeier's sawn beech timber from Aschaffenburg to the hub at Koblenz. There the containers are transferred to larger vessels with such resonant names as Azolla, Covano, Rhenus Lünen, and Metropolis. Together with other loads, the timber is transported to the western seaports of Rotterdam or Antwerp where the containers are loaded onto ships. The journey to the seaports takes three days. Contargo offers fixed routes and schedules with a high frequency

and makes sure that the freight is transported efficiently. The company aims to optimally combine the advantages of each of the three main transport modes – road, rail and waterway – in order to offer its customers sustainable transport solutions with low CO2 emissions.

For Pollmeier’s Jan Hassan, economic factors are the main reason for choosing waterborne transport, which is cheaper than by truck. Naturally, Pollmeier also attaches great importance to the environment. It is therefore especially pleasing that the cheapest solution is also the most ecological. „All in all an easy decision to make,“ according to Hassan. An additional argument in favour of inland waterways is that Rotterdam and Antwerp are too far away for regular truck journeys, whereas the „water-based“ transport chain is very efficient. Normally the overseas customers do not even know that river barges play such an important role in the transport chain. A pity, because waterborne transport could do with some positive publicity to strengthen its environmental image.

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|--|
| <p>Product Sawn beech timber</p> |
| <p>Shifted tonnage 21.600 tons per annum, the equivalent of 900 trucks</p> |
| <p>Company Pollmeier Massivholz GmbH & Co.KG</p> |
| <p>Motivation for shift to vessel Economic aspects, environmental reasons</p> |
| <p>Date of modal shift 2007</p> |
| <p>Route Aschaffenburg (Bavaria, Germany) – Rotterdam (Netherlands) and Antwerp (Belgium)</p> |
| <p>Length of route 772 km</p> |
| <p>Company contact: Pollmeier Massivholz GmbH & Co. KG Jan Hassan Public Relations & Marketing</p>  |
| <p>Telephone +49 (0) 36-926 945 271 E-Mail jan.hassan@pollmeier.com Internet www.pollmeier.com/de/</p> |





All digital – and yet these coils can hardly be overlooked! (AT)

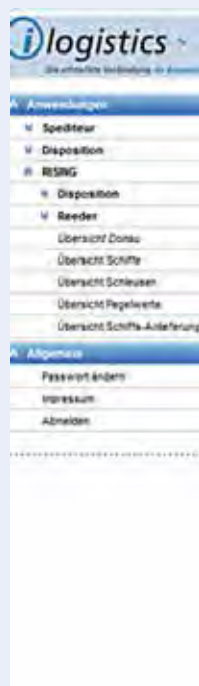
Information transparency is considered to be indispensable in today's transportation and logistics processes and plays a major role at the company Industrie-Logistik-Linz (ILL) as well. The following sections will investigate why information transparency is that important at ILL and why the company focuses on a means of transportation that is generally referred to as slow and unreliable. ILL's first priority is to ensure best customer services. In order to achieve this, ILL does not only provide highest quality, but also complete handling of all processes involved. If at any given time, location of customer goods and means of transportation are clear, the logistics supply chain can be planned and controlled optimally. Consequently, a smooth process can be guaranteed – even with an inland water vessel!

Between Linz and Krems 100.000 tons of steel coils are shipped on the Danube via inland water vessels every year. The loading process in Linz as well as the transportation control process to Krems is carried out by ILL. The physical transportation of goods via vessel is provided by third party business partners of ILL. In order to combine all resources (inland water vessel, wagon, staff) accurately, a high degree of transparency in the system is needed. In this context, the implementation of a perfect logistics process demands specific information like facts and figures about the inland waterway as well as the vessels. Data like water-level, vessel position, lock status or estimated time of arrival of the vessel are transmitted via interface of the RIS-Provider (River Information System) and are subsequently processed within the ILL system. Furthermore, the current position of the wagon which delivers the steel coils from the production plant to the port is presumed to be known. In addition, the production program of the customer is linked with the current stock of inventory at Linz and Krems. At ILL the above mentioned information is always available digitally. Current statuses of all resources are linked online with each other permanently. This enables a frictionless process and improves the planning ability of the whole supply chain.



A system chooses automatically which coil will be loaded on the vessel. Both, the optimal supply within the logistics chain and the optimal capacity utilization of the means of transportation (in this case the inland water vessel) is integrated in the decision making process of the system. As if by magic, everything runs smoothly. In general, the system works without human intervention and is just supplemented by a controlling station. The employee at this working place carries out deviation management and only interferes in case of major incidents.

What are the real benefits of this information transparency for ILL? Well, digital information enables a considerable increase in active power of the system and therefore, costs can be reduced significantly. Moreover, the inland water vessel can be used as a floating stock, which will result in a further decrease in inventory costs. Nowadays, the digital mapping of processes is at least as important as the physical delivery of the goods itself. All logistics chains at ILL are completely transparent and are automatically controlled. Due to ILL,



even the inland water vessel – a means of transportation that is considered as slow and unreliable – becomes a true competitor for train and truck. However, the transportation chain from Linz to Krems is only a small part of all ILL's transportation chains on the inland waterway. Altogether 500.000 tons of steel goods per year are handled in the sheltered port warehouse at ILL in Linz and those numbers are steadily increasing. Furthermore, the current customer demand allows for expansion, so that a doubling of transshipment quantity is expected to arise in the following ten years. ILL is well prepared for this development and is able to react upon potential increases in transport volumes by providing appropriate capacities. In addition, ILL is always represented in national and international research projects that deal with telematics or the use of information in general. Therefore, ILL is most notably a pioneer in the inland water transportation. However, due to its outstanding process designs, ILL is leading in other transport control chains as well – this company is always on the cutting edge. ●

Product

Steel coils

Shifted tonnage

100.000 tons annually equates to 75 vessels

Company

Industrie-Logistik-Linz GmbH & Co KG

Motivation for shift to vessel

Increased active power, reduced costs

Route

Linz – Krems (Austria)

Length of route

130 km

Shipping company

MSG

Company contact:

Industrie-Logistik-Linz GmbH & Co KG

Michael Wasner

Head of Research & Development

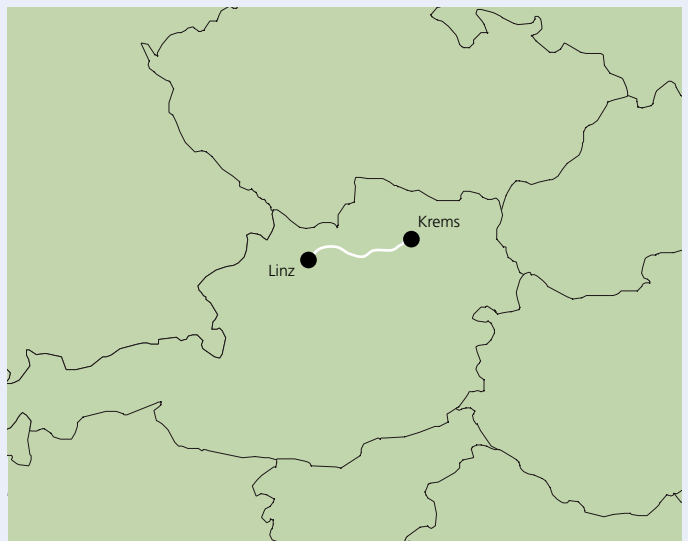


Telephone +43 (0) 732-693 690 82

E-Mail michael.wasner@ill.co.at

Internet www.ill.co.at

Logistikeitstand





Volkswagen Group Polska S.A. (CZ – PL)

Winged Arrows go by Train!

ŠKODA Auto situated in Mladá Boleslav is the biggest car manufacturer in the Czech Republic. Since 1991 it is one of four main parts of the Volkswagen concern. The Polish firm Volkswagen Group Polska S.A. was established in December 1994 for managing of distribution and service network of this concern in Poland. There are 100 authorized distributors in Poland and Volkswagen Group Polska S.A. is leader on car market in Poland.

About 23.000 cars per year are transported by railway on the relation from Mladá Boleslav over Frýdlant – Zawidów – Poznań to Swarzędz (400 km). Polish central distribution centre for Volkswagen cars is located there and it is equipped by railway siding constructed especially for this reason. Special wagons for car transportation are used. Railway transport is used since 2001.

The main distribution flow from manufacturer to central distribution centre in Poland is realized by railway only, but the local distribution in Poland is realized by road. This solution can bring savings of costs and better organisation of transport. Advantages of railway are used for strong transport flow; road transport is used for its relative higher operability in distribution to local distributors with relative smaller volume of transport on each individual transport relation.

Modal shift has been realized especially for costs savings as well as for using of environmentally friendly transport mode. Environment and its protection is a big theme in ŠKODA firm policy (there is also an emphasis to manufacturing of as most environmentally friendly cars as possible). Transport is provided by logistic operator: STS Centrum Dystribucji Samochodów Sp. z o.o. This logistic operator is a partner of Volkswagen Group Polska S.A. from beginning of business.

The most important benefit is the savings of transportation costs, but there are also other benefits like: savings of fuel, reduction of carbon dioxide production (and also other negative environmental aspects) related to this transport rela-



tion. There will be necessary about 3.000 road trucks for ensuring of this transport. Other important aspect is also higher safety and reliability of railway transport in comparison to road transport on this relation. It must be declared that this transport is realized over mountainous area at Czech–Polish borders with not so much reliable road infrastructure due to climatic conditions, especially in winter period. Using of only one transport mode between manufacturer and Polish central distribution centre also protects cars from possible damages occurred by over-loading. ●



Product

cars

Shifted tonnage

4.160 tonnes per year, equivalent to 208 HGVs

Company

Volkswagen Group Polska S.A.

Motivation for shifting mode

costs savings, organizational improvements, protection of the environment

Date of modal shift

2001

Route

Mlada Boleslav (CZ) – Swarzędz (PL)

Length of route

Approx. 400 km

Transport company

STS Centrum Dystrybucji Samochodów Sp. z o.o.

Company contact:

Monika Dąbrowska
Kierownik Zespołu PR

Telephone +48 61 87 32 455
 Fax + 48 61 87 32 433
 E-Mail monika.dabrowska@skoda-auto.pl
 Internet www.skoda-auto.pl



No dust and no congestion: thanks to the 'black-boxX' (PL – DE)

Transporting foundry coke by tipper trucks was a dusty business on Germany's motorways. Although this kind of bulk cargo normally belongs on the railways, 2009 saw an unusually high number of Polish trucks transporting foundry coke on German roads. A year later this was no longer the case after the logistics company neska intermodal developed a multimodal transport concept for shifting this type of cargo back onto trains.

A dusty business

The story of foundry coke transportation begins on the railways, takes a misguided detour onto the roads and is now back on track on the railways. Originally, the foundry coke for ThyssenKrupp's metallurgical products was transported from Poland to the Ruhr valley in conventional goods wagons, where it was dumped and then reloaded onto tipper trucks to be taken to the end customer. However, the process of unloading the coke from the train and then reloading it onto tipper trucks meant that it was unintentionally sieved again, degrading the this high-quality product. For this reason, ThyssenKrupp decided in favour of so-called door-to-door transport without the need for reloading the cargo. In other words: instead of having intermediate storage as the final destination for the freight trains, the tipper trucks simply made the direct journey from Poland to Germany. There was no dust during reloading and no loss of quality, but instead traffic congestion on the busy east-west route, disruption to the logistics chain and problems coordinating schedules. In addition, the Polish drivers often did not speak German. „In a nutshell, we simply needed another solution,“ is how Frank Holz, director at ThyssenKrupp Metallurgical Products, remembers it. „We were already transporting our products by rail and by road, so maybe it was time to combine both modes,“ said Frank Holz.

The 'black-boxX' is an open-top container

The solution was a multimodal transport concept, developed jointly by neska intermodal, an Imperial Logistics Group



company, and ThyssenKrupp Metallurgical Products GmbH. Ralf Kirion, logistics manager at neska intermodal, describes the heart of the concept as a 30-foot special container – the 'black-boxX' – that ensures an optimal weight-to-volume ratio for transporting light coke. The 'black-boxX' is an open-top container. This type of container makes block-train transportation possible, doing away with the need for reloading or for intermediate storage. Since February 2010, 150 such containers have been making the journey from Wałbrzych to Duisburg. The container first changes transport mode at the Rhine-Ruhr terminal after a journey of 900 kilometres. The final stage – a maximum of 100 kilometres – is then undertaken by trucks, which are driven by local drivers who know the area and can speak German. „On the one hand, this new solution does not cause any degradation in the quality of the product, and on the other hand the customers now receive their deliveries on time,“ explained Frank Holz.

New rail-based logistics concept stands the test

The foundry coke is loaded by the manufacturer – the Polish coking plant 'Victoria' in Wałbrzych – directly onto the 54 black containers. Each container can hold 27 tonnes of foundry coke. The black containers are then transported

as a block train by the Polish operator PKP to the border with Germany where TXLogistik takes over for the rest of the journey to the Rhine-Ruhr terminal. Every year, 50 such block trains travel between Poland and Germany. At the terminal, mobile cranes – so-called reach stackers – reload the containers onto trucks. Local drivers then deliver the containers onto trucks. Local drivers then deliver the containers to the end customer in the North-Rhine Westphalia area. The whole process runs like clockwork. Over 75,000 tonnes of foundry coke are transported annually using this method. Ralf Kirion lists the benefits: „The multimodal concept is much more economical and environmentally friendly than road transport alone. It provides relief for the very busy east-west traffic route, reducing the number of truck journeys by over 6,000 per year, or 5.6 million road-freight kilometres, according to our calculations.“ In addition, there is much less degradation in the quality of the foundry coke because it is not reloaded as often, said Frank Holz with satisfaction, adding: „It also does away with the need for intermediate storage for bulk goods. It combines the best of both systems. The concept has already passed the test.“ In order to make better use of capacity in the future, the search is now on for freight for the return journey from Germany to Poland. Other transport journeys using the ‘black-boxX’ containers, for example to the Czech Republic, are also being planned. The ‘blackboxX’ concept offers many possibilities!

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|---|
| Product Foundry coke |
| Shifted tonnage 75,000 tonnes per year, equivalent to 3,000 HGVs |
| Company ThyssenKrupp Metallurgical Products GmbH |
| Motivation for shifting mode Punctuality, better control over the logistics chain, less degradation of the freight |
| Date of modal shift 2010 |
| Route Wałbrzych (Poland) – Duisburg (Germany) |
| Length of route Approx. 900 km |
| Transport company neska intermodal, traction: PKP and TXLogistik |
| Company contact: Frank Holz Director ThyssenKrupp Metallurgical Products GmbH |
| Telephone +49 (0) 201-844 563 971 Fax +49 (0) 201-844 563 970 E-Mail frank.holz@thyssenkrupp.com Internet www.tkmetpro.com |





Passion distinguishes us from the average (SK – AT/PL/MK/RO)

Consideration in relation to the environment is a matter of course for us and that is why we use rail transport as much as possible.

The roots of trademark Heineken date to the 16th century, when Haystack brewery was established right in the heart of Amsterdam in 1592. The year 1864 was important in the brewery history, when young and ambitious Gerard Adriaan Heineken bought the brewery in decline. The discovery of the bottom-fermentation process in 1884 allowed producing crystal clear beer with a long shelf life.

The results of Dr. H. Elion's experiments, a student of Louis Pasteur, went on to cultivate a pure strain of yeast, the Heineken A-yeast, which is the basis of Heineken quality fermentation and, up to this day, is used in all 140 breweries around the world, into which it is regularly transported under stringent transport conditions to maintain the consistent quality of beer. The green five-pointed star label was registered as an official trademark in 1889.

The brewery in Hurbanovo was established on 1st November 1964 and in the year 1967 a malt house was finished. At the end of 1995 a foreign investor, the international brewery concern Heineken, announced its strategic goal to enter the brewery. It successfully applied its investment project and gradually increased production of the former brewery to today's more than 2 million hectolitres per year. Nowadays, the brewery Hurbanovo boasts the most modern and largest malt-house in Central Europe. The total capacity of the malt-house has reached 149.000 tons of malt per year. Part of the produced malt is used in the company's brewery, the greater part is exported.

Heineken Slovakia Company realizes its responsibility towards the society such as, consumers as well as business partners and that is the reason why its internal rules in many areas go beyond the laws of the Slovak Republic. We run a malt-house in Hurbanovo with a total annual ca-



capacity of 149.000 tons. Approximately 20.000 tons are processed in our brewery, the rest is exported. Our customers are breweries of the Heineken concern in Poland, Austria, Hungary, Romania, Bulgaria, Croatia and Macedonia.



In the words of general director Door Plantenga, Heineken Slovakia company as the leader of beer production in Slovakia wants to set an example in agenda of sustainable development. The company considers it as a tool for ensuring a successful and long-term business. „From long experience we know that responsibility in business is one of the factors that influence the buying behaviour of customers. We believe that in the near future consumers in Slovakia will increasingly look for goods that are produced by a responsible company”, says Door Plantenga. Following her words, the companies doing business responsibly consider the impact of their business in the long run. „Investments in reducing the impact of production on the environment or in the social responsibility of firms – considering the amount of investment – are of a long-term character.” „In Heineken Slovakia, however, we believe that it is investment in a green future and that these investments make sense from the point of view of our company as well as from the point of view of inhabitants and the country where we operate,” added D. Plantenga.



Product

Non-roasted malt NHM 1107

Shifted tonnage

600 tons/ 8.000 tons/ 5.000 tons/ 4.500 tons
Equivalent in number of trucks: 24/ 320/ 200/ 172

Company

Heineken Slovakia Company

Motivation for modal shift:

Environmental protection is our priority. We have an integrated pollution control license for the operation of a brewery and malt-house. It is a series of measures aiming at preventing pollution, reducing air, water and soil emissions, reducing waste in order to achieve a high overall level of environmental protection.

Route

Ležajsk in Poland / Miercurea Ciuc in Romania / Skopje in Macedonia / Wieselburg in Austria

Length of route

670/ 914/ 970/ 268 km

Transport companies providing haulage services:

SSK CARGO Slovakia, PKP Poland/ ŽSSK CARGO Slovakia, MÁV CARGO Hungária, CFR MARFA Romania/ ŽSSK CARGO, MÁV CARGO, ZS, CFARYM/ ŽSSK CARGO Slovakia, ÖBB Österreich

Additional information concerning the transportation chain:

Type of wagons Hadgns, sending group of wagons, frequentation: once per month/ type of wagons Uaggs, sending group of wagons, frequency: once in two weeks/ type of wagons Tdgns, sending a whole train, frequency: once a month or in two months/ type of wagons Tdgns, sending a group of wagons, frequency: once a week.

Company contact:

Ing. Judita Konczerová

Telephone +42 135 765 4276

Fax +42 135 765 4146

E-Mail judita.konczerova@heineken.com

Furniture Sanas – Furniture for You (SK – SE)

Wood and iron belong together

Company SANAS, a.s., Sabinov is a traditional Slovak producer of furniture. The company was established in 1955 as Nový domov (New Home), later, in 1990 it changed its name to Sabinovská Nábytkárska Spoločnosť (Sabinov Furniture Company) SANAS production of furniture – for domestic, as well as for foreign markets. Export represents a substantial part of our sales in the long term.

The company has invested mostly into the modernization of machinery and technological equipment with emphasis on environmental protection over the last years. Today, the company has modern, electronically controlled machines on each important technological node, which enables us to achieve a high level of quality of component processing. Referring to this and thanks to progressive work of excellent team of co-workers, the company produces modern furniture for customers with high level of quality, functionality and use property. The company is able to react flexibly to rising demands and needs of customers by innovation of its production program to fulfill its business motto: Furniture Sanas – furniture for you.

SANAS, a.s., Sabinov produces the main part of its production in large series. Modern machinery, technological equipment and electrically controlled machines, enables us to achieve high work productivity and high quality level of our products by using qualitative, environmental-friendly materials under control of professional workers. That enables to apply for new products and so to compete with great European companies; therefore the company will invest in this section.

Approximately 1/3 of the production is produced in the customer production. The customer production has modern machinery, technological equipment and electrically controlled machines, which enables us to produce small series of products, or even piece customer furniture production for equipment of bank interiors, hotels, but also family houses „with immediate entry“ in connection with professional facility of workers productively.

In this section the company can see big potential of services



for customers; therefore it will further develop in the sense of company business motto: FURNITURE SANAS – FURNITURE FOR YOU.

In 2006 the company opened its first retail corporate shop FURNITURE SANAS and thus began to pursue a new trade policy of SANAS, as. company to carry out domestic retail sales of furniture in selected cities throughout Slovakia. The first corporate shop opened right in the company headquarters in Sabinov. On an area of nearly 2.500 m² in the city centre it offers a complete range of furniture.

The company opened its second shop in 2008 in Košice, close to the largest shopping centers Optima and Carrefour. On an area of about 900 m² it offers a complete range of furniture. The company has also opened shops in Žilina and Poprad and is preparing to open other corporate shops.

In the years 2010/2012 SANAS a.s. company carried out a project entitled „Education for higher competitiveness of SANAS, a.s.“ This project is being implemented with the support of the European Social Fund under the Operational Programme Employment and Social Inclusion. The main objective of the project is to improve the quality of services provided by SANAS, a.s. through the development of its human resources in the field of information and communication technologies, as well as the soft skills of the employees. SANAS a.s. company also carried out a project called „The introduction of new, innovative and advanced technology machinery for the production of furniture. „The project is co-financed by the European Regional Development Fund

and aims to introduce new, innovative and advanced technology machinery for the manufacture of furniture for the purpose of innovation and expansion of production capacity. Supply and installation of a new, progressive technological line for the production of furniture will increase the competitiveness of the company.

Motivation for modal shift:

For Sanas, a.s. the environmental protection is a top priority. The use of environment-friendly materials, supervision of a professional team of specially trained personnel and protection of the environment are the guarantee of the company's competitiveness. This involves the use of rail transport, which in accordance with other priorities identified by the company allows us to successfully apply for new products and to compete with major European companies. That is why we will continue to invest in these priority areas and build the company's image clean and saving the environment.

| | |
|--|--|
| Product | furniture and semi-finished products |
| Shifted tonnage | 5 x 50 tons per month Equivalent in number of trucks: 15 trucks |
| Company | SANAS a.s., Sabinov |
| Date of shift to rail | 2009 |
| Route | Sabinov (Slovakia) – Sweden (Älmhult) Via the port of Swinoujscie |
| Length of route | Approx. 1.000 km The entire route of products is provided by rail, it does not include terminals. In the port of SWINOUJSCIE the freight is transhipped to a ferry. |
| Transportation company, that conducts the transport: | ŽSR Cargo |
| Additional information concerning the transportation chain: | Individual shipments in Habbillns type flat wagons |
| Company contact: | Michal Fečko sales manager SANAS, a.s. Sabinov |
| Telephone | +421 905 690 8386 |
| Fax | +421 514 521 427 |
| E-Mail | michal.fecko@sanas.sk |





Opel Southeast Europe Ltd. (HU)

Shifting rail on the road transport – Transport of Opel motor vehicles from Hungary to West-Europe

The roots of the Opel Company have remounted more than a century. More than 110 years undiminished trust in the future and at full stretch for making the experience of the driving more agreeable. The more than 110 years long passionate engineering work has been compacted in three words by our guideline: „Wir leben Autos“ How can be cars produced, that shall excite the people? Passion and receptivity concern the new goals, perfection and responsibility. Through the retention of our values we can be sure that the products and services offered by us will assure real advantages for our customers.

We live for the cars

The Opel Southeast Ltd. deals with the import, storage and delivery (distribution) of the motor vehicles to the dealers. The continuous provision of the spare part supply is connected closely with our activity. Our firm was founded with the trade name Opel Hungary in 1992. The firm has existed with the present day name since 1997 as a regional organisation. These activities are assured in further 21 countries in addition to Hungary.

The services offered at the storage premises; the distribution activity, the operative control, the supervision of the functionality, the damage administration, and the supervision of the customs administration belong all to our main forwarding tasks.

We transport spare parts and complete motor vehicles by the rail. Since 2000, i. e. about since 12 years we have used the railway for our transport operations. The share of the transport by rail has about 20% for the transport to the storage premises. Concerning the regularity of the transport operation we dispatch one train weekly from the various Opel factories to be found throughout Europe. From the far factories



the motor vehicles are transported with mixed transportation modes as e.g. the transport on the road or with ships.

We argue pro and contra

Our arguments for that: the transport on greater distances with single block trains is cheaper than the road transport. But the fact contradicts this that a great volume of goods is not available in many instances and with smaller quantity of goods the transport will not be optimal and the exploitation of the train capacity will be low. On distances shorter than 800–1000 kms the transport will be slower than on the road. The fact gives plenty of headache that the accounting settlement of the damages occurring during the transport by rail is very difficult or impossible subsequently (CIM regulation).



We are satisfied with the railway transport, since it can be said in general that the goods will be damaged upon a fewer number of occasions, as in the case of the road transport. Sometimes the theft or pilferage can cause some problems. But those instances can be followed up and can be stopped.

We have chosen the Hungarian State Railways closed corporation (MÁV). The main cause of our choice is that concerning the competitiveness we see the MÁV to be in a monopolistic position. We have a good partnership connection with the company and we are satisfied with its operation.

In order that the future will arrive to us as well

We believe in the fact that the railway will be developed in the future. The introduction of a computer aided record keeping system would be necessary, the introduction of the tracking for the recording of the motor vehicles according to the chassis numbers is indispensable, as well as a large scale progress and developments shall be achieved in the field of the communication as well. ●



| |
|--|
| Product Complete motor vehicles |
| Shifted tonnage About 12.000 tons per year, which correspond to about 500 trucks |
| Company Opel Southeast Europe Ltd. |
| Motivation for the change of transport Cost saving in the transport, the volume of the production has been increased, the transport charges of the road transport have increased |
| Route Different routes throughout Europe |
| <p>Company contact: Péter Szabados Logistics coordinator</p>  |
| <p>Telephone +36 (23) 446 100 Fax +49 (0) 211-798 4040 E-Mail szabados.peter@opel.hu Internet www.opel.hu</p> |





Pultrans Rail Co. Ltd. (HU)

Short term route, long term perspective

Powdery substance transport from Budapest to Miskolc

The Pultrans Ltd. deals with the transport of powdery substances (cement, alum earth, scale, limestone flour, etc.), wagon exploitation, forwarding activities and leasing either for foreigners or for inland inhabitants. The type of the goods is the unique factor, which can limit the utilization of the rail cars. Only dry powdery substances can be removed from the wagon pneumatically. And therefore the wagons are suitable only for the storage and transport of such types of substances.

Environment protective and secure transport on competitive price

The Pultrans Ltd. transports bulk goods; the transshipment can be resolved more easily than for piece goods. The transport of piece goods and the transport without containers do not exist by rail, since the conveyance of such shipment is very complicated. We have to try for shifting containerized traffic on the rail, It is bewildering that a great part of the industrial goods consists of bulk goods, but the firms are yet optimized for the road transport. Not enough transshipment points and side tracks exist and the firms are not prepared for the reception of the goods transported by rail. In Austria and in Switzerland an enactment has been passed, according to which the newly established plants shall have obligatory side track connections. This could be prescribed in our country by law as well. As a consequence of implementing this law/measure the current, serious hindrances would be eliminated in 50 years, and the rail transport could overtake the road transport.



Using road traffic charge for a sound competition

The tariff means intricacy for us, since the calculation will be a separate task in the case of transport of goods by rail. We shall demand first a bid from the railway company, the use of the rail track shall be paid (this consists of 6 elements), and the traction charge, respectively the charge of the further cargo transport shall be also taken into consideration. We shall add up the fee for the wagon to the sum and the costs connected with them and so a total expenditure will be evolved, which is the basis for making an offer.

In the field of the road transport this is a simpler task. At the Pultrans Ltd. the transport and the cleaning of the wagon can cause some problems. The change of the substances shall be planned in advance. Those expenditures shall be also included in the transport fee.



In the field of the establishment of the side track connections a further development shall be achieved, respectively the conditions of the rail tracks shall be also improved. The development of the TEN corridors is a good direction, but many plants are not located along those corridors. So the products have to get to the corridors at first. We see a solution for this problem, which can be the implementation of a road traffic charge, as it can be seen in the example of Austria and Germany. We would have to introduce a very high road traffic charge, since we are a transit country. The total sum taken should be invested in the railway transport, in order that the tracks and the side tracks could be developed and after a smaller period the traffic should be obligatory shifted from the road on the rail. In my opinion the introduction of the road traffic charge would not mean a dirty trick for the road transport, rather this can promote the establishment of the ideal situation for the competition.



Product

Powdery substance, cement, scale, limestone flour, alum earth

Shifted tonnage

The volume was previously 2 – 300.000 tons/year, at present 0 – 100.000 tons/year;

The number of wagons was formerly 12.000 wagons/year, at present 400 wagons/year

Company

Pultrans Railway Forwarding Ltd.

Route

Inland transport between Budapest and Miskolc

The justification of the changes made

The justification can be the price level of the rail transport. The transport by rail is much safer and there are environmental advantages.

The time of the changes made

About 20 years ago

Other information concerning the supply chain

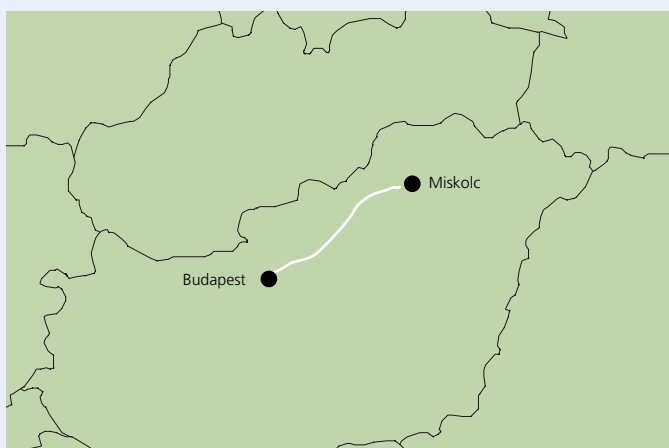
Formerly the transport of goods in single wagons was characteristic for the rail transport, but today the transport is accomplished using unit/block trains, since the transport expenditures are more advantageous.

Company contact:

Dániel Nagy
Commercial and logistic manager



Telephone 06-1-368 9614
Fax 06-1-250 6897
E-Mail nagyd@pultrans.hu
Internet www.pultrans.hu





Elis Pavaje (RO)

Elis Pavaje produces varied assortments of paving materials, flagstones, gutters, culverts, modular concrete fences and masonry components. During the last 20 years, since the company produced the first pavement items, Elis Pavaje has become the main manufacturer on the Romanian pavement market, with 60.000.000 RON (about 14.018.500 Euro) turnover in 2009, providing a production capacity of 8000 m²/day in the two factories located in Petrești-Alba and Stoenеști-Prahova. Elis Pavaje has developed a strong and efficient distribution network at the whole national level, where the use of railway transport plays an important role. Elis Pavaje observes to the most restrictive European regulations on quality and environmental protection, turning the technological development and production modernization into a permanent target.

The quality control, the self-confidence in its production processes and the work team performances allow Elis Pavaje to offer five years full warranty for both its products and performed services.

The number and variety of the projects developed along the time allowed the acquiring of a consistent experience. The know-how and the best practices in using the products according to various destinations, traffic or wearing turned Elis Pavaje in an outstanding consulting partner in pavement technologies.

With each project, Elis Pavaje proves its ability in space design, combining functional and esthetical features. Elis Pavaje does not provide just an efficient space design solution, a good and useful assemblage, but continuously contributes to the environment enrichment, adding value to architecture through its compositions.

Whereas there are public spaces (parking, alleys, parks or commercial areas) or private ones, Elis Pavaje adjusts perfectly to the specific requirements and manages at maximum their utilities.

The closed partnership and the thorough attention paid to the client needs, make just right the recommendations for products selection and assemblage. ●





Freight

Prefab concrete components

Shifted tonnage annually

20.000 tones, equivalent of 990 trucks;
25–32 RGS wagons/train, 1 train/month

Motivation for shifting mode

Punctuality, environmental benefits

Date of modal shift

January 2010

Routes

Sebes – Drobeta Turnu Severin;
Ploiesti – Tulcea; Ploiesti – Vaslui

Length of the routes

430km, 356 km, 262 km

Modal shift premises:

Missing road haulage capacity

Date of the shift to rail:

2011

Rail operators:

SNCFR „CFR Marfă” S.A,
S.C. Grup Feroviar Român S.A.

Company contact:

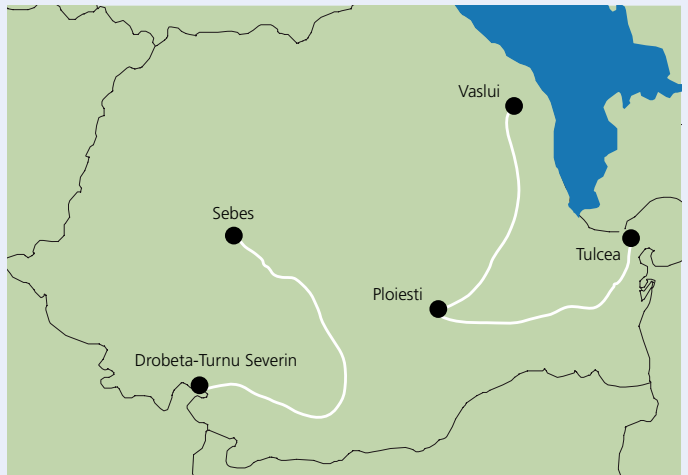
Andronic Suciu

Telephone +40 258 74 36 82

Fax +40 258 74 32 84

E-Mail andronicsuciu@elis.ro

Internet www.elis.ro





Powertrain and Chassis Plant – Dacia Groupe Renault

Power train and Chassis Plant Dacia is manufacturing rough aluminum foundry parts, producing and assembling engines and gear boxes; assembling front and rear axles; welding axles for Dacia series models and for Renault models manufactured worldwide.

The 6 departments of the plant are:

- ▶ Engines Department
- ▶ JH Gearboxes Department
- ▶ TL Gearboxes Department
- ▶ Aluminium Foundry Department
- ▶ Welding and Stamping Department
- ▶ Machining–Assembly–Electrophoresis Department

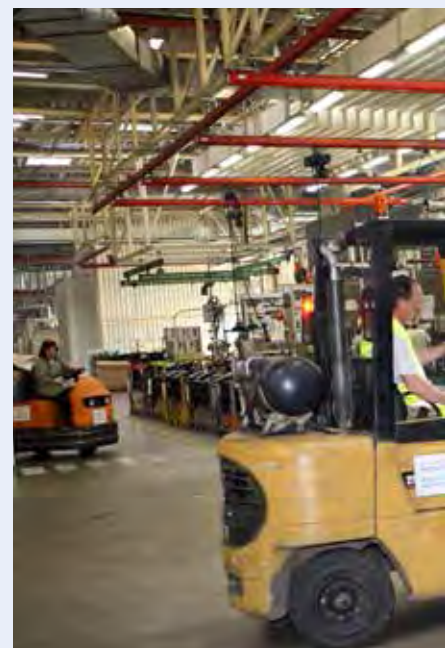
In 2011 Power train and Chassis Plant Dacia manufactured

- ▶ 220.280 engines (gasoline 1,4 l/1,6 l; diesel 1,9 l)
- ▶ 344.003 gearboxes (5 gears)
- ▶ 261.133 TL gearboxes (6 gears), where 72.206 TL8
- ▶ 70.951 transmission shaft
- ▶ 13.534 tonnes of aluminium foundry parts
- ▶ 533.933 front axles
- ▶ 332.126 rear axles
- ▶ 718 690 GMP frames
- ▶ 1.016.106 axles



Dacia Central Logistics Department provides connection between the Commercial Department and the Vehicles Manufacturing Plant.

Dacia Central Logistics Department includes the following departments: Industrial Programming and Planning, Parts and Vehicles Transport, Renault Industrie Roumanie–International Logistics Network (RIR–ILN).



Renault Industrie Roumanie–International Logistics Network was founded in 2005 as an export platform, its mission consisting in supplying Dacia parts to other Renault plants that manufacture various versions of the X90 family. Initially, the Renault Industrie Roumanie activity concentrated in Dacia plant, after a while it was organized in a new location, outside Dacia industrial platform. RIR–ILN manages around 5600 items; parts for manufacturing different vehicle series. The RIR–ILN stays permanently in contact with 461 suppliers, 84 being localized in Romania and 337 abroad (18 external suppliers are dedicated to the import platform).



Product

Aluminium foundry parts for engines and gearboxes manufactured by Dacia

Shifted tonnage annually

29000 tonnes and 10000 containers;
around 62000 trucks

Frequency

Galați – Pitești: 1 train/week,
Pitești – Constanța: 6 trains/week

Routes

Galați – Pitești for raw materials supply
Pitești – Constanța for export vehicles distribution

Length of the routes

341 km, 333 km

Modal shift premises:

Cutting transport costs, increasing the haulage volume, improving the inner processes of the company, increasing transport reliability by avoiding road traffic congestion

Date of shift to rail

2007

Rail operator:

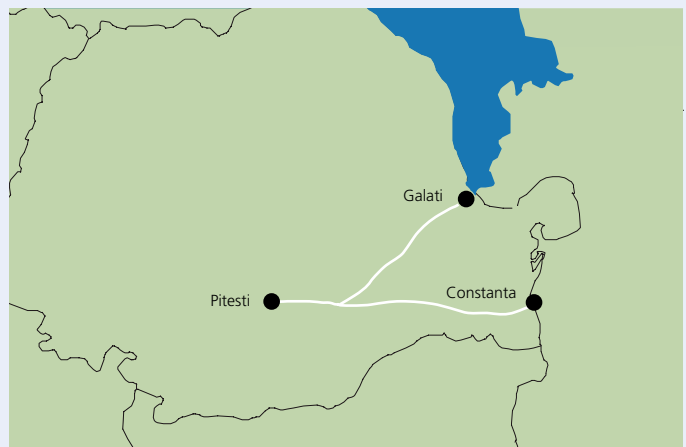
SNCFR „CFR Marfă” S.A,
S.C. Grup Feroviar Român S.A.

Company contact:

Florin Soitaru
Manager of Rail Transport
Department



Telephone / Fax / E-Mail / Internet ?



Institutionalization of stakeholders – a job that pays well



Broad pro-rail alliances

One of the main objectives of the **FLAVIA** project was to promote intermodal freight transports along the corridor. The results and activities were communicated and disseminated through different channels. The awareness for alternative transport solutions has been increased among the target groups, like shippers, operators, public authorities, associations and educational institutions. This proves the successful establishment of pro-rail and terminal alliances along the project corridor.



The transport sector remains Europe's number one climate problem today. Only by shifting more transport volumes onto trains and inland vessels can the transport sector become more environmentally sustainable. The railways are the most environmental-friendly mode of transport, with regard to the use of energy or land, and CO₂ and noxious emissions.

However, the railways are still not sufficiently perceived as an attractive transport alternative. Politicians, industry and individuals have often cut and dried opinions, such as: „the railways are an old-fashioned, ancient means of transport“ or „rail freight is too

inflexible, too expensive, unpunctual“. Rail freight's market share is stagnating at a low level right across Europe, but in comparison with the rest of the world railways have considerable potential for increasing rail freight's market share. Therefore, the strengths and the potential of the railways should be promoted by a broad alliance. This basic idea was the concept for the Pro-Rail Alliance in Germany: to bring civil society organisations and rail sector companies together to collectively form a powerful alliance (www.allianz-pro-schiene.de). Non-government organisations and businesses work jointly to promote and improve transport by rail. This concept was introduced in the **FLAVIA** project. Promising approaches were found within the **FLAVIA** area in Austria, Poland and Romania, between non-profit organisations and representatives from business, publishing and universities to engage jointly in „pro rail“ activities. Several written statements of intent were agreed in these countries to establish such alliances there.

A network of terminals

Rail freight terminals have a central importance for intermodal transports as interface between regional and transnational transports. Next to transport and economic aspects terminals have a key role by increasing the accessibility of regions. This means a competitive advantage for local enterprises. Founding a terminal network would form an intertrade organisation on European level. This organisation would be able to bundle interests of terminal operators. As



well it would be possible to cooperate with other organisations (e.g. Alliance pro Rail). For reaching these goals a first kick off meeting happened at Budapest on 14th February 2013. Approximately 20 logistics service providers and terminal operators followed the invitation. The presentations and discussions have shown there is a very high potential in the cooperation of terminal operators. In consequence ten terminal operators signed a letter of intent „Foundation of a **FLAVIA** Terminal Alliance”. Afterwards also a second operator from Germany signed the LOI. The first official „**FLAVIA** Terminal Alliance” meeting will happen in autumn 2013.

Catching the stakeholders interest

During the three years of the **FLAVIA** project the partners took the chance to introduce the project to the target groups, as transport operators, public authorities and shippers on local, regional and national levels. The overall aim of the dissemination activities was to promote environmental-friendly transport modes and their efficient use in practice. Especially, the presented modal shift examples raise the public awareness for rail freight and inland waterway transports.

On national level the **FLAVIA** partnership arranged various regional workshops to reach directly the public authorities of each country. Within the workshops national foci were defined as well as the expectations from the project. But also transport operators and shippers were addressed through various fair appearances (Transport Logistic 2011 in Munich, Germany; INFRATRANS 2011 in Bucharest, Romania; Österreichischer Logistiktag 2012 in Linz, Austria). Most of the **FLAVIA** events were embedded in the **FLAVIA**

Road Show along the corridor. All twenty-one stops were used to disseminate and communicate the results of the project. The impact of the **FLAVIA** project was supported by national press articles, scientific papers, newsletters, press releases and lectures.



Preparing investments – getting ready for the future

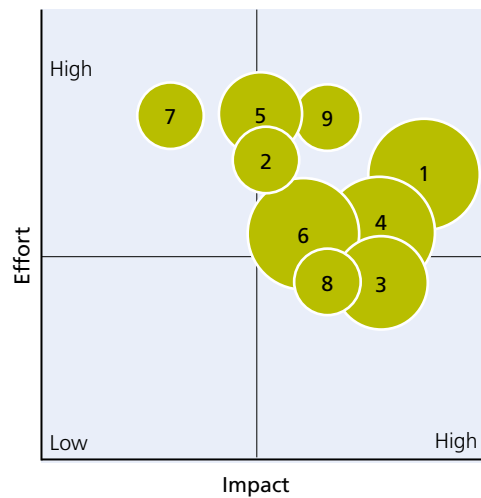
Presenting best practice examples from shippers and establishing cooperative structures among the stakeholders are two instruments to push rail freight and inland waterway transports. The **FLAVIA** project used an additional instrument – the preparation of pre-feasibility studies. Rail, inland waterway and terminal concepts were prepared which shall help to set up new transport offers along the corridor.

Green logistics ante portas

Obviously, the reorganisation of logistics to Green Logistics will be relevant for the strategic competitiveness of a transport company. Until now, different levels of the Green Logistics approach can be found within the **FLAVIA** countries. To foster the greening of logistics among the **FLAVIA** countries measures like support for combined transport, common standards and transparency for customers shall be preferred (see graphic below).

From missing to working freight trains

The transport network of a freight corridor determines its transport performance to a large extent. A qualitative high infrastructure enables the fast exchange of goods and hence fosters the trade relations between countries. But only a capable infrastructure is not enough. A competitive transport market with various transport offers and services is required to put a transport corridor into operation. But currently, the offered transport services along the **FLAVIA** corridor do not meet the expectations of freight shippers. This applies mainly for the rail freight transport.



TOP9 measures to support „Green Logistics“ sustainably

The shipper says: „Offer a train and I will provide the volume“. The operator says: „Give me sufficient volumes and I provide a train service“. Obviously, an information and understanding gap has to be closed. To support the „gap-closing“ the **FLAVIA** project developed a broad range of transnational train concepts which show that new train services are economic relevant and implantable.

Freight nodes can make it better

A vital transport network does not only consist of rails, waterways and roads. The nodes in a network also determine the quality and capacity of the whole transport system. Intermodal terminals and freight villages are important interfaces between the transport modes.

Only with a few exceptions, the freight terminals in the **FLAVIA** corridor have not a satisfactory service level – a need for action which was covered by the project. Therefore, six case studies about terminal development and cooperation were carried out and discussed with stakeholders. The case studies show that the implementation of new open-access terminal capacities should be supported by public authorities. Specifically, the service at the terminals should have a performance which is competitive to road haulage in terms of transport cost and transit time. One study provides a success story about the development of a new intermodal connection from the GVZ Dresden (DE). Also other terminals in Kobylnica (PL), the BILK Terminal (HU), Constanta Harbour Terminal (RO) and the Slovakian terminals TKD Bratislava and TKD Dobrá have been analysed to increase the service

quality of the terminals and the accessibility of the regions in the corridor.

Waterways – the sleeping beauties

At the moment, the inland waterway transport (IWW) is not used to its full potential – large volumes of goods are shifted to the road because customers are more and more interested in Just-In-Time delivery. Furthermore, traditional



IWW affine goods like liquids and bulk only play a minor role within the large transnational supply chains today. But the **FLAVIA** case studies prove that more complex products are also feasible for the IWW transport when containerizing them. Especially, the Danube offers the possibility to operate transnational transports along the corridor. The goal for the next years is to increase the commercial attractiveness of the rivers as an alternative mode of transport. The main bottlenecks and the development potential for new services on the Danube, Váh, Elbe and Vltava have to be analysed carefully and discussed by both market actors and administrations.

| BUSINESS | ASSOCIATIONS | POLITICS |
|--|--------------|----------|
| Political cooperation and support | | |
| coordinated linkage of both transport networks | | |
| harmonising legal regulations | | |
| reduction of trade and transport barriers | | |
| Common projects, technical assistance | | |
| Developing reliable transport services between the corridor | | |
| Developing reliable transport services between the corridors | | |

A logistics corridor doesn't end at a seashore – The FLAVIA extension vision

The **FLAVIA** corridor connects Central Europe with South-east Europe but also with the Black Sea region. The countries around the Black Sea e.g. Turkey and around the Caspian Sea e.g. Kazakhstan and Azerbaijan become more and more important for the trade and transport relations of the European Union. Therefore, the **FLAVIA** project initiated a multilateral discussion and information process to link both regions more efficiently in the future.

Transport flows between Central Europe and Southeast Europe are not solely inner-corridor flows. Hence, the development of the **FLAVIA** corridor depends not only on the inner-corridor connections, but on the quality of links to its eastern neighbours. This linkage is a future opportunity for the **FLAVIA** corridor. Therefore, the extension of the **FLAVIA** corridor towards the TRACECA corridor has been analyzed and discussed with representatives from businesses, associations and political institutions. For that reason discussion sessions were arranged and information events were organized in Potsdam, Odessa, Istanbul and Budapest. Main tendencies for a successful extension of the corridor are:

- ▶ To achieve competitiveness in price and time, rail operators, multimodal service providers and public authorities have to set jointly transport development plans
- ▶ The establishment of common operational standards (e.g. cross border procedures, custom clearance) and flexible logistics concepts will play a major role
- ▶ The generation of sufficient freight transport volume, the bundling of freight flows volumes and the development of regular block trains are key elements for a sufficient rail transport
- ▶ The connection of Central Europe and TRACECA via the **FLAVIA** corridor is a good alternative to competing corridors

The results and activities of the **FLAVIA** project underlined the huge potential of the corridor in future. The corridor will play an important role as a transport link between Europe and Asia. Emerging economies in the Middle East and Central Asia will use the corridor as transit to Central Europe. But also the improvement of the inner-corridor logistics will help to integrate better the new European member states and those who might follow.



Technische Hochschule Wildau [FH]
 Bahnhofstraße | 15745 Wildau
 T: +49 3375 508 924 | F: +49 3375 508 983
 herbert.sonntag@th-wildau.de | www.th-wildau.de



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Editor: Th Wildau, Bahnhofstraße, 15745 Wildau, T: +49 3375 508 924, herbert.sonntag@th-wildau.de, www.th-wildau.de
 r.a.t.t.p.l. Prof. Herbert Sonntag
 Editorial team: Conrad Schmidt, Bertram Meimbresse, FLAVIA Project Partners
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