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dpl sets packing record

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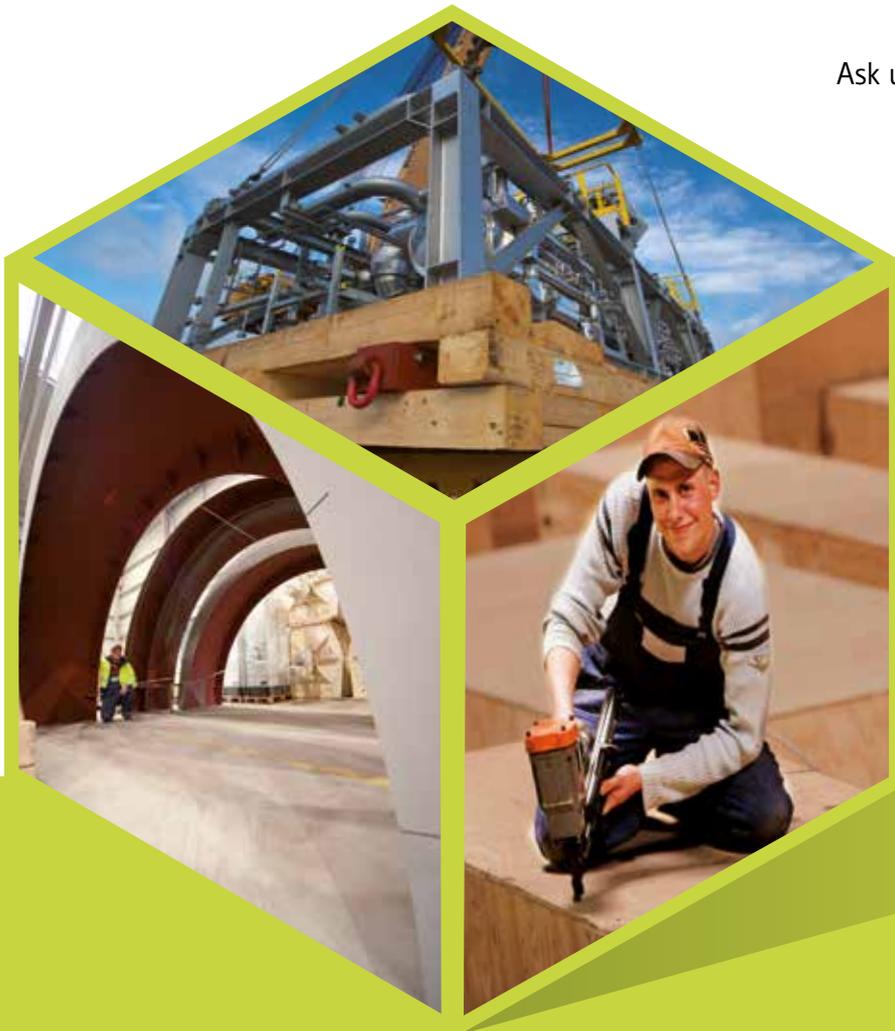
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Double-digit growth expected in combined transport

Despite a decline in economic growth and the noticeable effects of international crises on the transport and logistics markets, 2014 as a whole is turning out to be the best year in duisport's history. According to Erich Staake, Chief Executive Officer of Duisburger Hafen AG, the most important key figures are expected to indicate significant growth.

8 Project NANSHAN

dpl sets packing record

With the help of duisport packing logistics, the largest drop forging press ever manufactured in Germany with a pressing power of 50,000 tons has set off for China. The company has thereby set a new record as a packing service provider for Siempelkamp, the Krefeld-based mechanical engineering company.

12 New rail connection between Duisburg – Bettembourg

logport III links Scandinavia with Southern and Western Europe

The combined rail terminal logport III in Duisburg is increasingly becoming a hub with its own Europe-wide network. This September, a new combined transport line has now been opened between Duisburg and Bettembourg (Luxembourg).

16 Lowering CO² emissions

EU research project NEWS develops an innovative ship type

Under the auspices of the Fraunhofer Institute in Vienna, European research institutions and practitioners are working on the development of the next generation of innovative inland water vessels. Research is being conducted on how the European waterway system can be used more extensively and organized more attractively for freight transport.

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Double-digit growth expected in combined transport

duisport heading towards another record year in 2014

Growth in container handling: The expansion of Duisburg container terminals logport I and logport III follows an overall concept of the duisport Group intended to create conditions for further growth. This will allow the company to further consolidate its position as the largest container handling facility in the hinterland of the seaports.

(dii) For duisport, despite the downturn in economic growth and international crises with noticeable effects on the transport and logistics markets, the best result in the company's history is becoming apparent for 2014 as a whole. "We are expecting the most important key figures to indicate significant growth and we will be able to continue to improve on last year's results in terms of the total volume of goods handled, combined transport activities, and financial figures," anticipates Erich Staake, Chief Executive Officer of Duisburger Hafen AG.

In container handling, the duisport Group expects to outperform the record result of the previous year, even increasing it between 10% to 12%. In the months from January up to and including September, over 2.56 million TEU were handled by the traffic carriers ship, rail, and truck. "We currently assume that the duisport Group will successfully surpass last year's result of 3 million TEU and

pass beyond the 3.3 million TEU mark by the end of the year," Staake reports.

Above-average growth in inland waterway transport

Besides the further increase in the volume of rail traffic, an especially pleasing trend is the strong growth seen in the inland waterway transport sector, which has experienced an above-average increase in comparison with preceding years. The most important driver of growth continues to be combined transport, which now constitutes 50% of all goods handled. "This is also the result of our continuous investments in new handling technology. The DIT terminal has received its third railway crane in 2014, and two gantry cranes have been installed in logport III over the course of the second expansion phase, which opens up new potential for growth for the terminal devoted to intercontinental combined transport", Staake emphasizes. The terminals of the Duisburg

site on the left and right banks of the Rhine each have 10 high-performance container bridges, which can register constantly rising utilization thanks to the relocation of financially strong users such as Audi and VW, but also due to the expansion of the existing logistics facilities. "As in previous years, our growth is based above all on the handling volume generated on site and the development of new Continental European relations in rail transport, such as to Turkey, to Scandinavia or to China," Staake reports.

New growth with fossil fuels

Despite the negative consequences of the energy transition with the systematic subsidization of renewable energies, increasingly at the expense of fossil energy carriers, duisport was able to stabilize the cargo handling volume in this area. "Last year's takeover of the coal complex has set the stage for further growth in the area of bulk cargo transshipment. The positive developments

over the past few months have shown that the complex is one of Europe's most modern facilities and very competitive," Staake explains. On October 17, Duisburger Hafen AG and HMS Bergbau AG Coal Division (HMS) entered into a long-term partnership for the further development of the coal complex. Together with duisport, HMS will construct and operate a coal handling facility that can also be used for classifying and mixing coal. The facility is slated to go into operation in the spring of 2015. The total investment volume is more than € 10 million. Erich Staake: "With HMS we have acquired a well-known company and ensured that the entire area of the coal complex will return to full utilization within a short time period."

Project and packing logistics growing with the customers

But duisport was also able to make important inroads in other segments of bulk and general cargo transport by opening up new markets and acquiring new customers. Packing and bulk cargo logistics achieved stable development despite the unsatisfactory market situation for machine and plant builders, restrained economic development in the export industry, and declining economic growth in China. A fiercer price competition was noticeable, however. "This year too, we have been able to expand our industry services network. We have continued to strengthen our market presence in Southern Germany and are now active over a wide regional and geographical area for the mechanical engineering industry and plant construction industry. Thanks to our own packing and logistics activities in major seaports such as Rotterdam, Antwerp, and Hamburg, as well as in India and China, we can offer qualified support for our customers' international projects. Because we're there for our customers on site with our project logistics experts, we are involved in the internal planning process from the start and can work together with our customers' project managers to develop and implement optimal solutions," Staake emphasizes.

Growth from relocation projects

Once again, the inland port of Duisburg has achieved a higher rate of growth than the European seaports in 2014. "The reasons for this development lies in the fact that we are constantly generating our own new volumes from our relocation projects, such as logport I, II, and III, while tapping into new growth opportunities independently of maritime traffic with our Continental European rail traffic. And we will continue to strengthen the devel-

the foundations for further growth in the years to come," declares Staake.

Duisburg: a hub for the automotive industry

"With the relocation of the automotive industry, we also set an important trend for NRW as an industrial location: Opel closes in Bochum, Audi and VW open in Duisburg. And Ford uses the direct rail line from Duisburg to China for the distribution of its automobile components.



In October 2014, Duisburger Hafen AG and HMS Bergbau AG Coal Division (HMS) entered into a long-term partnership for the further development of the coal complex. With this further expansion, Duisburg's coal complex will be able to handle up to 500,000 tons of additional coal per year as of spring 2015.

opment of both market segments in the future, as well," Staake announces. Several new projects are in the pipeline and will be presented to the public before the end of the year. "Besides the rapid growth of logport III, other drivers of what has become another satisfactory increase in combined transport volumes in 2014 are the increased utilization of the CKD logistics center of Audi AG and the startup of a comparable VW facility. With investments in our existing terminals in logport I and III and the start of the marketing of attractive sites such as logport IV in Kamp-Lintfort, we are laying

It was only possible to link the sophisticated automotive logistics to the Duisburg site by means of intelligent processes and innovative logistics chains," reports Staake. "A large number of well-known automotive suppliers are based in the Siegerland, the Sauerland, Westphalia, and the Rhineland, and are profiting from this development, which international automotive logistics companies have also prepared themselves for by setting up their own offices in Duisburg." The weekly train connections between China and Duisburg, which until now have been suffering from a lack



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of return cargo, are now used to transport finished cars from German premium German manufacturers in containers in the opposite direction.

The problem child of infrastructure development

The development of the national infrastructure is a matter of concern for the boss of the Port of Duisburg. Despite unanimous decisions by the federal states as to the implementation of the recommendations of the Bodewig commission, precious little of this has made its way into the coalition agreement and the expenditure planning of the federal government newly elected in 2013. According to Staake, the infrastructure continues to be worn down, and the public investment quota has been decreasing for years.

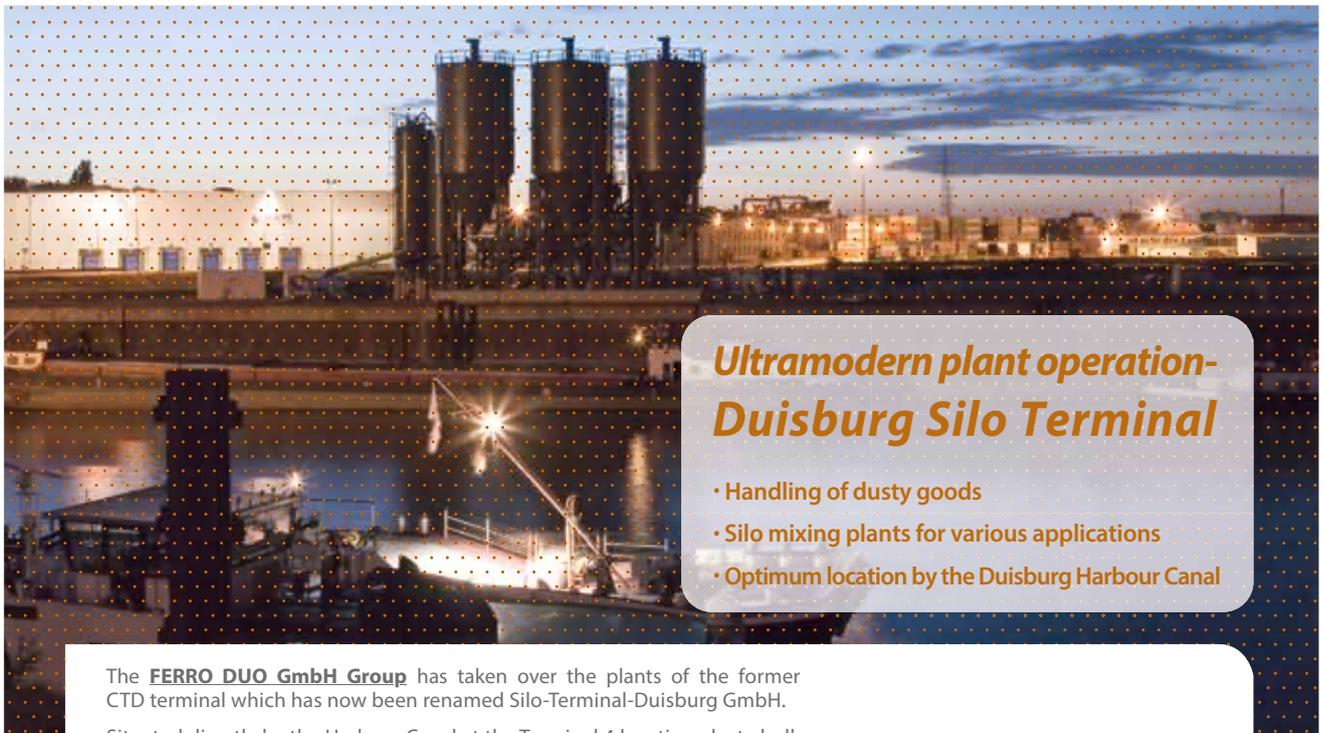
“If not now, when will be able to risk a change of direction? There has never been a more favorable moment in the history of the Federal Republic of Germany for making investments. The interest rates are tending towards zero,

there is sufficient liquidity in financial markets, and the government coalition enjoys a broad majority for adopting the necessary decisions,” Staake points out. The sea and inland terminals, Staake continues, have been quite successful for years in implementing policy demands for shifting traffic from the road to the rail and inland waterways. “However, the image of Germany’s infrastructure is characterized by dilapidated street and rail bridges and hydraulic structures requiring rehabilitation. While the German industry is currently making investments in new projects, it is also dependent on the available infrastructure. If we continue as before, we will have difficulties in remaining competitive in the European market will become increasingly worse,” Staake is convinced. “As far as infrastructure issues are concerned, it’s not a problem of awareness that we have, but a problem of implementation. Fast and courageous political decisions are required!”

Steady growth in competition

Despite adverse framework conditions,

Staake reports that Duisport was able to register healthy growth for 2014, with the company in stable condition. “We will have to work every day to maintain a steady market position in the competition in the future, as well. We have to analyze markets again and again, recognize new opportunities, and exploit them for our company with sensible investments. In order to open up further potential and to allow it to grow organically from our own business, we need qualified employees with intermodal ways of thinking,” Staake is convinced. However, Staake continues, such employees are hard to find in the job market, as there is a lack of intermodal education on all levels. For this reason, Duisport will continue to rely on the qualified education and further training of its employees in the future. “The general principle of our development in the future is ‘quality before quantity.’ Competition plays a decisive role in this, as it spurs us on to new achievements and prevents us from becoming complacent,” Staake concludes.



*Ultramodern plant operation-
Duisburg Silo Terminal*

- Handling of dusty goods
- Silo mixing plants for various applications
- Optimum location by the Duisburg Harbour Canal

The **FERRO DUO GmbH Group** has taken over the plants of the former CTD terminal which has now been renamed Silo-Terminal-Duisburg GmbH.

Situated directly by the Harbour Canal at the Terminal 4 location, dusty bulk materials continue to be handled in the existing silo mixing plants for all industrial and technical applications.

The Ferro Duo Group here contributes **many years of know-how** regarding bulk goods and their handling.

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German car manufacturers take the fast train to China



German cars right before their secure loading on the train.

(/b) During his visit to the Port of Duisburg at the end of March, the Chinese President Xi Jinping expressed his hope of increasing overland exports to China. Since then, interest in rail connections between the Port of Duisburg and China has grown considerably. The German automotive industry in particular intends to make increased use of Duisburg rail services to China.

The Port of Duisburg is the point of departure and destination of a number of transcontinental train connections to China. With Chongqing and Duisburg, two of the most important logistics hubs in China and Central Europe are now linked by railway on a regular basis. Until earlier this year, train utilization from China to Duisburg was higher than vice versa. This has now changed. On August 11, the loading of finished automobiles from German premium manufacturers for overland export to China began for the first time. On the Duisburg Terminal DIT, the vehicles were securely loaded in containers on a train that set out on its 16-day journey to Chongqing on August 14. In the future, this train will transport finished products to China on a week-

ly basis. This means that a total of four trains per week will travel between Duisburg and China.

„Without a doubt, the visit of the Chinese President contributed to the increased demand for train connections from Duisburg to China. I’m confident that we can be successful in further increasing the train frequency to one departure per day by the end of the year,“ says Erich Staake, Chief Executive Officer of Duisburger Hafen AG.

An important contribution was thereby made to the development of this train system when the loading of finished products from German car manufacturers began on the Duisburg Terminal DIT. The train connections are more than twice as fast in comparison to sea transport and thus offer a competitive advantage to shipping companies. During the visit of the Chinese President at the end of March, Chinese Commerce Minister Gao Hucheng and Erich Staake stressed their support for the expansion of the train system. „As a starting point and destination of the train, the Port of Duisburg plays a decisive role in the movement

of goods between Germany and China. We will continue to further develop this connection with our German partners,“ emphasized Gao Hucheng in his speech on the logport grounds.

The trans-continental train connections were developed by Trans Eurasia Logistics (TEL), a Joint Venture founded in 2008 by the German DB AG and the Russian railways authority, RZD. The successful marketing and improved capacity utilization of trains on the outward journey to China are the result of close cooperation between TEL, DIT, and Duisport agency, a subsidiary of Duisburger Hafen AG.



dpl sets packing record

As the packing service provider for the Krefeld-based mechanical engineering company Siempelkamp, dpl achieved a packing record in the spring with the packing of a drop forging press with a pressing power of 50,000 tons.

(gran) In spring 2014, with the help of the Duisport Group, the largest metal forming press ever built in Germany made its way to China: a drop forging press with a pressing power of 50,000 tons.

“We were the packing service provider for the Krefeld-based mechanical engineering company Siempelkamp, which built this drop forging press with a pressing power of 50,000 tons commissioned by China’s Nanshan Group,” reports Christian Trapp, Project Manager and Manager of Technical Services at Duisport packing logistics GmbH, the packing subsidiary of Duisburger Hafen AG. The project, which also includes a second smaller press with a pressing power of 12,500 tons, is not only the most spectacular heavy part transport in the 130-year history of the Siempelkamp Group: It is also the largest heavy cargo packing project of dpl to date.

Dismantled accordingly, the two presses were shipped in three lots. With the first delivery in May, 26 machine components with unit weights ranging between 89 and 287 tons already left the Siempelkamp

works in Krefeld. Two further partial deliveries of similar proportions followed, meaning that a total of about 20,000 freight tons and 150 containers were sent from Krefeld via the port in Longkou, China to the customer’s construction site. A total of 90 heavy parts with unit weights of 20 to 280 tons were transported – and they all had to be packed.

For Siempelkamp, the reason why Nanshan awarded the contract to Germany is obvious: “The decisive factor was our convincing concept for this extraordinarily large press,” says Hans W. Fechner, Spokesman of the Management Board. “We supply the entire plant from one source – from its design to the casting and machining of the cast parts to its assembly and on-site commissioning.” According to Fechner, Siempelkamp is the only manufacturer of presses of this size in the world to offer its customers such a scope of services.

Close coordination

Trapp describes the project as seen by dpl: “We were closely integrated as early as in the project planning phase.” This is

because the coordination and exchange of information between all involved, from the manufacturer to the packer to the transporter, is the alpha and omega of such a project. The initial details for a packing solution are worked out in this phase. Trapp: “We must have detailed knowledge, for example, of the transport procedure: What vehicles are to be used and what will handling and intermediate storage look like? Every detail is important for finding the ideal packing solution.” However, Trapp continues, Siempelkamp and dpl are an experienced team – the mechanical engineering company from Krefeld is a long-time customer. Later, the packing team even sat down and talked with designers to think about possible modifications to the product that could facilitate the transport and handling of the heavy parts. “The technology of the components, packaging, and transport must be perfectly coordinated,” as Trapp believes, who is a mechanical engineer himself. With the first design drawings in hand, dpl set about designing the packaging and transport racks for the individual components using CAD technology.

“From the moment the first package is set for production, everything depends on strict compliance with deadlines,” Trapp emphasizes. dpl usually begins with this directly after the workbench. In the Siempelkamp works in Krefeld, up to ten of his employees exclusively focused on this over the course of the nine-week project. “We have to work properly so that no deadlines in the supply chain are put in danger, let alone operations in the works obstructed,” explains Trapp. For this reason, employees do not work according to a time clock.

Self-designed racks

The packing process itself is complex. Mechanically machined component surfaces, for example, are protected using special foils and custom-fit wood linings. Some parts are also packed in boxes for heavy cargo. The most important thing, however, is the design of special transport racks – made from both steel and wood, and required for the components to be moved and transported at all. “This is why we plan and design the racks ourselves,” Trapp explains. dpl packed a total of 65 heavy lift parts with a total weight of 8,000 tons. That corresponds to an average weight of about 125 tons per package. The weight of the packaging material alone totaled 260 tons, of which 115 tons were wood and 145 tons steel constructions.

The Logistics Department of Siempelkamp then organized and coordinated the mammoth transport. “For our team, the project meant hard logistics work,” says Ronald Hammerbeck, Logistics Manager at Siempelkamp. “The dimensions of the individual com-



The project, which also includes a second smaller press with a pressing power of 12,500 tons, is the most spectacular heavy part transport in history of the Siempelkamp Group.

ponents and the heavy weights posed extraordinary challenges and required a very long planning phase.” And the coordination with all the partners and the customer had to be perfectly harmonized. After all, the new presses must be ready to go into operation at the agreed deadline in the early summer of 2015.

All components with a weight exceeding 200 tons were first brought into position for dispatch using a self-propelled modular transporter so that the heavy cargo truck could be loaded and exit the production hall. The heavy cargo specialist Bohnet GmbH was commissioned with the transport. The towing and push-back vehicles of its special low loaders are each powered with 680 HP and together

weigh a total of 70 tons. To these are added trailers (50 tons) for the press part to be transported (up to 287 tons), thereby yielding a maximum total weight of the transporters of over 400 tons. For the sake of comparison: An unloaded Airbus A380 Type 800 only weighs 275 tons.

The press parts were transported from the Krefeld works to the handling terminal in the port of Krefeld-Uerdingen, where they were loaded onto barges by a 400 ton crawler crane and other lifting equipment. Two days later, the heavy freight was loaded onto a maritime vessel in the Port of Antwerp. Parts from suppliers and press components that were already in storage in the seaport were also added for delivery. Overall, three partial deliveries of a comparable scale were shipped – not to mention the 150 sea containers with accessories, tools, and assembly equipment. Once they left Krefeld, the components ultimately required 65 days to reach the customer’s construction site in China. The start of the assembly of the presses was in the summer.

As part of the Nanshan Group, Nanshan Aluminum is based in Longkou in Shandong Province. Since it was founded in 1978, the company has developed into one of the largest aluminum processing companies in China. It is currently investing in the production of forged parts from aluminum and titanium alloys for the aviation industry and is erecting a forge on a greenfield site.



Thanks to the good cooperation between Siempelkamp and dpl, the job was carried out perfectly.



© Nor Lines

Reduced sulfur limits for maritime vessels to change cargo flows in the North and Baltic seas

The Norwegian feeder shipping company Nor Lines will deploy the first LNG vessels in container transport between the North Sea and the Baltic Sea in October 2014. The 112 meter-long and 20.8 meter-wide ships have a loading capacity of 3,600 tons at a draft of 5,5 meters and are powered by 3,940 kilowatt Bergen gas engines from Rolls Royce.

(*du*) The countdown is on: As of January 1, 2015, in accordance with the stipulation by the International Maritime Organization (IMO), the diesel engines of all maritime vessels in the Baltic Sea, the North Sea, and the English Channel must either be operated with fuels whose sulfur content does not exceed 0.1% or be fitted with exhaust aftertreatment systems that keep the emission of sulfur oxides down to the accepted level. The decision, which was passed six years ago, will result in sensitive cost increases in maritime ship operations, which in turn will bring about a structural shift of transport volumes from waterway to road carriers.

The sulfur content in marine fuels is currently fixed worldwide at 3.5% and is to be lowered to 0.5% in 2020. On a regional level, the limit of 0.1 percent by weight of sulfur in fuel already decided on in 2008 will enter into force as of the beginning of 2015 in the SECA's, i.e. the sulfur emission control areas. Moreover, this IMO rule applies not only to new vessels, but also to all maritime vessels already in service. The following technical alternatives result for shipping companies operating in the SECA shipping areas for compliance with the future limits for ship operations:

- Switching engine operation from heavy fuel oil to gas oil: The simplest solution,

but due to the considerably higher price of the fuel, a rather expensive solution: Heavy fuel oil costs about 600, gas oil 900 dollars per ton.

- By installing exhaust gas scrubbers in the exhaust gas routing, the engines can also continue to be operated with affordable heavy fuel oil, but this is an expensive measure that also entails a disposal problem.
- Switching engine operation from heavy fuel oil to liquefied natural gas (LNG): While reliable LNG technology and engines are available, they require high investments for the conversion of the engines and the on-board infrastructure. Currently, the main problem remains supplying LNG: Norway's seaports and ferry ports have no nationwide infrastructure, Sweden has individual bunker stations, and only tanker-based supply is currently possible in the most important ports of the North and Baltic seas, although the construction of fixed bunker stations is in preparation.

Deciding on a particular system is a highly complex process: It implies many unknown variables that are highly difficult to assess for those involved. Without long-term practical testing, many shipping companies trust scrubber technology just as little as the option of converting to LNG-powered engines. Whatever solution

a shipping company settles for, the modernization or conversion of vessels entails high investment costs, and operation with gas oil raises fuel costs by 50% – ship operations are going to become considerably more expensive in the SECA's in the future.

This will have a significant impact on the hinterland logistics of the seaports. Very Large Container Ships with 10,000 TEU and over, for which retrofitting with scrubbers is almost entirely unfeasible for technical and cost reasons, will avoid long routes in SECA areas in the future, preferring the North Sea ports of Antwerp and Rotterdam to Hamburg.

“Due to its favorable geographic location, the comparatively short travel distances with more costly gas oil, and the ideal handling conditions for mega carriers and feeders, the introduction of low-sulfur fuels in the North and Baltic seas set for 2015 will offer clear competitive advantages to our terminal in JadeWeserPort, Wilhelmshaven. And in this regard too, I think the prospects are good that the role originally intended for this location of becoming Germany's most important transshipment port may come true after all,” anticipates EUROGATE Managing Director Emanuel Schiffer.

The terminal operators in Bremerhaven and Hamburg also look forward to a strong upturn in container transshipment starting in 2015. However, tight constraints are set on growth, and the handling problems at the Hamburg container terminals that have persisted for months are an indication of this. The procurement of larger container bridges would indeed satisfy the requirements for handling container ships with up to 18,000 TEU. However, due to the failure of terminal areas to grow accordingly, serious difficulties arise in coping with the rapidly increasing container lots per ship handled, which have risen from 4,000 to 7,000 TEU, now reaching figures of 11,000 TEU and more. With incalculable waiting times, those who suffer are not only the container truckers, who in Hamburg also

have to face the added inconvenience of construction work on the Köhlbrand Bridge and the Elbe Tunnel, but also rail and inland waterway transport. But the railway lines to the hinterland – such as the bottleneck Bremen – also suffer from capacity constraints.

The cost risk of the new sulfur limits are essentially borne by the feeder and ferry ships operating in the North and Baltic seas. What is clear is that strong price increases are required to offset the rising operating costs – regardless of what technical solution is selected in individual cases.

In addition to the much anticipated shift of traffic flows from waterways to roads,

new opportunities in combined transport by rail and inland waterways will also open up. In order to exploit this potential, not only do new handling facilities have to be created in the seaports for both traffic carriers, but also capacity enlargements in Continental European rail networks. “For this to happen, projects such as the Iron Rhine, whose execution has been debated for decades, finally have to become decided at a policy level and put into practice. The continuation of the Betuwe line into Germany also requires an accelerated completion. Only if we seriously tackle the creation of a Continental European rail freight network can we prevent the disproportionate growth of truck transport,” explains Erich Staake, Chief Executive Officer of Duisburger Hafen AG.

515 ton converter consignment to Trinidad and Tobago

IPS successfully completes heavy cargo transport



515 ton heavy cargo transport – thanks to its integrated service approach, IPS successfully ensured the efficient loading of the converter.

(lw) As a global project logistics service provider with a focus on the mechanical and plant engineering sector, IPS (Integrated Project Services) GmbH carried out its largest single shipment to date in spring 2014.

More than ever, global project logistics poses complex challenges for customers and service providers – and for joint cooperation, coordination, and communication. Service providers are therefore not only selected on the basis of the services they offer, but also the way they render them. IPS GmbH, a joint venture of duisport and Ferrostaal which has been active in this market for just over a year, relies above all on exact planning to ensure smooth, on-time delivery processes and maximum performance in multimodal project logistics.

Top priorities of IPS are, in particular, international cargo flows and the development and control of major international projects. The most recent example of project logistics implementation was the transport of a 515 ton converter. In the spring, IPS successfully completed its largest single shipment to date with the loading of the converter, the central component of an ammonia plant which will produce up to 2,000 tons a day, for shipment to Point Lisas in Trinidad and Tobago.

Smooth workflow over entire supply chain

IPS was equally responsible for initial transport by special vehicle and inland waterway vessel and for direct ship-to-ship loading onto a chartered heavy-

duty cargo ship in Rotterdam. Thanks to detailed planning, constant monitoring, and information management for everyone involved in the project, the project logistics service provider successfully ensured that site planning stayed on schedule. “With an individual weight of 515 tons, this project was the largest heavy cargo consignment to date for IPS,” explained Stefan Hütten, Managing Director of IPS, and Project Manager Uwe Warnke. “Our integrated service approach, which allows us to manage operations over the entire transport chain in a highly efficient way, also proved to be a success. The converter reached the target construction site in Trinidad on May 31, 2014 and thus within the allocated timeframe, making this a flagship project for the nationally and internationally rendered individual solutions of IPS.

In addition to complex projects with a variety of heavy and special transports from different international suppliers, the company also offers innovative concepts for transshipment and storage. It also organizes urgently required spare parts deliveries by on-board courier. Thanks to the global organizational structure with air, land, and sea freight resources, the company has “turnkey” solutions for project logistics and heavy cargo transport available worldwide. Based on a global network, IPS plans, organizes, coordinates, monitors, and documents multimodal transport concepts for plant components or complete plants – from the production site to the final construction site. The service range of the company also includes purely advisory services.

logport III connects Scandinavia with southern and western Europe



A CFL multimodal combination train leaves the Bettembourg container terminal.

(dü) The combined transport terminal logport III in Duisburg-Hohenbudberg, which went into service at the beginning of 2013, is increasingly becoming a hub location with its own network for continental European traffic. Following the opening of the GreenBridge multimodal rail connection between Duisburg and Trieste (Italy), and another ship connection to Istanbul (Turkey) at the beginning of January 2014, a new rail-combination line between Duisburg and Bettembourg (Luxembourg) with connections to Lyon (France) and Le Boulou (Spain) was opened in September.

The new connection links the intermodal network of CFL multimodal in Luxembourg (with connections to Spain and France) to the Samskip multimodal network in Scandinavian countries via the logport III hub. To this end, CFL multimodal is working together with ECL and Samskip Van Dieren, which are responsible for the traction of the high-frequency shuttle connections from Duisburg to Lübeck, into the Swedish cities of Helsingborg, Nässjö, Älmhult, Katrineholm and Göteborg, and into Hoje Taastrup (Denmark).

The start of this new traffic concept was also made possible by the start-up of the new rail crane at logport III, which went into full operation in the middle of August. A second crane of the same type will follow by the end of 2014. This expansion in capacity is intended to accommodate the increased demand and additional rail traffic at logport III.

“Since the commissioning of logport III at the beginning of 2013, the quantity of handled cargo has risen continuously, especially thanks to our main customer Samskip Van Dieren Multimodal,” says Erich Staake, Chief Executive Officer of Duisburger Hafen AG, who is pleased with the positive growth of the intermodal terminal in Duisburg-Hohenbudberg. “At the same time, other customers are also making increased use of our terminal.”

To cite an example, a Belgian rail operator now runs three trains per week from logport III to Novara, Italy. Lübeck is serviced by a German rail operator out of logport III with six trains per week. Added to these are numerous customers based at Chempark Krefeld-Uerdingen,

such as Lanxess, which are handled by duisport agency, a subsidiary of Duisburger Hafen AG. “The enhanced rail services are resulting in the continuous transfer of traffic to rail, thereby reducing road traffic by thousands of trucks,” says a pleased Staake.

CFL multimodal

CFL multimodal, a subsidiary of the Luxembourg state-owned railway CFL and the leading provider of multimodal goods transportation in Luxembourg, is a new partner in logport III. The company has more than 30 years of experience in intermodal transport and, in cooperation with its sister company CFL cargo, offers regular long-distance connections through the Bettembourg terminal to ports on the North Sea and the Baltic Sea as well as to southern Europe.

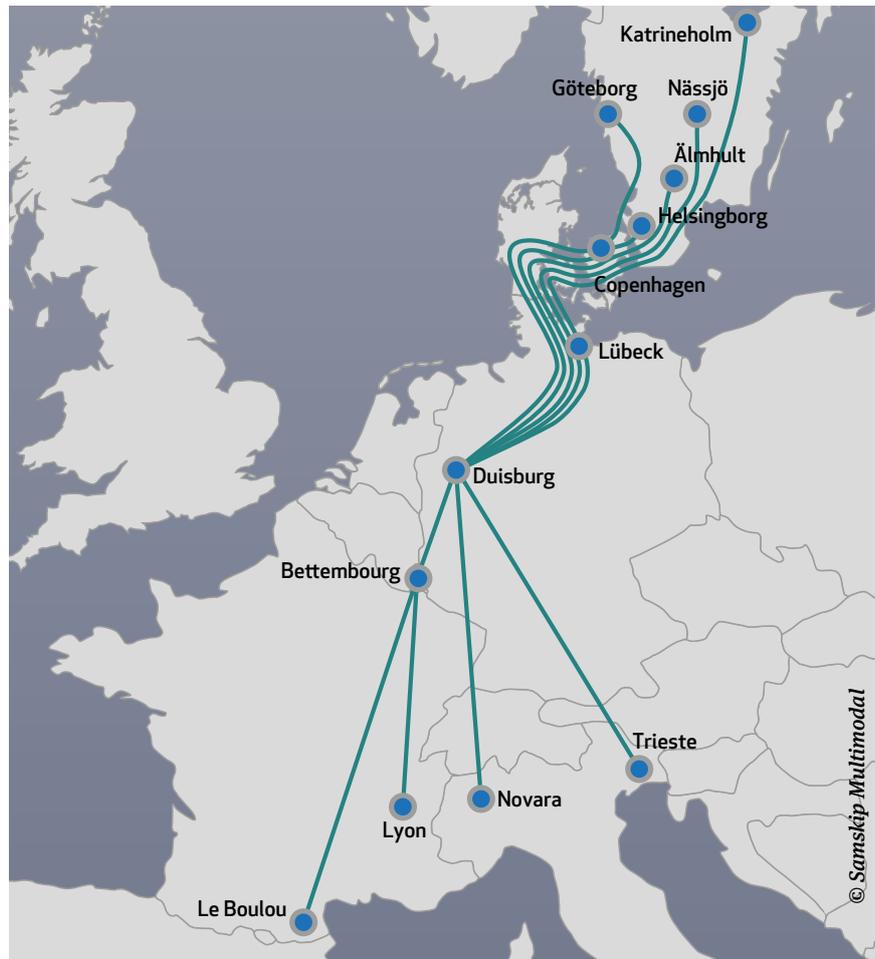
The new rail connection between the terminals Bettembourg and Hohenbudberg replaces the currently offered direct train to Lübeck. The Duisburg train is now running consistently three times a week in both directions, with a capacity utilization of more than 70 percent. The trains, with CFL cargo responsible for traction,

can transport containers, semitrailers and road semitrailers that can be handled with cranes. Bettembourg offers direct access to four daily intermodal connections to Le Boulou on the Spanish border to France, and three weekly connections to Lyon, one of the leading economic regions in France. “The intermodal line between the CFL terminal in Bettembourg and the PEH terminal in Lyon, which was commissioned at the end of June 2014, received a very good response in the market, and will run six times a week as of January thanks to the additional demand from Duisburg,” says Eric Lambert, Director of Intermodal Transport at CFL.

Linking economic regions

“This new direct connection between Scandinavia, France and Spain has fulfilled a long-standing dream of linking these dynamic European economic regions with a reliable transport connection. In the future, transportation in this corridor will not be standing in rush hour traffic on the road, but will rather benefit from very rapid intermodal connections by train,” says Johan Logtenberg, Managing Director of Samskip Van Dieren Multimodal. Similarly, Henk van Dieren, the CEO of the company, is also pleased with the success of the strategic partnership with CFL multimodal: “This is the first time that multimodal transport has become a reality across Europe from the North Cape to Gibraltar, through the hub in logport III.”

Just as welcome is the development of the intermodal connection GreenBridge Multimodal between Scandinavia, Germany and Turkey through the Duisburg-Hohenbudberg hub, which



logport III in Duisburg-Hohenbudberg is increasingly becoming a hub location with its own Europe-wide network.

started nine months ago. This joint project between Multimodal B.V. and Intercombi (ICL) Transport, a subsidiary of the leading Turkish logistics provider NETLOG Logistics Group, offers three weekly block train connections between logport III and the port of Trieste in Italy, which maintains RoRo service into Turkey six times per week via maritime vessel.

Recognized advantages

“In recent months, loaders in Scandinavia, Germany and Turkey, which transport freight in both directions, have recognized the advantages of this efficient and reliable multimodal connection as compared to the risky trans-European road truck traffic. They have converted their transports into 13.6 meter long meta trailers and 45 foot containers for intermodal rail-sea traffic,” says Gert-Jan Meijer, GreenBridge Manager of Multimodal Services – Turkey Trade.

“Our trains are now running at 80 percent capacity in both directions, so that we will gradually implement our plan to increase the service to six times a week starting in January 2015.”



The start of this traffic concept was made possible by the start-up of the new rail crane at logport III in the middle of August.

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duisport client trip 2014 to Vienna

The Vienna and Duisburg locations were presented by (left to right): Heimo Pascher, Karin Zipperer, Erich Staake and Jürgen Helten.

(dü) With culture and charm in abundance and a high quality of life, the Austrian capital Vienna is not only one of the most beautiful cities in the world, but can also – thanks to its location at the intersection of important transport routes and its status as an important Danube port – look back to a long tradition as a trade and transshipment center. With strong investments in the logistics center of the Port of Vienna and the construction of a new multifunctional terminal for combined cargo traffic on the greenfield site just outside the city limits, Vienna is preparing itself for its future role as a logistics hub and link between Central and Southeast Europe. Reasons enough for organizing the duisport customer journey to the Danube metropolis from August 27 to 29, 2014.

Vienna is not only the capital of Austria, but also one of the nine Austrian states. With over 1.7 million residents, Vienna is the most populous city in Austria. About 2.6 million people live in greater Vienna – that corresponds to about a fourth of the total population of Austria.

Rhine-Main-Danube waterway connects Duisburg and Vienna

The Rhine-Main-Danube waterway con-

nects the North Sea with the Black Sea, making it one of the most important traffic arteries in Europe. At the center of this main thoroughfare, the Port of Vienna (Wiener Hafen) is positioning itself as a logistics service provider for trade, production, and transport companies. The Managing Director of Wiener Hafen GmbH & Co KG, Karin Zipperer, greeted the 25-strong delegation from Duisburg and presented Wiener Hafen Group as one of Austria's largest trimodal freight traffic centers: „Wiener Hafen considers itself to be a reliable partner for logistics companies in Eastern Austria. In this regard, developing common solutions in the interest of our customers is just as important to us as ensuring the sustainability of Vienna as a logistics center.“

In the cargo terminals Lobau (oil port), Albern (grain, steel, and heavy cargo) and Freudenu (general cargo, bulk cargo, containers, and vehicles), Wiener Hafen Group has grounds totaling over 300 ha with 5 km of wharfage used to handle 8 million tons of cargo, 483,115 standard containers (TEU), and 58,000 vehicles in 2013. On top of that, the Group generated revenues of € 53 million, investing € 5 million in the renovation and development of the port facilities. A total of

45% of the cargo is transported by rail, 35% by road, and 20% by inland waterway. A multiannual investment program is currently underway to generate new transshipment capacities by the partial filling-up of the Freudenu port. With a capacity set to be increased to 1 million TEU by 2020, the container terminal will benefit from this most of all besides the car terminal. „With these investments, we are making sure that we will continue to be an effective partner for the Port of Duisburg in the future,“ concludes Karin Zipperer.

Duisburg-Vienna combined rail connections dominate the exchange of goods

As usual, the trip was also used as an opportunity to present the Port of Duisburg and the companies active there. This task was shared by the Chief Executive Officer of Duisburger Hafen AG, Erich Staake, and Jürgen Helten, Managing Director of Imperial Shipping Services GmbH. Over 40 leading representatives of Austrian and international logistics companies also came to the conference hotel. Staake pointed out the long-standing business relations between the two leading European logistics hubs, especially in combined rail transport. „Following the development of the first

combined rail connections in cooperation with Wiener Lokalbahnen ten years ago, the combined operators Hupac and IFB now operate six weekly connections between Duisburg and the Port of Vienna in both directions – and the Hupac services are set to be extended to eight times per week starting in the fall,“ Staake emphasized in Vienna. The Duisburg DUSS terminal, Staake continued, is linked to the ÖBB terminal in Wels with a connection running ten times per week, and additional connections passing through Vienna to Hungary and Turkey are in development. „In view of the apparent increased integration of container terminals on the Mediterranean and the Black Sea into combined traffic flows in Continental Europe, I see good opportunities for Vienna to develop into an important hub in Southern Europe,“ Staake anticipates.

Development opportunities in inland waterway transport

Imperial Shipping Services Managing Director Jürgen Helten drew attention to the fact that a number of shipping companies based in Duisburg are pursuing their own models for developing growth markets on the Main-Danube waterway

by means of inland waterway transport. In 2008, for example, the Imperial Group took over the controlling interest in the Vienna-based Multinaut DonauLogistik GmbH, which now has its own subsidiaries in Regensburg, Würzburg, and Duisburg. Helten also reported that 35 multifunctional motor cargo ships with cargo capacities of 1,000 and 2,000 tons are currently in use between the ports at the mouth of the Rhine and the Port of Constanța on the Black Sea. Moreover, Imperial has relocated the pusher tug Herkules X and state-of-the-art pusher barges with new hatch decks from the Rhine to the lower Danube to develop new loading potential for the group of companies. That was also the purpose of the interest acquired in 2012 in the shipping company Rubyships in Ruse, Bulgaria. „Of course there is still considerable improvement potential on the Danube, not only in the expansion of the infrastructure, but also in the adaptation of loading and unloading conditions at the ports to typical Northern European standards. However, I see good opportunities in the medium term for linking economic regions in Germany and Austria to the Danube delta via inland waterway transport,“ Helten concluded.

The following presentation of the project NEWS by Heimo Pascher of Fraunhofer Austria Research GmbH in Vienna indicated how new avenues were also being explored with innovative ship technology to „circumnavigate“ special problems posed by navigating the Danube at high and low water levels. In close cooperation with scientists from the University of Duisburg-Essen and TU Dortmund University, a novel type of ship powered by LNG and electricity is in development, which is to deal with low bridge heights using ballast tanks and develop new transport potential in combined traffic as well as vehicle transport.

A tour of Vienna by Fiacre, historical streetcar, and ship not only gave everyone a chance to get to know the beauty of this richly historical metropolis, but also enough time for bilateral talks. The reactions on the part of the German visitors, who were obviously impressed by the charm of the city and its people and the investments in state-of-the-art infrastructure visible everywhere, were entirely positive.

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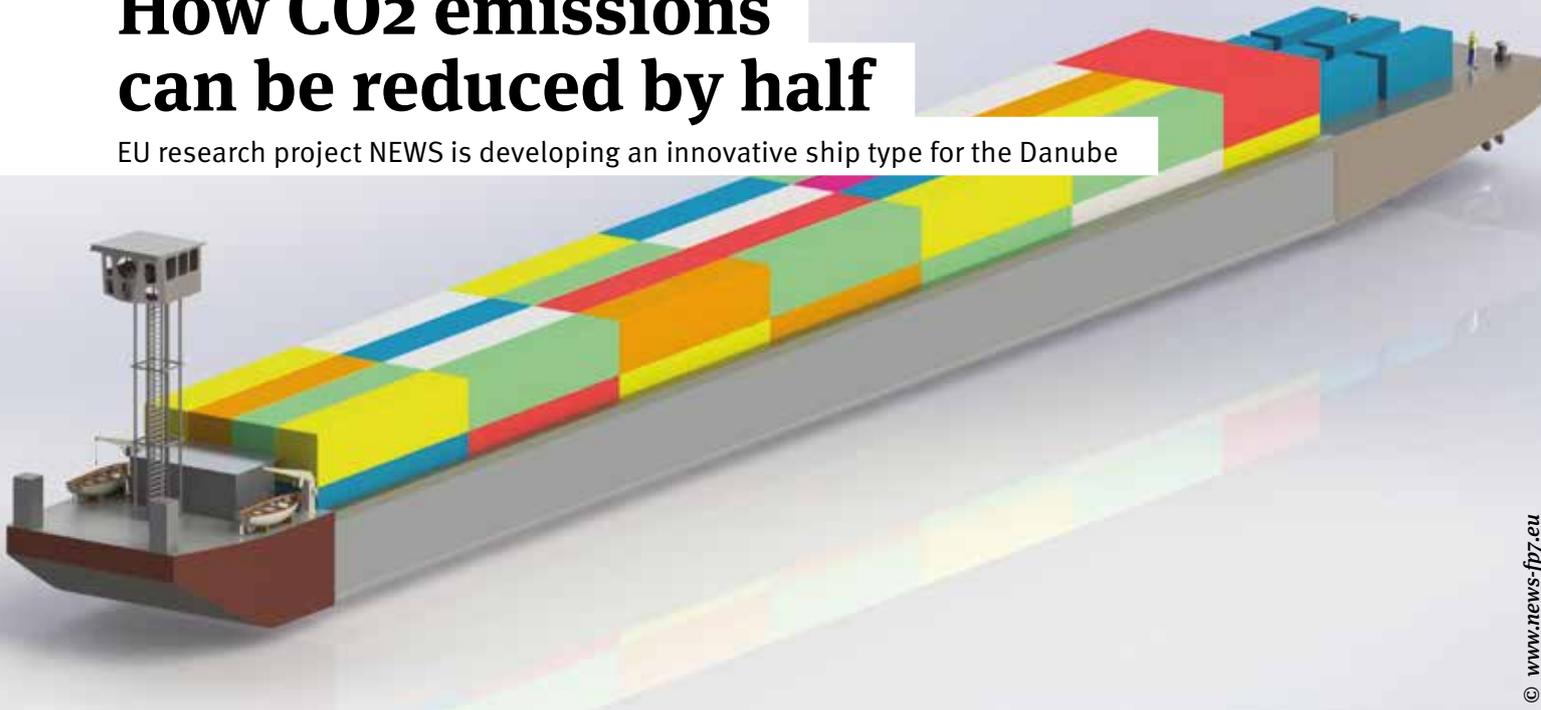
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How CO₂ emissions can be reduced by half

EU research project NEWS is developing an innovative ship type for the Danube



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With an empty immersion depth of 100 centimeters and a ballast water tank of 800 cubic meters, the NEWS inland water vessel offers new transportation alternatives both for low and high tide in the Rhine-Main-Danube transportation network.

(di) Some European rivers, such as the Rhine, are already used heavily for the transport of goods. But in many areas this potential has not been fully exploited yet – for example on the Danube. Therefore, European research institutions and practitioners, under the leadership of the Fraunhofer-Institut in Vienna, are working on the development of the next generation of innovative inland water vessels – with a focus on the second-longest river in Europe.

Optimized logistics chains are a key factor when it comes to maintaining or increasing the competitiveness of a company. Fraunhofer Austria is considered a true expert in this field: The institute has a lot of experience in designing and optimizing the transport logistics of companies, and has developed the relevant concepts in line with numerous research and industry projects. Fraunhofer's know-how is now used as part of the NEWS (Next Generation European Inland Waterway Ship and logistics system) research project.

As part of NEWS, the scientists from Fraunhofer Austria, under the consortium leadership of the Technical University of Vienna, are working with other European corporate and research partners to investigate how the European inland waterways system may be used

more extensively and made more attractive for the transportation of goods. In this context, it is shown that rivers can be an ecologically and economically promising alternative and addition to rail and road transportation with the use of more efficient and environmentally-friendly ships as well as intelligently planned transportation chains.

Optimization of fleet and logistics structures

NEWS combines technical and logistics innovations to address the cross-border challenges for multimodal transportation chains, with a focus on reducing costs and emissions and also on increasing reliability (available shipping days). The results of the NEWS research project to date: an innovative and tech-

nically verified ship concept, a logistics concept that defines the optimum area of application, as well as a financial and business plan. The project started at the beginning of March 2013, and is slated to end in August 2015. The budget for the project is EUR 2.2 million, with 80 percent of the costs covered by grants.

Lower CO₂ emissions and costs – Increase transport capacity and available shipping days

The concept demonstrates that an optimized hull alone will lower the ship's energy requirements by approximately eight percent compared to a conventional large motor ship. The plan also provides for a more energy-efficient gas-electrical drive system, which is operated with the relatively environ-

Data for NEWS ship concept	
Length	110 m
Width	11.44 m
Empty immersion depth	1.00 m
Max. draft	3.53 m
Capacity	156 TEU in three layers
Ballast tank	800 cbm
Power unit	4 Gensets Gas electric (LNG)
Output	2 x 290 kW & 2 x 230 kW
Propeller	2 x L type Azimuth, Ø 1.50 m
Load	Container, vehicles, bulk cargo, project load

mentally-friendly LNG fuel. This would allow for additional savings of more than 20 percent. In total, this could reduce energy consumption by up to 30 percent. Optimized design, efficient propulsion and alternative fuels: this three-pronged approach also benefits the environment. CO₂ emissions can be reduced by more than 50 percent.

The number of available shipping days is another key factor for profitability. Therefore, NEWS wants to address this issue as well. The research team has designed an active ballast tank that can be filled with the help of pumps for passing low

Definition of new container lines for ARA and Black Sea ports

Macroeconomic analyses make up another part of this project. They are used for flow of goods analyses of containerized goods and for the identification of regions that offer the highest potential for NEWS. The upper Danube between Hungary and southern Germany has been identified as the region with the largest flows of goods. The lower Danube (Serbia and western Romania) is growing and attracting increasing interest. As part of a status quo analysis of transportation chains, the research partners have identified companies that are

NEWS is coordinated by the Technical University of Vienna, Institute for Management Sciences. This international consortium consists of four universities and research institutions as well as facilities from five European countries:

- Technical University Vienna, Fraunhofer-Institut / Austria
- University of Duisburg-Essen, Department of Economic Geography, esp. Traffic and Transport Logistics / Germany
- TU Dortmund, Institute for Transport Logistics / Germany
- University Novi Sad, Technical faculty / Serbia
- Kühne + Nagel Euroshipping GmbH / Germany
- Regional Development Agency of the West Region Romania
- Lindenau Maritime Engineering & Projecting / Germany
- Intermodal Concepts & Management AG / Switzerland



To lower CO₂ emissions and costs as well as increasing the transport capacity and available shipping days is the aim of the project.

bridges. By using 800 cubic meters of ballast water, draft can be increased by up to 0.8 meters.

The NEWS shipping concept is also available as a car carrier. Up to 360 cars, such as the Audi A1, can be transported on four levels. This corresponds to an increased transport capacity of approximately 56 percent, compared to the MS Heilbronn.

able to transfer their logistics activities into the waterways. Such analyses take a close look at factors such as transportation periods, CO₂ emissions or costs. Scenarios are used to transfer existing transportation chains from rail or road into the waterways, and relevant parameters such as transportation costs are calculated for the respective routes. Advantages and disadvantages are highlighted and discussed with the

companies. On the basis of this data, two container line services to Rotterdam and Constanța on the Black Sea will be defined by the end of December 2014, for which concrete business plans will subsequently be developed.

The waterway was also analyzed with the help of status quo analyses – for example with a view to the height of the bridges and the average water levels on the Rhine-Main-Danube axis. This process involved the development of a bridge calculation tool, which analyzes the pass-through height of all bridges along the Danube and adjoining waterway systems for ships with different loading conditions. The suitability of a route for shipping is subsequently tested depending on the load and the ship type. The average number of eligible shipping days for a route can thus be determined. More information: www.news-fp7.eu

Best practice in the Rhine-Alpine Corridor



(tof) Considerable political lobbying is expected of Stefan Wendel, Managing Director of the Corridor organization Corridor Rhine-Alpine, which was founded in 2008 by the infrastructure companies of the Corridor. In the name of the infrastructure managers ProRail (NL), Infrabel (B), DB Netze (D), SBB (CH), BLS Netz (CH), and RFI (I), the Corridor has been offering its own one-stop shops (OSS) since mid-January 2013 – “cargo priority routes” for the 2015 schedule. “This didn’t exist in this form before,” says Wendel. Cargo priority routes have the advantage that they are protected and can be occupied prior to the creation of a timetable. “Cargo has priority on the rails here,” Wendel emphasizes. This hasn’t changed his cross-border EU mission at all, however: “Railway transport in this key European corridor must become more competitive.”

That this is a task of Herculean dimensions is obvious in view of the Corridor objectives. Reliability and capacity are to be increased by 30% on the rail axis of the Corridor, transport times and costs lowered by 30%. This approach is known by experts as the “3 x 30” rule. Formerly referred to as the Rotterdam-Genua Corridor, the Rhine-Alpine Corridor is to hold its own against direct competition by truck and inland waterway transport.

A total of € 40 billion is to be invested in the Corridor by 2025. The money is to be provided by the participating countries, i.e. Belgium, the Netherlands, Germany, Switzerland, and Italy, as well as the European Union. About half of the investments have been made so far.

The Betuwe line based in the Netherlands offers one concrete example of how things should be done: It costs five billion Euros, has already been equipped with the European Rail Traffic Management System ERTMS, and has been in operation since 2007. The European Rail Traffic Management System is based on a uniform standard for ensuring interoperability in cross-border rail freight. Wendel: “According to EU guidelines, ERTMS should be a reality in the core European network by 2030 at the latest.”

The Netherlands and Switzerland will equip their corridor routes with ERTMS by the end of 2015. The neighboring countries Germany and Italy will only be able to partially equip their corridor sections by that time. Even after 2015, therefore, the trains will continue to require national systems on board when they travel across borders. The business can thus only become truly competitive when all countries have undertaken ERTMS implementation. “The com-

plete installation of ERTMS in the German and Italian sections is still to come. The exact time is still vague,” confirms Wendel. The Belgian corridor section, however, is set to be equipped with ERTMS by 2020.

The Dutch did the pioneering work in this regard. And that applies not only to ERTMS. The roughly 170 kilometer Betuwe line is used exclusively for freight traffic – a first. Operated by its own infrastructure company (Keyrail), the Dutch rail axis can therefore be regarded as a best practice. Over 500 trains per week use the new line between Rotterdam to the hinterland towns of Emmerich and Oberhausen.

Delay a cause for uncertainty

However, disillusionment has taken hold in Germany. On the roughly 182 kilometer, geostrategically important Karlsruhe-Basel railway line, the expansion of capacity from two to four rails which had been decided upon has ground to a halt. A spokesperson for DB Projektbau has recently admitted that the scheduled completion would probably be pushed from 2020 to 2029.

This delay is a cause for uncertainty – especially in Switzerland, which originally assumed that the completion of the project would coincide with that of

the New Railway Link through the Alps (NRLA) through Gotthard and Ceneri. The Gotthard Base Tunnel (to open at the end of 2016, a year earlier than planned) and the Ceneri Base Tunnel (to open at the end of 2019) are the two centerpieces of the NRLA. Alp Gotthard Transit AG, which commissioned both projects, expects the total costs to reach approximately € 10 billion. The two construction projects thus fall below the maximum budget of € 10.7 billion approved by the Swiss Parliament in 2008. Remarkable.

The Swiss rail experts assume that the commissioning of the two base tunnels would cut the route length running through Switzerland by 30 kilometers (minus 10% relative to the Basel-Chiasso/Luino route). That corresponds to a travel time reduction of 60 minutes (minus 17%). At the same time, this is expected to lower operating costs (minus 30%) and personnel costs for railway companies (minus 35%), as well as energy costs (minus 10%). The Swiss Federal Office of Transport (FOT) foresees an average reduction of transport costs of 9% (if the cited savings are allocated to all consignments in unaccompanied intermodal traffic via Gotthard, editor's note.).

Such equations have borne out the "3 x 30" goals. "But what good is a cathedral in the desert," wonders Bernhard Kunz, Director of Hupac, the leading Swiss intermodal operator. In view of the delays already mentioned (on the German side) and the well-known lack of financial means (on the Italian side), he deems the project goals, the associated competitiveness of rail transport, and the relocation



Stefan Wendel, *Gesellschaft Corridor Rhine-Alpine*.

policy being pursued (and that with success in Switzerland) to be in jeopardy.

Short transportation routes in the hinterland

Wendel pragmatically points out the € 20 million in investment funds still outstanding and diplomatically diverts attention to another Swiss precision project: the Lötschberg Base Tunnel. This is the third NRLA base tunnel after Gotthard and Ceneri – and already in operation on the Lötschberg-Simplon rail axis. Since December 2007, up to 60 freight trains per day have been passing through the 34.6 kilometer, € 3.5 billion tunnel at an average utilization rate of 80%, "at peak times even 100%," reports the FOT. For

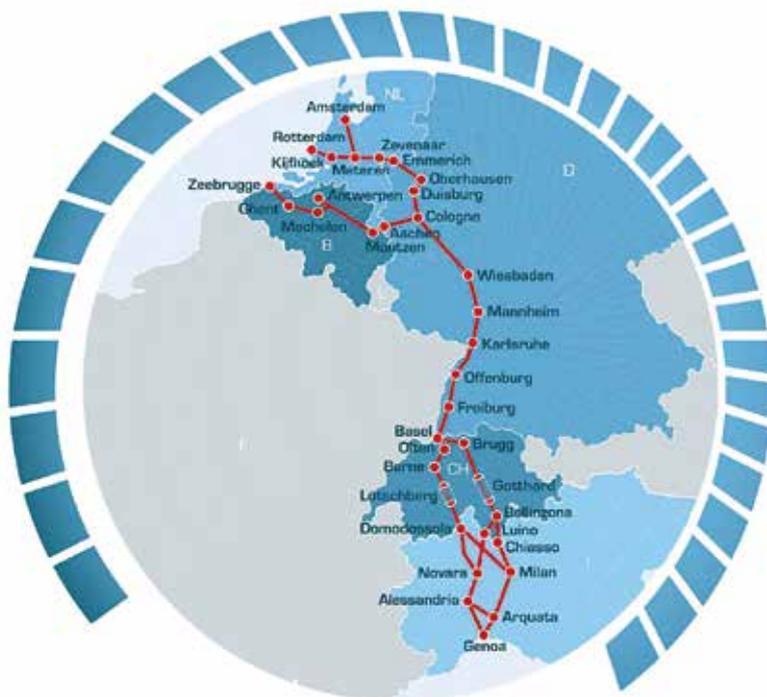
A strong connection

The Rhine-Alpine Corridor links the strongest economic regions in Europe. Roughly 70 million people live in its catchment area, about 700 million tons of cargo are transported. That corresponds to about 50% of North-South rail freight traffic. The Corridor organization Corridor Rhine-Alpine is funded by the EU and focuses especially on ensuring interoperability in cross-border rail freight, terminals, and rail infrastructure, as well as the achievement of compatible standards in international rail transport in general. Managing Director Stefan Wendel lists some of the possibilities: "This may include the coordination of schedules and processes at borders, quality management, or the issue of 740 meter trains."

cost reasons, however, only a third of the Lötschberg tunnel can be operated with two tracks at the moment – but an additional expansion is possible.

At the end of 2014, i.e. before the completion of the Gotthard Base Tunnel, the Liefkenshoek Connection in Antwerp will make its contribution to the efficiency of rail freight on the Rhine-Alpine Corridor. With a depth of 40 meters under the Scheldt, it is about 6.8 kilometers long and is expected to shorten transportation routes and times in hinterland transport. The 9.4 kilometer Katzberg Tunnel to the north of Basel, which went into operation in December 2012 as the largest new line on the Karlsruhe-Basel rail axis, is also part of the Rhine-Alpine Corridor.

Railway experts all agree on one thing: The freight volume on the Rhine-Alpine Corridor will continue to increase until 2020 – despite all the economic downturns. Forecasts assume a figure of 59 billion ton kilometers (2005: 28 billion ton kilometers). Six seaports, ten inland ports, and over 100 intermodal terminals are connected together by a rail network with a total length of 900 kilometers. These conditions harbor impressive potential for growth. Moreover, the promise made by the seaports, with Rotterdam at the forefront, also applies: Europe's largest port intends to grow by at least 50% by 2030. Europe's number two, Antwerp, is targeting 100% growth in the same period. Rotterdam wants to increase its share of rail transport to 20%, Antwerp to 15% by 2030. However, inland waterway transport, which currently already boasts a 50% market share, is expected to be the big winner – and to replace road transport as the most important transport carrier in the Rhine-Alpine Corridor.



Route of the corridor.

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Research project LoFIP – Logistics Future Internet Platform



(jfr/as) Reliable and resource-efficient logistics processes represent a significant challenge for logistics. This also includes the cross-company optimization of logistics processes through the networking of different logistics partners. This is where the LoFIP (Logistics Future Internet Platform) research project comes in with forward-looking technologies of the Future Internet.

The LoFIP project was initiated on August 1, 2011 under the direction of the University of Duisburg-Essen in order to support logistics processes through the development of Future Internet technologies. The project is promoted by the North-Rhine Westphalia Ministry of Innovation, Science, and Research and by the European Union in the scope of the Objective 2 program “Regional Competitiveness and Employment.”

Other economic partners of this joint project besides Duisport include SAP AG and the SimulationsDienstleistungsZentrum (SDZ). Deutsche Post AG is an associated partner, and the research partner is the University of Duisburg-Essen with Paluno – the Ruhr Institute for Software Technology and the Chair of Transportation Systems and Logistics. In addition, the RWTH Aachen is also participating with the

Deutsche Post Chair for the Optimization of Distribution Networks.

The technologies developed in the scope of the research project are intended to support business processes (Internet of Services) and to monitor physical processes and material flows (Internet of Things). The objective is to develop a platform for sustainable and resource-efficient operative logistics processes. At the heart of the project are federated, software-based control centers which combine current material flows and available services. “We are convinced that Future Internet technologies can make an important contribution to increasing efficiency. For logistics as an economic sector, this means increasing reliability, but also reducing costs and CO₂. Erich Staake, Chief Executive Officer of Duisburger Hafen AG, explains the company’s participation in the project: “Cooperation in the LoFIP research project will allow us to identify possible applications of Future Internet technologies in the Duisport Group.”

At first, two applications were developed, which were largely based on the experiences of the two partners in practice, Duisport and Deutsche Post AG. These were to illustrate the complexity of operative logistics processes.

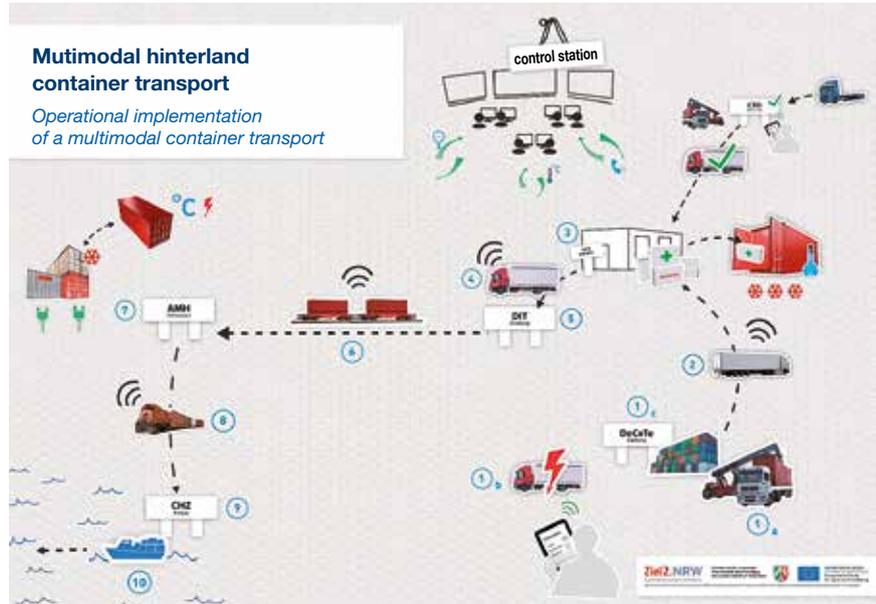
Concrete meaning of federated Future Internet control centers for multimodal container transport

The first application describes multimodal hinterland container transport. It considers the operative transport chain from the acceptance of an empty container to loading on the part of the shipper to the provision of the loaded container at a European seaport for sea transport. Case two describes the preliminary workflow of a package service provider. This is characterized by the fact that vehicles of the package service provider travel to business customers to collect packages for shipping.

A multimodal network has been established for transporting containers which combines the transport carriers railway, road, and waterway. A time- and resource-efficient transition between the mode of transport and the handling facility requires coordination among the individual participants in the transport chain. Furthermore, the responsible logistics service provider must control and adjust the entire supply chain. The purpose of this is to allow efficient reactions to changes and unpredictable situations, thereby ensuring that the logistics process can be executed in a reliable way.

In order to optimize multimodal container transport, Future Internet control centers were developed in the scope of the LoFIP research project. These enable the consolidation and harmonization of available information about logistics processes. Schedulers then receive the information relevant for them in visualized form within the specific context of their tasks. The logistics partners concerned work together in virtual real time. Federated Future Internet control centers thus pursue the goal of providing practical support for schedulers in the execution of logistics processes, affording them effective aids in decision-making, and making it easy to implement cooperative campaigns and services.

An integral part of the federated control centers is a smartphone app. The application is intended to aid truck drivers in their daily tasks, such as the notification of delays, picking up containers, and managing transport documents. In order to react to deviations in a timely way, schedulers who coordinate container transport require up-to-date information about the course of events. The app developed can facilitate communication between the truck driver and the scheduler. Moreover, the prototype of the “Contii app” also uses



Application: “Multimodal hinterland container transport”

Focus areas of research into Future Internet technologies

These solutions are based on current focus areas of research into Future Internet technologies – the “Internet of Things” and the “Internet of Services.” In what is referred to as the “Internet of Things,” objects are rendered intelligent by means

condition of cargo to support the management of services. With the “Internet of Services,” services can be offered, found, and used in the Internet – across system, company and national borders. In the long term, this will allow the global networking of business processes through the combination of different services of service providers and requesters.



a QR code which allows the unique identification of the truck driver at the in-gate of the container terminal. In addition, the app also makes it easier to search for the container available for pick-up: A layout plan of the terminal shows its exact location.

of programmability, storage capacity, sensors, and communication abilities and can independently exchange information over the Internet, trigger actions, and mutually control each other. The “Internet of Things” can efficiently monitor cargo flows and provide data about the location and

Integration of the software-based platform into a living lab for logistics

For technical implementation of the federated Future Internet control centers for operative logistics processes and the applications described above, a software-based platform was initiated which offers not only the software components, but also a corresponding infrastructure. In order to promote research and development, an international living lab for logistics is integrated into this platform. The Future Internet control centers can be applied and tested under realistic conditions in this experimental environment, which models problems raised in practice. The living lab pursues the objectives of getting all parties concerned involved in the research and development process, making logistics solutions and new services and business models tangible in logistics in a user-oriented way – a bridging of practice and research in the interest of improved cooperation.



A good sustainability performance improves chances when scouting for talent

Taking on social responsibility – Sustainability factors are becoming more important.

Prof. Werner Sohn, Director of Transport and Logistics for the cooperative study program in Business Administration at the Berlin School of Economics and Law, talks with duisport Magazine about the importance of sustainability – both for the development of a company and for winning over new talent.

(tof) Increasing focus is currently being placed on the social responsibility of companies. How do the young students that you supervise view this issue? Do sustainability factors affect their choice of employer?

Prof. Sohn: We have clearly been able to prove the importance of sustainability at our university in Berlin. It is true that the number one attractiveness factor continues to be salary. However, talents now use a very broad set of criteria to assess potential employers. About 30% would settle for a smaller salary to work at a company that excels in the area of sustainability.

Does this mean that companies that fail to develop themselves in a sustainable way have to pay extra?

We've been able to show that, as well. If the sustainability performance of your company is poor, you'll have to pay over 20% higher salaries to attract these talents despite this.

In the past, companies could more or less lean back and relax because they could select the most suitable candidates from a pool of applicants. Today, it tends rather to be the case that the applicants place demands on the companies based on the principle: "Company, what can you offer me?" So do your findings imply the warning: logistics companies, position yourselves sustainably, for at times this will allow you to recruit talents without having to pay top salaries?

That's a perfect summary and the key message of our studies. The critical engagement with the issue of "what does my current employer have to offer with its sustainability profile" has definitely increased in importance. At our university, we are seeing more and more students who evaluate their employers according to this criterion. Moreover, "green washing" is identified as some-

thing extremely negative. Furthermore: If a company does not openly disclose its sustainability performance, it will clearly

Procedure: The studies are conducted with a minimum of 35 subjects either in a laboratory setting or via the Internet using acknowledged methods of decision research. The subjects are confronted with case decisions. A typical example of a case decision is the selection of a preferred project from a list of projects serving different social issues. Not only is the decision itself recorded, but also the completeness and the intensity of the gathering of information about the projects carried out during the decision-making process. In addition, the conventional questionnaire method is also applied to record the basic attitude of the test subjects about the social responsibility of companies. Study formats that have already proved a success can simply be adapted to the specific circumstances of individual companies. This way, company-specific results can be generated in a matter of weeks.

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Prof. Werner Sohn in discussion about the importance of sustainability.

Werner Sohn has been the Director of Transport and Logistics for the cooperative study program in Business Administration at the Berlin School of Economics and Law since the beginning of 2012. In the course of his career in the transport and logistics industry that spans over 25 years, he performed management tasks at companies such as Lufthansa, Lufthansa Cargo, Danzas, and Deutsche Post DHL. In addition to IT, Human Resources, and Program Management, his specialty areas also included Post Merger Integration and Change Management. His current research projects in the field of sustainability are conducted with participants from well-known companies in the logistics sector (Schenker, Agility, Lufthansa, Dachser, and many more).

compromise its attractiveness. Such companies are downright punished.

You also investigated how company workforces handle social responsibility projects. How is this different than with external talents, for example?

A surprising finding about this stakeholder group was that the preferences among employees vary widely. Men and women, older and younger members of the personnel reacted in a thoroughly differentiated way to the different issues concerning social responsibility. Projects with a clear commercial profit contribution, for example, scored very high with men, but tended to have an average score with women. It's possible to identify obvious "camps" among personnel. If you know what these camps are, you can of course take measures to prevent these camps from developing and use these projects to increase employee loyalty. A project that the management of a company regards as attractive isn't always seen in such a positive light by the employees.

To what extent are the results of your studies representative of or applicable to other companies?

Basically, it can be assumed that the patterns, preferences, and behaviors discovered by our studies also occur in the same way or in similar ways in most companies. What's important is that the companies analyze current or planned social responsibility initiatives with respect to their effect on the stakeholders. The amount of time and resources required to do this is manageable. And

the insights gained allow companies to use their own resources in a more targeted way.

But wouldn't you agree that it's not only the knowledge of what is expected of companies, employees, or external talents that's important, but also performing well with respect to the relevant social responsibility criteria?

Yes, clearly. We're talking about three levels here: First, an understanding of what is important for my target group. Second, the collection and disclosure of company-specific information allowing the target group to form an individual opinion. Third, the comparison with other companies in a benchmark in order to demonstrate: "I'm performing."

There's a multitude of other stakeholder groups – customers, investors, managers, and suppliers to name a few. Do you have reliable findings about these groups, as well?

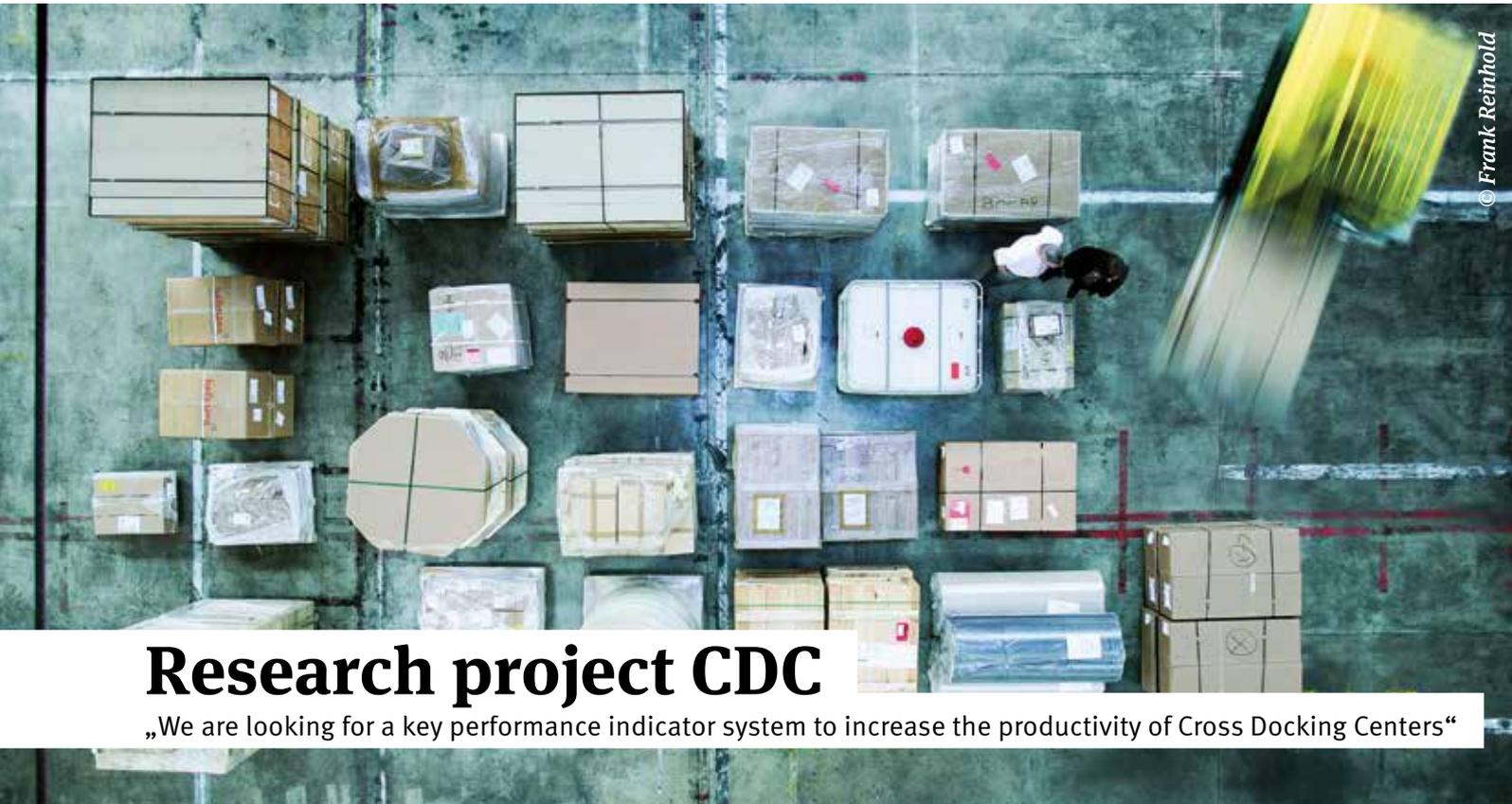
A lot of market research has been done on the topic of "customers and the social responsibility of companies" – we won't enter into that any further. Others are better at that. The field of investors and supply chain participants has only been scantily researched and will be our next focus.

Do you have a concluding message you would like to share with companies?

Reappraise your corporate citizenship projects with respect to their effect. For the resources a company is able to provide for the perception of social respon-

sibility aren't generally abundant. That makes it all the more important to use these resources in a targeted way. When I say "in a targeted way," not only do I mean creating maximum social benefit, but also bringing about the best possible effect among the stakeholders. These objectives aren't inconsistent with each other.

You can request details and additional background information about the findings and methods at:
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Research project CDC

„We are looking for a key performance indicator system to increase the productivity of Cross Docking Centers“

In an external dissertation Andreas Besse, working at FH Südwestfalen, is researching on a method to increase the productivity of Cross Docking Centers (CDC). In an interview he is talking about his project.

(tof) While a scientific examination of cross-docking will assume a nearly inventory-free handling and distribution function, the reality at Cross Docking Centers (CDC) is often very different. What are the biggest problems when making the jump in analysis from science into practice?

Andreas Besse: Difficult identification processes in goods receiving, long holding times during the handling process, and incorrect allocations to outgoing routes. These are factors that have a negative effect on productivity. They slow down the performance of a CDC and eventually also impair the performance in the supply chain.

What does productivity mean in the context of CDC, and what methodological challenges must be considered both in a scientific context and in relation to operational design?

This is the main research question, which not only addresses a research gap but also relates to the needs of the com-

panies. During the initial research, many logistics service providers confirmed the relevance to operational practice. Very few companies collect productivity-related key performance indicators (KPI), never mind aggregating the information into a key performance indicator system of part-productivities. The combination of scientific research question and a high degree of practical relevance is the main motivation to look at this issue as part of a dissertation.

Is there one central challenge?

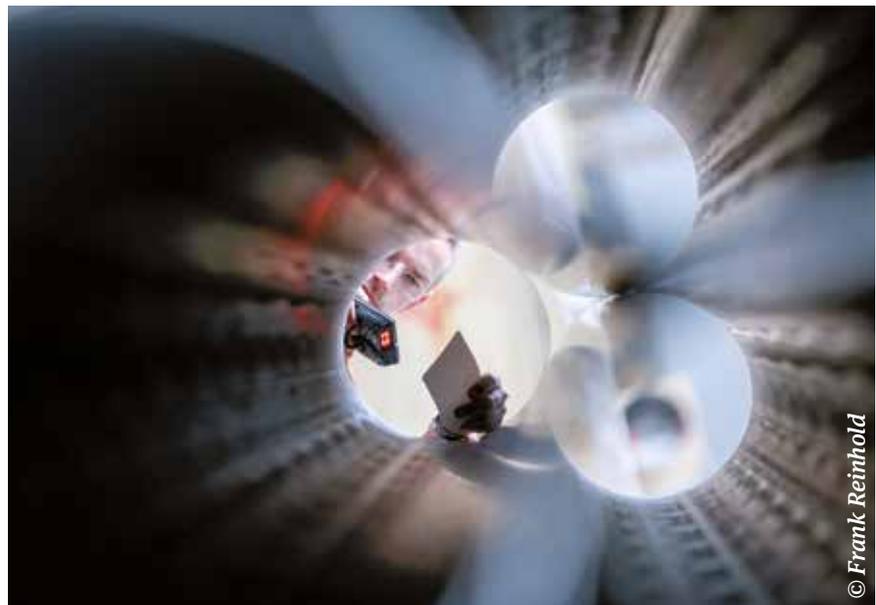
Yes, there is. We want to develop a KPI system that allows for a multidimensional examination of productivities in CDCs. The aim is to offer companies an opportunity to analyze their handling and distribution processes against the background of performance, and to provide an instrument that goes beyond a one-dimensional consideration in terms of individual KPIs.



Scientist **Andreas Besse** (31), who has been working at FH Südwestfalen in Meschede since May 2014, is currently conducting research on a method to increase the productivity of Cross Docking Centers (CDC). Besides conducting research projects in logistics, Besse is also a lecturer for Logistics and Supply Chain Management at various European universities. He previously managed the only logistics laboratory in Switzerland at the Zürcher Hochschule für Angewandte Wissenschaften (ZHAW). In addition, Besse acts as an advisor to industry, in particular in the area of material flow optimization as well as intra- and distribution-logistics projects for small and medium-sized companies.

What about the RFID technology, which already makes it possible to reduce non-productive waiting or holding times?

The latter does happen, and is induced by the deficient identification of the goods, for example. Radio frequency identification technology represents a unique feature in this regard. If it is possible to record the productivities of these processes and depict the implications of a technology such as RFID for productivity as part of a model, then this will have effects on the significance of the research results in line with the strategic control of CDCs. And that is exactly what we want to do. The implementation of RFID-supported processes is very expensive and fraught with risks. This research project is supposed to deliver approaches as to how a technology can affect individual productivity parameters before it is actually implemented into practice.



Transparency in project management: The IT supported batch part system of dpl is setting new standards in the area of project packaging.

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How can the productivity of Cross Docking Centers be measured? A dissertation that is designed to close this research gap.

(tof) Alternative goods delivery concepts and their implications on the supply chain are playing an increasingly important role. Higher demands on delivery times, improved reliability with simultaneously low inventories are the drivers in this context. And it is not just in the KEP segment that one can observe a trend towards „same day delivery“: even in the consumer goods industry and the automotive sector, companies are facing increasingly shorter delivery times and guaranteed ability to deliver in line with demanding service level agreements. The design of such distribution routes requires alternatives to classic delivery through mainly decentralized storage concepts. Cross docking is an important component in this regard.

In contrast to classic warehouse management, cross docking pursues a formal inventory-free handling and goods distribution approach: customers or branch offices are no longer serviced through a shipment warehouse which provides and picks the goods in the proper relation. Rather, it involves synchronous handling activities at a centralized location – the Cross Docking Center (CDC). Coordinated goods receiving and shipment reduce the function of the CDC to handling and the relation-appropriate distribution of the goods. By definition, this is no longer

warehousing in the more narrow sense. Against the background of efficient and lean processes, and compliance with service level agreements, the CDC must achieve clocked deliveries and shipments as well as a high level of productivity.

As part of an external dissertation project, Andreas Besse from the Fachhochschule Südwestfalen is conducting research on the scientific measurement of the productivity of intralogistic processes in the CDC and its optimization through RFID. The central research question is not only measured by the methodological-scientific lack of an adequate method for measuring this productivity, but is also driven by logistics service providers on the practical side. To date, the latter have very few approaches that go beyond one-dimensional collection in terms of classic output/input relations. Many companies have cost- and performance-related KPIs for warehouse management. Turnover frequencies, cost per warehouse spot, in relation to a period, as well as interest for the capital employed are typical key performance indicators for measuring warehouse performance regardless of the industry,“ says Besse. But the requirements are much more complex: „Hardly a company is aware of the relevance of handling and distribution processes, for example in line with cross docking. The

lack of performance-related, multi-dimensional key performance indicators for measuring the productivity of such processes does not allow for a comprehensive assessment of performance,“ says the researcher. The substitution of warehouse management in a narrower sense and pure goods handling in particular make it difficult to investigate productivity.

As part of a first step, production- and service-theoretical productivity terms were analyzed following a comprehensive research of literature, and investigated for their use in the aforementioned context. Following this step, it is imperative to adequately depict the multi-level productivity of cross docking processes in line with a key performance indicator system, in order to show the correlations and their implicit interdependencies.

The last step involves the verification of results as part of an empirical study. The insights thus gained are supposed to flow back into the further development of the model in line with rolling planning activities, but are no longer an explicit component of the dissertation project. „Finally, the challenge consists not just of the scientific-methodological development, but also the research transfer of results into practice,“ says Besse, in emphasizing the practical relevance of the research project.

Cross Docking Center: „Correct Labeling at the original supplier is the key“

In conversation with Jan-Malte Wöhrle, member of the Duisport packing logistics management about the research project of Andreas Besse.

(tof) The warehouse management of spare parts for different customers in the machine building sector has become a standard business for dpl. „Spare parts are shipped in from various European countries by truck, identified during the incoming goods process, divided by customer and order, or for storage, and packaged on the same day and loaded for air freight, for example,“ explains Jan-Malte Wöhrle, member of the dpl management team. „Cross docking is a critical element in terms of time, since the spare parts are needed urgently. In the worst case scenario, a factory somewhere in the world will have to shut down.“

As the manager of the dpl branch office in Essen, Wöhrle agrees with scientist Andreas Besse that „identification of the parts is a huge problem“ (see interview). Why? Small and medium-sized companies in the supplier industry often use different types of identification and IT systems. „To date, there has not been a labeling standard that would facilitate automated identification,“ says Wöhrle. While dpl is setting new standards in the area of project packaging with its batch part system, which extends across suppliers, Wöhrle believes that there „is still much work and convincing to be done“ at the level of medium-sized businesses with respect to standardization.

Wöhrle also does not mind talking about the long holding times mentioned by Besse. „Although I would formulate it dif-

ferently and instead talk of buffers,“ he says. „We have found that many companies work with buffers to generate a level of certainty that everything will be done on time. But if partners in the supply chain are purposely given earlier dates, that slows down the supply chain processes and costs money,“ says Wöhrle.

As a practitioner, Wöhrle does not quite see the incorrect allocation to outgoing routes. „If we introduce proper identification for incoming goods, then we can use IT systems to ensure that there are no incorrect allocations to outgoing routes,“ he says.

For him, identification remains the main key to success. In this context, he puts a lot of responsibility on the suppliers: „The original supplier must be integrated into the system, and must ensure proper labeling. The labeling process, supported with efficient IT, is the key,“ says Wöhrle.

In the meantime, the branch manager believes that in the case of a classic cross dock warehouse, the ability to turn incoming goods directly into picking is essential to increasing productivity. „In my opinion, the real issue is to ensure that the goods are only touched once and do not have to be stored.“

With regard to the issue of RFID, which was addressed by Besse, Wöhrle is skeptical when it comes to the machine building sector: „We have successfully implemented RFID at large customers in areas where we work with reusable containers,“ he says. But for the medium-sized businesses in the machine building sector, the aforementioned issues of uniform identification and standardization are still a challenge. „In many cases, even the supply chain-wide introduction of bar codes is still in



Jan-Malte Wöhrle, dpl GmbH.

the far distant future,“ says Wöhrle. And he believes that particularly the use of RFID, which presumes the existence of the required coding and reading devices at each small supplier operation and end customer, for example in a mine in Indonesia, is still a rather „futuristic“ concept.

At the same time, Wöhrle does not doubt that there is a lot of money to be made with cross docking. „Inventories are reduced, the work does not have to be done because someone else has picked the work, and handling speeds can be sped up considerably due to standardized processes,“ he lists the advantages. He also cites the factor that cross docking systems in countries with a stable infrastructure, such as Germany, can be cycled very tightly and buffers can be reduced to a minimum. Wöhrle once more illustrates the level of the dimensions that are involved: „What took a classic warehouse three days to do, a cross docking center now does in one night.“



A strong partner to the chemical industry

It is one of the most important hubs for the petrochemical industry in the Rhine-Ruhr region: The 14.5 hectare oil depot operated by TanQuid on the oil island in Duisburg-Ruhrort. The overall area of the oil depot is 18.5 hectares. With their technical know-how, the experts at TanQuid assume responsibility for managing the two businesses located on the site, PRG (PropylenPipeline Ruhr GmbH) and WFL (Westdeutsche Flüssiggas Lager GmbH).

(frön) It is one of the most important hubs for the petrochemical industry in the Rhine-Ruhr region: the TanQuid tank storage facility on the oil complex in Duisburg-Ruhrort. Almost three million tonnes of liquid are handled at that location every year. The tank storage facility acts as a hub for the import of raw materials from all corners of the globe for production in Germany, and also for the export of the finished products to customers around the world. Approximately 40 percent of the volume is handled by ship, approximately 22 percent by rail and about 11 percent by pipeline.

This data already provide a glimpse of the importance of this location in the middle of the Port of Duisburg: the 118 tanks have a total storage capacity of 226,000 cubic meters. The entire area of the tank storage facility is 18.5 hectares, of which 14.5 hectares are used by TanQuid. The experts from TanQuid use their technical know-how to manage the

operations of the two companies that are based at this location, namely PRG (PropylenPipeline Ruhr GmbH) and WFL (Westdeutsche Flüssiggas Lager GmbH).

The containers, which hold between 50 to 9,300 cubic meters, are located above ground, are protected against flooding and have permanent roofs and double floors with all required security systems. In addition, 19 tanks can be heated, are insulated and come with their own infrastructure. They can store products with melting points of up to 65 degrees. The energy required for this purpose is supplied by a separate boiler house with two boilers and a total capacity of up to eight tonnes per hour.

Decisive advantages

In addition to the flexibility offered by the infrastructure, the largest inland port tank storage facility also offers the decisive advantages of access and availability. "We can be reached directly by ship

from the Rhine after 1.5 kilometers without the limitations posed by locks and bridges," says operations manager Walter-Josef Mainka. 1,498 inland water vessels took advantage of this feature last year. With seven jetties on special risers, which exceed even the most demanding customer requirements, the staff at Duisburg is also equipped for peak handling periods with a land length of 1.5 kilometers.

All kinds of liquids can be loaded into one of the tanks through the approximately 60 kilometer long pipe network, and they can also be transferred directly into waiting inland water vessels from tank cars and tankers with the help of one of the 140 pumps. All this is done without interruption from Monday morning at 6 a.m. to Saturday afternoon at 1:00 pm and also on weekends as agreed. "This kind of flexibility is a must, because there is always a possibility that transport is delayed despite good

planning and diligence, and our customers expect to receive their goods on time and in line with their production plans,” explains the operations manager.

Last year, 493,000 tonnes were handled by way of direct transfer, including 16 percent by rail with an impressive number of 11,863 tank cars. Two dedicated locomotives with specially trained locomotive and shunting personnel are available for this purpose. Finally, the oil island is also connected to the trans-European flow of goods via two pipelines. At this time, the German market leader in the tank storage business processes more than 70 different products at Duisburg, distributed over approximately 30 customers from the mineral oil, petrochemical and chemical industry that use TanQuid as a quasi-upstream port: a Who’s Who of the German industry with a focus on the North Rhine-Westphalia chemical cluster, but also connections up to Mannheim, for example.

Security comes first

The security of the complex is a subject that is particularly close to Walter-Josef Mainka’s heart: state-of-the-art technology, qualified and continuously trained and highly motivated employees, and finally optimum security systems are working to fulfill this promise. He is well aware that a tank storage facility will always receive a lot of attention from its neighbors. Far from creating uncertainty, it represents a daily motivator for himself and his entire team. He regularly seeks out contacts with neighbors and citizens, such as in the officially prescribed citizen information bulletins, which are distributed to households.

The operations manager reports that the impressive facility dates back to the year 1951. He has been working in Duisburg since 1987. In the last nearly 30 years, he has experienced and helped shape numerous changes. For example, how the areal went from VTG areal (Vereinigte Tankläger und Transportmittel GmbH) first to Preussag, then to VTG-Lehnkering und Lehnkering, quasi a reflection of the numerous changes that took place in the mineral oil, petrochemical and chemical industry – and at their logistics services provides.

The location has been operated under the name TanQuid since 17 November 2005. A company that itself has made history in the meantime: portions of the Petroplus Group were added in 2006, followed by the IVG tank storage business in 2007. “Today we are represented at 13 locations in Germany and one loca-



F. l. t. r.: Jens Moir (CEO TanQuid GmbH & Co. KG), Urs Beckmann (COO TanQuid GmbH & Co. KG) and Walter Mainka (Operations Manager Duisburg).

tion in Poland,” says CEO Jens Moir with some pride. The network extends from Hanover to Munich, from Duisburg to Berlin. And it is no coincidence that TanQuid established its head office at the Duisburg interior port. “Management offices are located here at the center of this important chemical region,” explains Moir during a visit. “In addition, this is where all teams of the head office departments such as sales, technology, finance, HR, IT and operations are bundled. This is how we can provide solutions that are in keeping with customer expectations quickly and without red tape across departments.”

The objective is clear: “Our services and competence ensure that every product is in the right place at the right time and at the optimum quantity and quality. In this context, we warrant that all statutory framework conditions and requirements are complied with.” In addition to storage, activities also include the finishing of products in almost all storage classes and different temperature ranges.

The special role that security plays in daily operations is also emphasized by Urs Beckmann. He has been responsible for the divisions Locations, Operations and Technology in the role of COO since 1 November. The 46-year-old succeeded Ansgar Maurer, who continues to assist the company in an advisory capacity. “Our customers entrust us with sometimes very valuable goods. This alone is one of the reasons why we must give our best each day and exercise the maximum amount of diligence.”

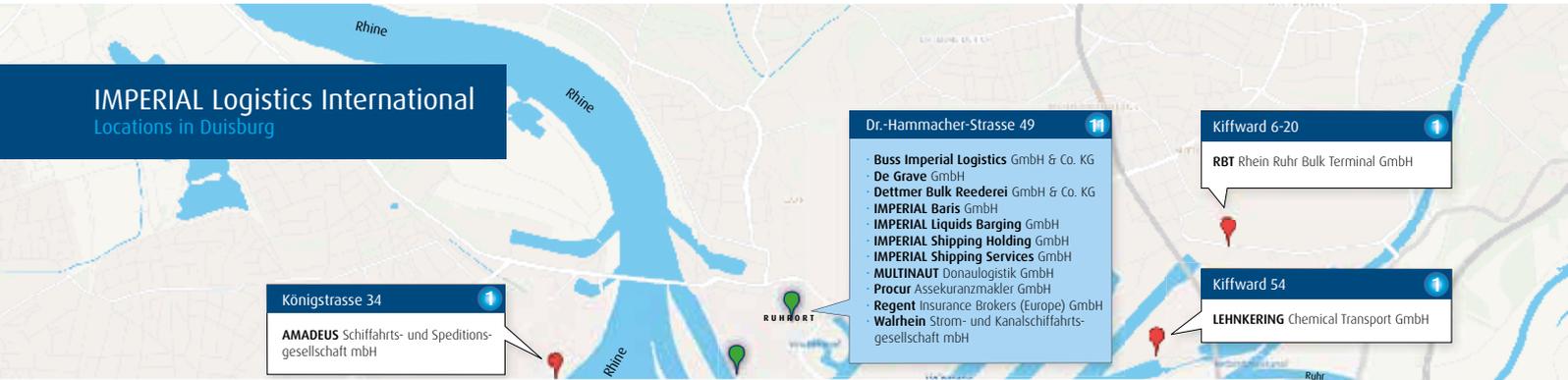
Supply chain solutions

At the same time, he believes that the

transportation methods waterway, rail and pipeline are not just the best choice in terms of security, which is significantly higher than for road transportation, but also in terms of profitability. He comes back to the dense network of refineries: “Our locations in the center of Europe create optimum supply chain solutions, which allow customers to lower transport and storage costs and also CO2 emissions. Environmental protection, occupational safety and the protection of health are closely linked, and are among our top corporate objectives. This issue of HSSE (Health, Safety, Security & Environment) is an important component of our daily work activities. We take responsibility and use state-of-the-art technology that meets the newest safety and environmental standards.”

This also includes the close contacts that are currently maintained by the 85 employees and two apprentices with government authorities at various levels. “We also view this as an obligatory component of responsible action.”

TanQuid wants to continue to grow, as hinted to cautiously by Moir: “We currently have a tank capacity of 2.7 million cubic meters, which we would like to expand. Through local growth at the various locations, and also acquisitions.” To him, continuous upgrades are a key task for which amounts in the double-digit million range are invested in the equipment every year. “We believe in the chemical industry here and in the region. We believe in the location, and we believe in this city. We want to make our contribution – also by safeguarding existing workplaces and maybe even creating new ones.”



An extensive network in the port



The locations of IMPERIAL Logistics International Group in Duisburg.

(gran) neska Schiffahrts- und Speditionskontor GmbH, a subsidiary of the Imperial Logistics International Group and HTAG Häfen und Transport AG, is one of the biggest players in the Port of Duisburg. Without neska's handling terminals for containers and bulk cargo, not much would be going on at the wharfs. With its transshipment operations, the company is one of the biggest customers of Duisburger Hafen AG.

Recently, containers were even moved for the company with the four rings. A subsidiary of the container handling network neska intermodal, the Rhein-Ruhr Terminal Gesellschaft für Container- und Güterumschlag mbH (RRT) is the key partner of Audi AG for its CKD (Completely Knocked Down) business in logport II. From here, the automobile group arranges for the export of vehicle components with a total annual volume of about 800,000 cubic meters to China, India, and Mexico for the assembly of model A3, A4, A6, Q3, Q5, and Q7 cars. RRT assumes the handling tasks in

the trimodal Terminal Gateway West on behalf of the duisport Group. duisport manages the transport procedures in the port for Audi's service provider Schnellecke Logistics. The company picks, packs, and stows the car parts in containers beforehand. The duisport Group had its own logistics center built at the site for this purpose. Schnellecke is a tenant there. With the aid of container bridges with a load-bearing capacity of up to 50 tons, the containers are loaded onto liners owned by Alcotrans Container Line, another neska intermodal subsidiary. The boxes are then transported to the seaports of Antwerp and Rotterdam, where they are reloaded onto seagoing vessels.

"The transshipment volume is currently up to 40 containers per day," explains HansPeterWieland, member of the management board of neska Schiffahrts- und Speditionskontor GmbH and Managing Director of RRT. When the logistics center goes into full operation, a daily figure of up to 80 containers is expected.

"We have already increased the number of weekly departures to Antwerp from three to four," adds Andreas Stolte, who is also a Managing Director of RRT. RRT also takes care of the storage and provision of the empty containers supplied by inland barge. For this purpose, duisport supplied the terminal operator with a 15,000 square meter area to complement the existing empty container depot in Gateway West. The containers can also be cleaned and repaired if necessary before they are loaded with car parts again.

Container terminals

Gateway West is one of two container terminals owned by neska intermodal that are located in the Port of Duisburg. The Home Terminal, the original base of RRT which went into operation in 1986, is still on Moerser Straße. The two container terminals offer a combined storage capacity of over 14,000 TEU over a total area of 149,000 square meters. Covering an area of 71,000 square meters, the Moerser Straße facility is now a mul-



The RRT is one of two container terminals owned by neska intermodal.

ti-purpose terminal with two 50 ton container bridges on a 400 meter-long wharf where not only inland water vessels and Rhine-going maritime vessels are processed, but also intermodal trains on 650 meters of track. The storage capacity of the site is 5,360 TEU. A total of 3,000 square meters of building area are used for picking and storing general cargo and for packing industrial plants. A bagging facility is used to pack bulk cargo such as synthetic granules. In addition, the site also has a tilting platform for reloading granules from overseas containers into silo trucks and wagons as well as inland containers.

Gateway West in logport II, however, did not go into commission until 2009. This terminal has an area of 77,900 square meters and two 50 ton container cranes. Its storage capacity is 9,000 TEU. The wharfage is 350 meters long. Intermodal trains can be processed on four 350 meter tracks. In addition, Gateway West has also housed RRT's headquarters since 2011. "The terminal is in operation 24 hours a day, seven days a week, and thanks to its diverse connections by rail and ship to the seaports of Antwerp, Rotterdam, and Zeebrugge as well as to inland terminals in Germany and Italy, it has a hub function for neska intermodal," says Wieland.

Over 1.4 million TEU

In view of the rather moderate growth experienced by the container business, Wieland says, the neska Group and its total network of six legally independent container terminals along the Rhine are

focusing in particular on improving and expanding its service range and traffic networks. Container repair and the loading and unloading of boxes are already offered, as well as warehouse management and a water taxi for transporting empty containers between the terminals on the Lower Rhine in Duisburg, Krefeld, Düsseldorf, Dormagen, and Cologne. The new transport system "Black and Blue Box" allows the loading of such bulk cargo as coke and scrap. According to Wieland, neska intermodal's total annual transshipment volume is over 1.4 million TEU. Nearly 400,000 TEU of this total are handled in Duisburg alone.

In the future, neska intermodal also plans to expand its range of liner train and ship connections. Since the beginning of the year, for example, the "Ost-westfalen Xpress 2" has been commuting between Duisburg and the Minden terminal of the Bobe forwarding company six times per week, with stops in Bönen and Rheda-Wiedenbrück. "We want to increase the frequency to five departures per week in the coming year," announced Wieland. The capacity per train is 85 TEU. The two partners are thus linking their intermodal networks: While neska intermodal is concentrating more on the western ports of Antwerp and Rotterdam, Bobe is oriented more towards Hamburg and Bremerhaven.

Especially in view of current traffic problems in Hamburg, Stolte considers the "Ost-Westfalen Xpress 2" to be a sustainable, flexible, and plannable alternative to trucks. After the completion of the Rotterdam Maasvlakte 2 expected by the end of the year, the Weser Uplands region will have an additional high-capacity connection to the new terminals in the Benelux ports. In the future, neska intermodal's core interface for goods from the Benelux and northern ports will be the logistics center RuhrOst (LZR) in Bönen. The terminal is also used by "Ost-Westfalen Xpress 1," which has been commuting between Duisburg and Bönen since 2007, currently departing at a rate of six times per week. The shuttle transports up to 92 TEU per train.

Turkey traffic is also set for expansion. For example, RRT plans to expand its cooperation with the Turkish forwarding company BALO. The BALO train currently reaches the Duisburg RRT three times per week. The frequency and capacity of this connection are to be further increased, however.

And Wieland is already planning new transport routes. "Next year, we want to

connect Berlin to the rail network," he announces. The reason for this is that the distribution centers located there run by major online mail order companies are looking for a fast connection to the Benelux ports. And the frequency of the existing connection to Stuttgart from Duisburg is also supposed to be increased.

neska Bulk

While neska intermodal stands for containers and intermodal transport, the business division neska Bulk operates in the area of the transshipment, storage, and transport of bulk cargo. In this area, neska Bulk counts about 8 million tons handled per year. neska Bulk has three terminals in Duisburg alone, among them the affiliated company dbt Duisburg Bulk Terminal GmbH for bulk cargo transshipment, RBT Rhein-Ruhr Bulk Terminal GmbH for the transshipment of raw materials, and the joint venture company EBHD European Bulk Hub Duisburg for silo handling services.

The network

The recipe for success, however, is in the network: neska is a subsidiary of the Imperial Logistics International Group (65%) and HTAG Häfen und Transport AG (35%), both also based in Duisburg. neska originated in 1999 when the South African company Imperial Holdings Limited took over the logistics activities of the Krupp Corporation (now ThyssenKrupp). With an annual sales volume of € 1.6 billion, the neska parent company Imperial Logistics International, which pools all the logistics activities outside Africa, is among the ten leading logistics companies in Germany. Wieland explains neska's recipe for success: "The cooperation of the neska companies with the Imperial subsidiary companies guarantees our customers efficient and intelligent logistics solutions in international container transport as well as conventional general and bulk cargo transport." For the neska Group, Wieland cites total sales of € 260 million and a workforce of over 650 employees. Besides neska, other subsidiaries of the Imperial Logistics International Group are Imperial Shipping Group, the largest inland shipping company in Europe, the production and chemicals logistics specialist Lehnkering, the contract logistics provider Panopa, and the maritime transport specialist Brouwer Shipping & Chartering. And the special thing is: With the exception of Brouwer, all of the companies named above have their headquarters in Duisburg.

Not your usual exhibition



© Museum der Deutschen Binnenschifffahrt

The Museum of German Inland Water Vessel Industry in Duisburg-Ruhrort.

(frön) A museum that takes to the waters, so to speak, is rather the exception than the rule. But it does somewhat apply to the Museum der Deutschen Binnenschifffahrt (Museum of German Inland Water Vessel Industry): Sixteen years ago, the collection from the former rooms in Dammstrasse moved north into the former Ruhrort baths through the rail track basin. This year, the museum is celebrating its 40th or 35th anniversary - depending on interpretation. Either way a reason to celebrate.

There are changes that characterize the museum, just as the topic it is concerned with: the inland water vessel industry has always been in a state of flux, and is almost always moving. Similarly, the industry - and with it the entire logistics - also undergoes enormous changes from time to time. Just how far-reaching these changes are can be seen in the museum: One can find a logboat that is estimated to be 2,500 years old beside a state-of-the-art barge combination.

Just two extremes of a development that causes those visiting the museum in the Apostelstrasse to wonder: barges and sailing freighters as crossed the Rhine and Ruhr 200 years ago. What seems so romantic and introspective today was hard work back then, but it also turned the Ruhr into the then most-traveled waterway in Europe and played a decisive part in the rise of the Ruhr region into one of the most prosperous economic regions in the world. Contrasts and dependencies everywhere one looks.

In addition, the museum exhibits almost every type of inland water vessel that once crossed or still crosses the rivers. In addition, over three floors it demonstrates the romanticism of the Rhine, port facilities and life on board (which was much less romantic). It offers insights into international contracts, and shows the history of the various forms of passenger traffic and hydraulic engineering. This and much more fills the numerous display cabinets. A great

number of exhibits can even be touched and tried out.

Walkable vessels

The attention-getter and centerpiece of the former men's swimming hall is the Tjalk „Goede Verwachting“, a paraglider from the year 1913 in full sail. This hall is dedicated to the history of movement technologies on rivers from logboat to modern pusher trains, and shipbuilding. And it provides a glance into a completely unknown side of sea shipping: the riverbed was designed in a realistic manner so that the ships are „swimming“ in the basin, and are accessible to visitors.

An accessible reproduction of an inland water vessel is located in the center of the former women's swimming hall. It is the play vessel „Hermann“, which is so popular among children. Life and work on board is an important theme of this hall. The exhibition tells us about the daily life of seamen and their families on water and on land.

The museum also follows the principle that the journey is the reward. In front of the doors of the house, the path leads visitors directly along the water. The towpath sets the stage that has maintained the character of the inland water vessel city quarter despite all of the changes that have taken place. It eventually leads visitors to the three museum ships „Oscar Huber“, the bucket chain steam dredger „Minden“ and the crane ship „Fendel 147“, which are moored on the Schifferbörse. Also located in the plaza is a historic port steam crane. The quartet is also the starting point for the origins of the museum: The „Oscar Huber“, which was built in 1922, pulled rudderless ships and their freights up and down the Rhine into the 1960s. At that time it was not an anachronism but rather high-tech. Originally, barges did not have any rudder except for sails, and had to be pulled against the current by animals or people on long ropes on the towpath (which is named for that reason) on both sides of the shore. Later, in the 1840s, this task was taken over by the „state-of-the-art“ barges – which were equipped with enormous paddle-wheels and steam engines that gave off a lot of smoke. Diesel engines, which were powerful and simultaneously small and efficient enough for the freight boats, did not come along until the 1960s. Then came the pushed tow system, which put a sudden end of the era of steam barges on the Rhine and Ruhr, and also on the Mosel, Danube and Main. „Sudden end“ for ships meant the unromantic prospect of being turned to scrap, as Dr. Gernot Tromnau, the museum’s long-time director in Ruhrort, reminds us. But many people did not want it to be this way, as much as they understood the need for change. They started a large campaign, which ended with the handover of the



Tjalk „Goede Verwachting“, a paraglider from the year 1913.

ship to the people of Duisburg on 19 May 1974. A gift with consequences.

History of foundation

Let’s take another step back into history: as early as in the 1920s, there had been discussions in Ruhrort regarding the establishment of a museum. But these plans never made it past the planning stage. Finally, then former assistant Dr. Konrad Schilling took on the challenge shortly after becoming the head of the cultural department in 1974, as Tromnau remembers with a smile. “He ‚occupied‘ the empty Ruhrort city hall in the Dammstrasse, and suggested to the city’s council that a museum be set up there.” That is why some people consider the year 1974 as the actual founding year of the museum.

Dr. Konrad Schilling’s course of action was somewhat controversial, and it

would take until 13 June 1977 until the council meeting approved the „Museum der Deutschen Binnenschiffahrt Duisburg – Ruhrort“. However, because of the already dire fiscal situation, the museum did not have its own budget and own staff, and this led to the facility being connected to the Niederrheinisches Museum (now Kultur- und Stadthistorischen Museum).

What administration and policy-makers lacked in money, people and industry made up with enthusiasm and donations. „On 12 September 1977, numerous persons from all levels of society and representatives of companies in industry and in particular shipping met for the inaugural meeting of the ‚Gesellschaft zur Förderung des Museums der Deutschen Binnenschiffahrt Duisburg-Ruhrort e.V.‘. Their goal was to support the establishment of the museum with ideas as well as donations and contributions in kind,“ Tromnau still remembers well. After all, as the manager of the Niederrheinisches Museum, he had not just taken on a new branch office, but also another large task.

The call to action had its effect: 87 companies and 165 individual members committed themselves, developed concepts, donated money, items and models, and did not hold back with counsel and ideas. After all that, some scoffed that the 400 square meters that were officially opened on 25 May 1979 on the ground floor seemed rather small. Even if the location in the geographic heart of the German inland water vessel industry, in Duisburg Ruhrort, was well above small-minded criticism. The museum eventually took over two more floors,



Floating monuments along the Rhine promenade in Ruhrort.

growing to an exhibition space of more than 1,200 square meters. That sounds like a lot - but did not offer much room for development.

New berth

Therefore the museum started to look for another location with the assistance of the museum's friends association. A rather controversial decision that resulted in long and sometimes emotional discussions. This was also not changed by the Apostelstrasse berth in the Art Nouveau baths, which had been closed in 1986 (still with separate men's and women's sections). And not by the fact that the building, which was built at the beginning of the 20th century and received a heritage building designation, was carefully renovated and redeveloped for its new visitors by „architekturfabrik aachen“ (afa) in cooperation with the artists Ron Bernstein as part of the „Internationale Bauausstellung Emscher Park (IBA)“.

On 15 August 1998, the new museum with almost double the exhibition space was opened in the new premises, and visitors were very impressed. At the beginning of 2001, the museum also became an independent institution in terms of administration, „which unfortunately did not result in better personnel or financial resources,“ admits Tromnau. His successor is more careful with his comments: „It is actually an industry museum,“ says Weber. „And thus it belongs to the shipping industry.“ Therefore he argues, in a friendly but determined manner, for a stronger commitment by the industry by offering convincing arguments: „You only know where you are and where you stand if you know where you come from. Each one of us is only the ending point



Unusual atmosphere: The museum can also be reserved as a venue for a wide variety of events.

of one's own history.“ Therefore it can only help to be aware of one's history, to experience it in all of its facets, and to see the developments it has undergone. Especially in a port and an industry that has undergone a lot of change.

Accordingly, offerings for children and youths also play a large and important role in the form of permanent and temporary exhibitions. Therefore a visit to the museum has been on the curriculum of Duisburg's schools since the beginning. And Weber would also like to see more of the young shipping, freight forwarding and logistics workers. „It is a great honor to bring the inland water vessel industry and its history closer to children and young people. Also to create excitement for this industry among the young - the talent that this industry so urgently needs.

It is not the only way the museum tries to get attention. Events are one of the pillars of the museum, which is growing and continuously adapting. Banks and Ruhrort companies (for example from the area of alternative fuels) are already holding international meetings and workshops in the premises. Usually in connection with the museum's offerings, such as a visit on the „Oscar Huber“ or a port tour. In addition, event technology and moderator equipment is also available on request.

The culinary experience is created in the museum's restaurant „Schiffchen“. It „moored“, so to speak, under new management in the former boiler house in the summer of 2010. With a rotating weekly lunch menu, the day restaurant not only offers regional specialties but also seasonal dishes. In the afternoon, it serves selected coffee specialties and delicious cakes. You can even get married at the museum. And then there are the ever popular birthday parties, which can be celebrated there. The museum, museum shop and „Schiffchen“ are open Tuesday to Sunday from 10 am to 5 pm, while the museum ships will open again on 3 April 2015 after the winter break.



The Tjalk „Goede Verwachting“ is being brought to the museum here. The Art Nouveau public bath and its pools are still clearly visible.

Entrance fees

Adults	4,50 Euro
Children/discounted	2,00 Euro
Family card I (one adult and child(ren))	6,00 Euro
Family card II (two adults and child(ren))	10,00 Euro
Groups of 15 people or more	3,50 Euro p.P.

www.binnenschiffahrtsmuseum.de



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LINER CONNECTIONS

INLAND CONTAINER TRANSPORT

International	from Duisburg	Shipping Company	Terminal	Ship type*
Belgium				
Antwerp	2 x per week	9	DeCeTe	B
Antwerp	5 x per week	6	DeCeTe/DIT/ D3T/GWW	B
Antwerp	3 x per week	5	DeCeTe	B
Antwerp	3 x per week	4	DeCeTe	B
Antwerp	3 x per week	1	RRT	B
The Netherlands				
Rotterdam	4 x per week	5	DeCeTe	B
Rotterdam	5 x per week	6	DIT/D3T	B
Rotterdam	2 x per week	1	RRT	B
Rotterdam	5 x per week	9	GWW	B
Rotterdam	5 x per week	4	DeCeTe	B

SEA-GOING CONTAINER TRANSPORT

International	from Duisburg	Shipping Company	Terminal	Ship type*
Finland				
Helsinki	3 x per week	3	DeCeTe	B/S
via Kotka	2 x per week	11	DeCeTe	B/S
via Mäntuluoto	1 x per week	11	DeCeTe	B/S
Great Britain				
Hull, London	5 x per week	11	DeCeTe	B/S
Tilbury	4 x per week	11	DeCeTe	B/S
Grangemouth (Schottland)	1 x per week	11	DeCeTe	B/S
Ireland				
Belfast	1 x per week	11	DeCeTe	B/S
Dublin	2 x per week	11	DeCeTe	B/S
Kazakstan				
via Riga	3 x per week	3	DeCeTe	B/S
Latvia				
Riga	3 x per week	3	DeCeTe	B/S
Tallinn	2 x per week	11	DeCeTe	B/S
Lithuania				
Klaipeda	3 x per week	3	DeCeTe	B/S
Norway				
Oslo, Kristiansand	2 x per week	11	DeCeTe	B/S
via Brevik	1 x per week	11	DeCeTe	B/S
Poland				
via Gdynia	2 x per week	11	DeCeTe	B/S
Russia				
Moskau	2 x per week	11	DeCeTe	B/S
St. Petersburg	7 x per week	3	DeCeTe	B/S
St. Petersburg	2 x per week	11	DeCeTe	B/S
Ust-Luga	1 x per week	11	DeCeTe	B/S

LINER CONNECTIONS

SEA-GOING CONTAINER TRANSPORT

International	from Duisburg	Shipping Company	Terminal	Ship type*
Spain/Portugal				
Bilbao, Leixões	2 x per week	11	DeCeTe	B/S
Gijon, Vigo, Lisbon	1 x per week	11	DeCeTe	B/S
Sweden/Denmark				
via Gothenburg	2 x per week	11	DeCeTe	B/S
via Oxelösund	1 x per week	11	DeCeTe	B/S
Södertälje	1 x per week	11	DeCeTe	B/S
Urkaína				
via Klaipėda	3 x per week	3	DeCeTe	B/S

CONVENTIONAL SEA-GOING TRANSPORT

International	from Duisburg	Shipping Company	Ship type*
Denmark			
	weekly	2	S
Great Britain			
River Humber-ports	daily	8	S
Sutton Bridge, Flixborough	1 x per week	2, 5, 10	S
Norway			
Horten, Kristiansand, Sandnes, Bergen, Trondheim			
Frederikstad, Stavanger, Aalesund	weekly	13	S
Sweden			
	weekly	2	S
North-Spain			
	two-weekly	2	S

TRAMP/TRANSPORT PROJECT CARGO

CONVENTIONAL SEA-GOING TRANSPORT - Regular sailings upon request

National	Shipping Company
German Baltic Ports (e. g. Kiel, Wismar, Rostock, Stralsund)	2, 8, 10, 12
International	
Denmark (e. g. Fredericia, Kopenhagen, Odense)	2, 8, 10, 12
England (e. g. Grangemouth and all british Seaports)	2, 7, 8, 12
Finland (e. g. Saimaa-basin; Ports on the South and West Coast)	2, 8, 10
France (e. g. Bordeaux, Caens, Le Havre)	2, 8, 10, 12
Greece, Italy, Northern Africa all Ports on the Mediterranean Sea	2, 8, 10
Ireland (e. g. Cork, Drogheda, Foynes)	2, 8, 12
Lithuania, Latvia, Estonia, CIS Countries all baltic Countries/Seaports	2, 8, 10, 12
Mozambique	8
Norway (e. g. Oslo)	2, 8, 10, 13
Poland (e. g. Danzig, Gdynia, Stettin)	2, 8, 10, 12
Portugal (e. g. Aveiro, Figueira, Leixoes, Lissabon, Setubal)	2, 7, 8, 10, 12
Russia (e. g. St. Petersburg)	1, 8
Scotland	2, 8, 12
Sweden (e. g. Göteborg, Malmö, Sölvesborg, Stockholm)	2, 8, 12
Scandinavia	2, 7, 8, 13
Spain (e. g. Aviles, Bermeo, Bilbao, Pasajes, Santander)	2, 7, 8, 10, 12
Turkey, Black Sea	2, 8

SHIPPING COMPANIES

Name	Telephone	E-Mail
1. Alcotrans Container Line B.V.	+ 31 (0) 88-8 760 220	info@alcotrans.nl
2. Amadeus Schiffs- und Speditions GmbH	+ 49 (0) 2066-99 830	chartering@amadeus-schiffahrt.de
3. Containerships	+ 49 (0) 203-51 86 93 35	christof.maas@containerships.de
4. H & S Container Line GmbH	+ 49 (0) 203-80 03 265	info@hs-containerline.com
5. Haeger & Schmidt International GmbH	+ 49 (0) 203-80 03 255	chartering@haegerundschmidt.com
6. HTS intermodaal b.v.	+ 31 (0) 183-66 88 66	willemvaneijk@htsgroup.nl
7. Meerpahl & Meyer GmbH	+ 49 (0) 203-7 13 96 90	duisburg@meerpahl-meyer.eu
8. Rhenus Maritime Services GmbH	+ 49 (0) 203-80 4-247	info.rms@de.rhenus.com
9. Rhinecontainer B.V.	+ 31 (0) 78-62 51 555	info@rhinecontainer.com
10. Saar-Rhein-Transportgesellschaft mbH	+ 49 (0) 203-80 07 60	srt@saarhein.de
11. Samskip B.V.	+ 49 (0) 211-6 50 44 70	duesseldorf@samskip.com
12. See-Transit Schiffs- und Speditionsges. mbH	+ 49 (0) 203-28 08 08-0	operating@seetransit.de
13. Wilson NRL Transport GmbH	+ 49 (0) 203-80 95 70	dbg.chart@wilsonship.de

TERMINALS

Name	Telephone	E-Mail
DeCeTe Duisburger Container-Terminal GmbH	+ 49 (0) 203-80 90 600	info@decete.de
DIT Duisburg Intermodal Terminal GmbH	+ 49 (0) 2065-49 92 65	zentrale@dit-duisburg.de
GWV	+ 49 (0) 203-31 85 622	gateway@rrt.container-terminal.de
RRT Rhein-Ruhr Terminal GmbH	+ 49 (0) 203-31 85 60	info@rrt.container-terminal.de

* B: Barge, V: Vessel (Short Sea), B/V: Barge/Vessel

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CONNECTIONS FOR COMBINED TRANSPORTATION

National	From Duisburg		To Duisburg		Operator	Terminal
	Dep.	Arr.	Dep.	Arr.		
Bönen	1-5	B	1-5	B	12	GWV
Bremerhaven-Nordhafen	1-5	C	1-5	C	2	DIT/D3T
Dortmund	1-5	B	2-6	B	2	DIT/D3T
Unna	1, 3, 5	A	1, 3, 5	B	12	GWV
Hamburg Süd-Waltershof	1-5	C	1-5	C	2	DIT/D3T
Hamburg-Billwerder	1-5	B	1-5	B	8	DUSS
Hamburg-Billwerder	6	C	6	C	8	DUSS
Kiel-Ostufertafen/Schwedenkai	2, 4	B	1, 3, 5	B	8	DUSS
Kiel-Ostufertafen/Schwedenkai	6	B	-	-	8	DUSS
Leipzig-Wahren	1-5	B	1-5	B	8	DUSS
Lübeck-Skandinavienkai	1-6	B	1, 2, 4, 5, 7	B	8	DUSS
Lübeck-Skandinavienkai	1-6	B	1-6	B	13	HBB
Ludwigshafen (Rhein)	1-5	B	1-5	B	8	DUSS
Marl	1-5	A	1-5	A	2	DIT
Marl	1-4	B	1-4	B	2	DeCeTe
Marl	5	C	5	C	2	DeCeTe
Minden	1, 3, 5	B	2, 4, 6	B	12	GWV
München-Riem	1-4, 5	B	1-5	B	8	DUSS
Buna	-	-	6	C	5	DUSS
Buna	1-5	B	2-5	B	5	DUSS
Schwarzheide	5	D	6	C	5	DUSS
Schwarzheide	1-4	B	2-5	B	5	DUSS
Singen (Htw)	1-5	B	2-6	B	5	DIT
Stuttgart	1, 3, 5	B	-	-	12	RRT GWV

International	From Duisburg		To Duisburg		Operator	Terminal
	Dep.	Arr.	Dep.	Arr.		
A - Austria						
Wels	1-5	B	2-4	B	8	DUSS
Wels	-	-	6	C	8	DUSS
Wels	-	-	5	D	8	DUSS
Wien-Nordwest (via Wels)	1-4	C	1-4	C	8	DUSS
Wien-Nordwest (via Wels)	5	E	5	D	8	DUSS
WienCont	1, 3, 6	C	1, 3, 5	C	5	DIT
WienCont	2, 4, 6	C	2, 4, 5	C	6	DIT
B - Belgium						
Antwerpen	2, 4, 7	B	2, 4, 6	B	2	DIT
Antwerpen	2, 4, 6	B	1, 3, 5	B	8	DUSS
Antwerpen	1, 3, 5	B	1, 3, 5	B	6	DIT/DKT
CN - China						
Chongqing	2, 4, 6	-	-	-	14	DIT
Zhennzhou	2, 4, 6	-	-	-	14	DIT
CZ - Czech Republic						
Lovosice	1-4	B	1-4	B	8	DUSS
Lovosice	5	C	6	C	8	DUSS
Brno via Lovosice	1-4	C	1-3	C	8	DUSS
Brno via Lovosice	5	E	1, 2, 6	D	8	DUSS
Paskov via Lovosice	1-3	C	1-3	C	8	DUSS
Paskov via Lovosice	5	D	5	D	8	DUSS
Paskov via Lovosice	4	E	-	-	8	DUSS
Prerov via Lovosice	1-4	C	1-3	C	8	DUSS
Prerov via Lovosice	5	E	1, 2, 6	D	8	DUSS
Prerov via Lovosice	-	-	4	E	8	DUSS
Prag	2, 4, 6	B	2, 4, 6	B	9	DIT
DK - Denmark						
Kopenhagen	1-4	B	2-5	B	13	HBB
Kopenhagen	5	D	5	D	13	HBB
via Hamburg	1-4	C	1-5	C	8	DUSS
E - Spain						
Barcelona (Granollers) via Ludwigshafen					8	DUSS
Tarragona (Constanti) via Ludwigshafen					8	DUSS
EST - Estonia						
via Lübeck			Further connections		8	DUSS
FIN - Finland						
via Lübeck			Further connections		8	DUSS
via Rostock			Further connections		8	DUSS
F - France						
Bayonne via Ludwigshafen					8	DUSS
Le Boulou via Bettembourg					16	HBB
Lyon	1-4	B	1-5	B	8	DUSS
Lyon	6	C	-	-	8	DUSS
Lyon via Bettembourg					16	HBB
Marseille via Ludwigshafen					8	DUSS
Miramas	1, 3, 4	B	1-3	C	8	DUSS
Miramas	2, 3	C	-	-	8	DUSS
Miramas	6	D	-	-	8	DUSS
H - Hungary						
Budapest	1, 2, 3, 4, 6	C	1, 2, 3, 4, 5	C	5	DIT
Budapest via Wels	1, 2, 3	D	1-2	D	8	DUSS
Budapest via Wels	4, 5	E	4	E	8	DUSS

International	From Duisburg		To Duisburg		Operator	Terminal
	Dep.	Arr.	Dep.	Arr.		
I - Italy						
Bologna	1, 3, 5	C	1, 3, 5	C	7	DKT
Busto Arsizio/Gallarate	6	C	6	C	8	DUSS
Busto Arsizio/Gallarate	1-5	B	1-5	B	8	DUSS
Milano	2, 4	B	2, 4	B	7	DIT
Novara	1, 3, 5	C	1, 3, 5	C	3	HBB
Pomezia	1, 3, 5	B	1, 3, 5	B	7	DKT
LT - Lithuania						
via Kiel			Further connections		8	DUSS
LU - Luxembourg						
Bettembourg	2, 4, 6	B	1, 4, 6	B	16	HBB
LV - Latvia						
via Lübeck			Further connections		8	DUSS
N - Norway						
via Kiel			Further connections		8	DUSS
via Lübeck			Further connections		8	DUSS
via Göteborg			Further connections		13	HBB
NL - The Netherlands						
Rotterdam	1-6	B	1-6	B	1	DIT/D3T
Rotterdam MVTE	1-5	B	1-6	B	8	DeCeTe
Rotterdam RSC	1-5	B	1-5	B	5	DIT
Rotterdam RSC	1-5	A	1-4	B	8	DUSS
Rotterdam	-	-	1, 3, 5	B	12	GWV
PL - Poland						
Dabrowa Górnicza	-	-	-	-	5	DUSS
Dabrowa Górnicza	4, 6	C	1, 6	E	8	DUSS
Dabrowa Górnicza	2, 4	D	3, 5	F	8	DUSS
Gadki (Poznan)	1, 2, 3, 5	B	2, 3, 4	B	8	DUSS
Gadki (Poznan)	-	-	6	C	8	DUSS
Gadki (Poznan)	1, 3, 5	C	1, 3	C	5	DUSS
Gadki (Poznan)	1, 3, 5	C	5	E	5	DUSS
Kutno	3, 6	B	2, 5	B	10	D3T
Pruszkow (via Poznan)	2, 4	C	2	D	8	DUSS
Pruszkow	2, 6	D	1, 4, 6	E	8	DUSS
Wroclaw	2, 4	C	4, 6	E	8	DUSS
Wroclaw (via Poznan)	1, 3	D	2	D	5	DUSS
Wroclaw	-	-	2	D	8	DUSS
RO - Rumania						
Curtici via Budapest					5	DIT
Curtici via Wien					6	DIT
Ploiesti via Budapest					5	DIT
RUS - Russia						
Moskau	2, 4, 6	-	-	-	14	DIT
via Kiel			Further connections			
S - Sweden						
via Lübeck und Kiel			Further connections		8	DUSS
Ålmhult	1-4	B	1-5	B	13	HBB
Ålmhult	5	D	-	-	13	HBB
Göteborg	1-4	B	2-5	B	13	HBB
Göteborg	5	D	6	D	13	HBB
Katrineholm	1-5	B	1-5	B	13	HBB
Katrineholm	6	C	6	C	13	HBB
Nässjo	1-4	B	1-5	B	13	HBB
Nässjo	5	D	-	-	13	HBB
SK - Slovakia						
Bratislava	1-5	C	1-3	C	8	DUSS
Bratislava	-	-	4, 5, 6	E	8	DUSS
Dunajska Streda	-	-	2, 4, 6	C	9	DIT
Cierna nad Tisou	5	F	3	F	8	DUSS
Zilina	1-5	D	1, 2, 6	D	8	DUSS
Zilina	-	-	3, 4, 5, 6	F	8	DUSS
Zilina	-	-	1, 6	E	8	DUSS
Kosice via Lovosice					8	DUSS
SLO - Slovenia						
Ljubljana	1, 3	C	1, 3	C	8	DUSS
Ljubljana	2, 5	D	1, 5	E	8	DUSS
Ljubljana	4	E	-	-	8	DUSS
Ljubljana	2, 3, 4, 5, 7	C	2, 3, 4, 5, 7	C	11	DKT
TR - Turkey						
Istanbul (Penduk) via Triest	-	-	-	-	13	HBB
Istanbul (Penduk) via Triest	3	F	5, 7	F	8	DUSS
Istanbul (Penduk) via Triest	2, 5	G	4	G	8	DUSS
Istanbul (Penduk) via Triest	1, 4	H	2, 3	H	8	DUSS
Tekirdag via Triest	3	G	4	G	8	DUSS
Tekirdag via Triest	2	H	7	J	8	DUSS
Tekirdag	1, 3, 5	F	1, 3, 5	F	15	GWV



Important combined water and rail destinations.

- National railway transportation
- Ship connections
- International railway transportation
- Indirect connections

- 1 - 7 = Montag - Sunday
- Dep. - Day of departure
- Arr. - Day of the arrival
- Op - Operator
- A - Arrival on same day
- B - Arrival one day later
- C - Arrival two days later
- D - Arrival three days later
- E - Arrival four days later
- F - Arrival five days later
- G - Arrival six days later

OPERATORS

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2 duisport agency	+ 49 (0) 203-803-415	+ 49 (0) 203-803-430	dispo_dpa@duisport.de
3 Ewals Intermodal NV	+ 49 (0) 2065-89 3-0	+ 49 (0) 2065-89 31 99	joerg.wille@ewalsintermodal.com
5 Hupac	+ 41 (0) 90-6 95 29 20	+ 41 (0) 90-6 95 28 01	avalenti@hupac.ch
6 Interferryboats	+ 32 (0) 32 70 27 00	+ 32 (0) 32 70 97 74	edwin-schepens@interferryboats.be
7 Italcantainer	+ 39 (0) 5166-5 10 35	+ 39 (0) 5166-5 09 91	an.gennari@fslogistica.it
8 Kombiverkehr	+ 49 (0) 69-79 50 50	+ 49 (0) 69-79 50 51 19	Info@kombiverkehr.de
9 Metrans	+ 42 (0) 267 29 31 36		hornik@metrans.cz
10 PCC	+ 48 (0) 585858 210		sales.intermodal@pcc.eu
11 Rail Cargo Austria	+ 43 (0) 5 77 50	+ 43 (0) 5 77 50 700	info@railcargo.at
12 Rhein-Ruhr-Terminal Gesellschaft	+ 49 (0) 203-31 85 60	+ 49 (0) 203-31 85 622	info@rrt.container-terminal.de
13 Samskip	+ 31 (0) 38 385 2623	+ 31 (0) 38 385 2627	niels.van.der.vlist@samskipvandieren.com
14 Trans Eurasia Logistics GmbH	+ 49 (0) 30-29 75 48 00		guchmazova@trans-eurasia-logistics.com
15 BALO	+ 90 (0) 232 479-0999	+ 90 (0) 232 479-4888	info@balo.tc
16 CFL	+ 352 (0) 519 810 606	+ 352 (0) 519 810 611	sebastian.bideau@cfl-mm.lu

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DIT	+ 49 (0) 2065-49 90	+ 49 (0) 2065-49 92 90	info@dit-duisburg.de
DKT	+ 49 (0) 2065-89 35 00	+ 49 (0) 2065-8 93 50 20	contact@dkt-duisburg.de
DUSS	+ 49 (0) 203-80 90 50	+ 49 (0) 203-8 09 05 55	duisburg@duss-terminal.de
GWV	+ 49 (0) 203-31 85 60	+ 49 (0) 203-31 85 622	gateway@rrt.container-terminal.de
HBB	+ 49 (0) 203-803 4427		dpa-bahn@duisport.de

All data in the rail schedule are based on information provided by the operators without engagement.

duisport - The Port

The port of Duisburg, at the confluence of the Rhine and Ruhr, is the largest inland port in the world with handling volumes of 110 million tonnes and value creation of 3 billion euros per year.

The trimodal (water, rails and roads) logistics turntable duisport acts as a hinterland node for the seaports and as a gateway for goods transport to Central Europe. In addition to goods handling (primarily merchandise in containers, import coal, iron/steel, mineral oil/chemicals) the logistics location offers numerous logistics services.

duisport – the company

Around 300 logistics oriented companies are based in the Port of Duisburg. In total over 20,000 jobs in Duisburg depend on the port, 40,000 in the region. Port induced investments made by companies at the location amount to more than 250 million euros a year.

duisport – the port Group

Duisburger Hafen AG is the holding and management company of the Port of Duisburg. The duisport Group, which the subsidiaries of Duisburger Hafen AG also

belong to, offers full service packages in infra- and suprastructure including relocation management for the port and logistics location. Logistics services supplementing the portfolios of companies based in the port complete the Group's service spectrum. Thus the duisport Group sees itself as a partner of the logistics sector and makes its own contributions to optimizing transport chains to deliver to and from industry and retail.

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Ship Reporting Station

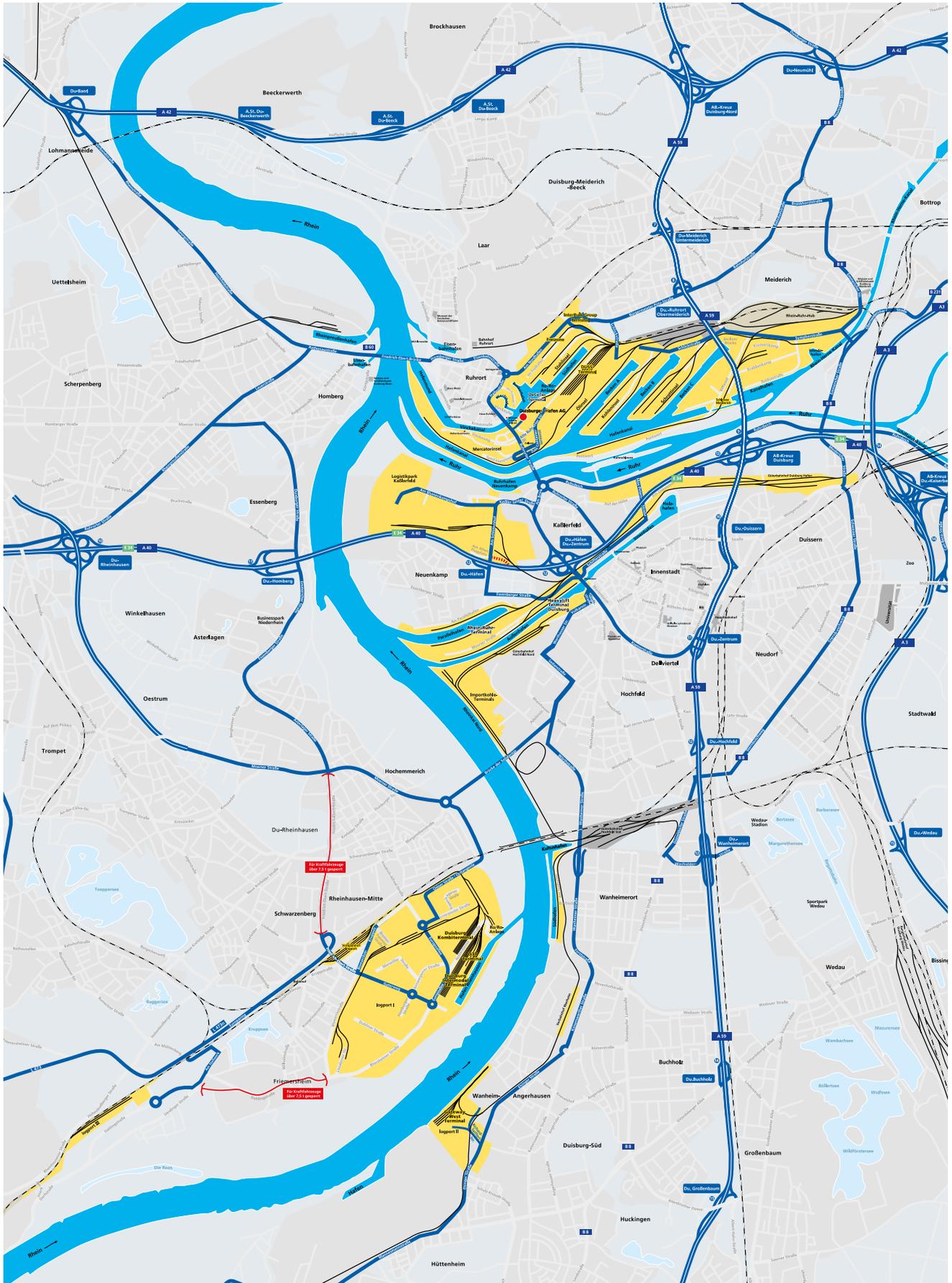
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The Web Portal

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Corporate Communication

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- Motorway
- Important connecting road
- Important connecting railway
- duisport Port area
- Railway
- Water area
- Planned feeder road
- Headquarters of Duisburger Hafen AG

