innofreight

ANNUAL REVIEW 2014

The Innofreight Team and our Technology that Serve our Customers in Europe Every Day

Published in December 2014

PREFACE

The year 2014 was first and foremost the year we successfully launched the InnoWaggons on the market along with the special superstructures, such as, for instance various types of RockTainers which were newly developed for this very purpose. The first half of the year witnessed the satisfactory completion of the process aimed at obtaining the TSI approval while ÖBB Technische Services in Miskolc commenced the serial production. The first standard waggons were delivered in July and by the end of 2014 as many as 60 double wagons are being used on an international scale by ÖBB. In cooperation with voestalpine, for the very first time, we managed to use high strength structural steel for the production of vehicles in rail vehicle production by applying alform welding systems.

That is a major step towards lightweight construction and improved efficiency through optimisation of the load. In this year's Annual Review we will focus on the launching of the new InnoWaggon on the market in cooperation with ÖBB.

However, this year we achieved also other international successes which are worth mentioning, one of them being the developing of our 30-feet Open-Top Container fleet so that it consists of more than 500 units – our cooperation with company Nyylo has proved to be successful. Enjoy the reading of our Annual Review – you will see that we have also planned some innovations aimed at optimisation of your logistics for the year 2015.

THE MANAGEMENT BOARD SAYS THANK YOU

On behalf of the whole international Innofreight team we would like to thank you all most sincerely for your loyalty and the effective cooperation.

The year 2014 marks a milestone in the history of our company. For the first time we supply systems – we offer you specially tailored solutions consisting of the InnoWaggon, optimised containers and the relevant unloading technology. It is the improved concept of maintenance and the significantly increased net load when compared to special waggons that allow us to gain cost advantage for you. This is what makes our system so attractive when we look ahead. In 2014 more than 600,000 container transports with the Innofreight systems ran on rails – all of them were accident-free and environment-friendly, and we feel proud of it. All that was possible in various weather conditions – we had a chance to prove the process reliability of our WoodTainer system also at extremely low temperatures in the Rail Tec Arsenal's Climatic Wind Tunnel located in Vienna.

Our innovations, your competitive advantage in logistics – we take you to the top!

We would like to wish you and your loved ones a Merry Christmas and a Happy New Year 2015.

DI Peter Wanek-Pusset & Bernhard Grentner

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voestalpine

...the Gate to the World of Iron Ore Transport

It is Innofreight's latest innovation – the ***RockTainer ORE*** *that enters this gate to a promising future. Due to this promising future it is not that easy to compile a review of its so far rather short past; a prospect would be more appropriate.*

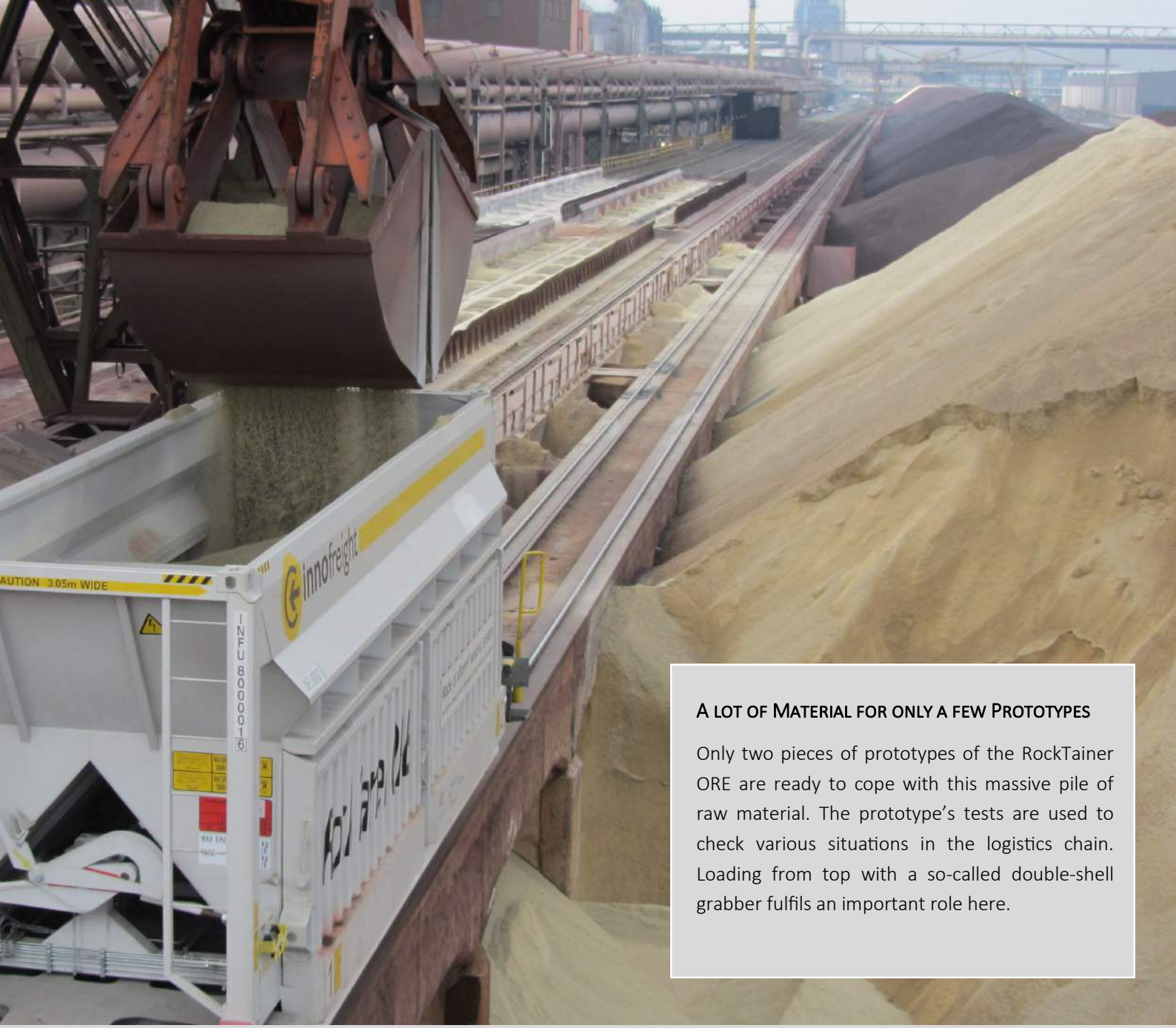
IT ALL BEGAN IN DONAWITZ

Back then in winter 2012/13 – the concept of the InnoWaggon's prototype was quite well developed, the final assembly was done with all available manpower at ÖBB Technische Services in Jedlersdorf – the Innofreight team got the opportunity to watch iron ore unloading of Fal-waggons (waggons with sudden unloading induced by gravity) at voestalpine Stahl Donawitz.

Those unloadings left the team with strong impressions, so did the explanations provided by the waggon-unloading teams. Both the impressions and explanations awoke curiosity concerning iron ore – the very own raw material for steel production – and the railway waggons employed for its transportation. Considering the great age and the low payload of waggons the need for optimisations was obvious and without a doubt. But which optimisations could increase the work safety and which facilitate the process of unloading at the receiving steel plant – these questions could have been answered only by the very specialists themselves: the iron ore unloading teams at voestalpine Stahl Donawitz!

Who else, if not them, knew better where the lever for optimisation needed to be placed? In the course of several visits and numerous discussions the Innofreight team collected and considered every single hint and detail – the more of them the longer the lever for optimisation. From a technician's point of view the equation "InnoWaggon + RockTainer ORE = the new iron ore equipment for voestalpine" needed to be solved.

The year of birth of the RockTainer ORE was 2013 – the decision to develop a brand new container was made because the desired solution to that equation had to be without a single compromise. The desired solution should outperform the existing waggon equipment – outperform both in terms of functionality and in terms of payload.



A lot of Material for only a few Prototypes

Only two pieces of prototypes of the RockTainer ORE are ready to cope with this massive pile of raw material. The prototype's tests are used to check various situations in the logistics chain. Loading from top with a so-called double-shell grabber fulfils an important role here.

voestalpine Linz – Origin of alform® und durostat®

The technical concept of the new RockTainer ORE was defined rather fast. As far as choosing the right specification of steel is concerned, the Innofreight team fully relied on the advice of experts from voestalpine. After having participated in several meetings in Linz and having considered the operating experience of logserv maintenance professionals, the best material mix was found and it consisted of alform® and durostat®. This way it was possible to achieve both a consistent lightweight design and wear and tear durability while using domestic steel products

The process of finalising the design details did not only mean finding and defining the right steel specification, but also fully guaranteeing the demanded functionality. Only then we could be sure that the RockTainer ORE will become an optimal container for the local unloading infrastructure in Donawitz and in Linz.

First Tests with the Prototype of the RockTainer ORE

If we wanted to use the railway jargon, we could say that all lights were set to green and all switches to full speed ahead for the production of the first two prototypes of the RockTainer ORE. Finally, they were delivered in November 2013. On 16th December 2013, the first tests were carried out during which both loading and unloading was done directly in Donawitz. These internal tests constituted the best preparation to achieve the goal we set: to reach the top of iron ore mining. Since the RockTainer ORE was constructed to get to the top and even to go beyond – that top as it was understood by the Innofreight team could have been only one: **Erzberg**!

On 21st January 2014, the first loading of the RockTainer ORE prototypes took place on Erzberg in Eisenerz. For the first time in their development history the combination of the InnoWaggon plus the RockTainer ORE was a part of a regular train with a fixed schedule for supplying voestalpine Stahl Donawitz with domestic iron ore.

After additional tests with pellets and fine ore in Donawitz the complete equipment was also presented and tested at voestalpine's plant in Linz. All those tests and trials were essential to bring the design of the RockTainer ORE onto a level suitable for serial production.

We could not have imagined carrying out all those tests so smoothly without the flexibility and motivation of the staff and the shunting team at voestalpine industrial siding and Rail Cargo service point in Donawitz.

Production of first Series of the RockTainer ORE

The first series of the RockTainer ORE went into production at Innofreight's long-term partner Container d.o.o. in Celje and was ready by October 2014. At the same time the first InnoWaggons produced by ÖBB Technische Services in Miskolc, Hungary, were delivered. From now on the first block train was on track. Its first destination should not have been easier or less demanding than the prototype's and was again defined to be Erzberg! Up there on 24th October 2014, the very first loading of the very first block train was celebrated. From that day on our everyday challenge and duty is to ensure and guarantee the potential and reliability of the brand new transport system.

Quo vadis?

If anyone asked now a little iron ore grain what it would like to become one day and where it would like to go when it grows older, its answers could not be much more different from one another: one would like to become an ORE RockTainer, another one to become a wire, again another one to become a metal sheet for automotive purposes, the last one to become a high performance railway line.

That last little iron ore grain effectively extends voestalpine's portfolio downwards – downwards towards the railway track bed. The transports with the RockTainer ORE supply voestalpine with iron ore as a raw material necessary to offer its wide portfolio, ranging from the bottom edge of the rail to the upper edge of a container.

Block Train Parameters

The new Erzberg block train consists of 10 InnoWaggons, type Sggrrs, and 20 pieces RockTainer ORE. The overall length of the waggons amounts to 267 m and they roll on 80 axles inside ELH bogies and are decelerated with minimum noise emissions by Knorr's compact brake. On track class D the block train's payload is 1,380 tonnes; that equals the block train's gross weight of 1,800 tonnes, again on track class D. That means the net payload per container and per 4 waggon axles is 69 tonnes. These impressive results are a consequence of a consistent lightweight design and the use of the **alform® welding system** by voestalpine.

Double Traction for Double Waggon

Each development partner is now recognised by its own distinctive colour and cooperative design. With these three different paintings the Erzberg block train is probably the flashiest freight train in Europe. Whether the light colour of the signals should match the train colours is still under discussion, though. Underneath the painting is finest (in reference to quality and grain size) steel from Austria: alform ® and durostat ®. And finally, inside is pure iron ore from Austria.

Design Characteristics

Each RockTainer ORE consists of two separate loading chambers. Each loading chamber is being promptly emptied by means of gravity unloading through two side flaps. Each side flap is connected to a rotational shaft through 2 pieces of push-pull bars. Each loading chamber has its own rotational shaft that is rotated by a pneumatic cylinder. This triggers off prompt gravity unloading of the whole block train straight into an underground hopper.

Compressed air needed to operate the pneumatic cylinder runs through a separate air-line called the main air reservoir pipe integrated into each InnoWaggon and spreads the compressed air across all wagons. The locomotive stores the necessary compressed air in this reservoir. This air-line is a rather outstanding feature of the InnoWaggon as normally standard container waggons are not equipped with it.

One single control lever is enough to operate the two side flaps of a loading chamber. Standard waggons have so far been partly equipped with up to four separate switch levers which needed to be pressed. At the same time this one control lever offers the same safety against unauthorised opening on open tracks as well as against accidental and premature opening in the place of unloading. This simplified and easier operation while preserving the same level of safety is the major contribution of the RockTainer ORE to the increased working comfort.

The RockTainer ORE does not have the so-called cam-lock shafts. These cam-lock shafts are mounted on standard waggons underneath their lower longitudinal edge of their loading chamber. The cams grab the lower longitudinal edge of a side flap and press it against the waggon's body. A number of practical advantages were gained as a result of getting rid of these shafts. We do not have to worry about an additional movable element which, moreover, is maintenance-prone. Daily usage increases wear and tear on the cams' gliding surfaces and rubs away their lubrication. For that reason unloading staff has to use massive levers to force the cam-lock shaft to rotate and release the side flaps. This procedure, i.e. the use of a massive lever, is not necessary at all in the case of the RockTainer ORE; a major contribution to the increased working safety.

After opening the side flaps material starts to leave the loading chambers immediately. At the very beginning of unloading the cam-lock shafts are fully exposed to that very first material flow. This exposed position causes constant and regular need of greasing the gliding surfaces of the cams; and therefore the use of a lever for opening.

In addition to that, the cam-lock shafts need to be cleaned on a regular basis – on the one hand to ensure their full functionality and on the other hand to avoid the loss of rest material during transportation. The InnoWaggon combined with the RockTainer ORE does not need such cleaning activities at all – a major contribution to the acceleration of the unloading process.

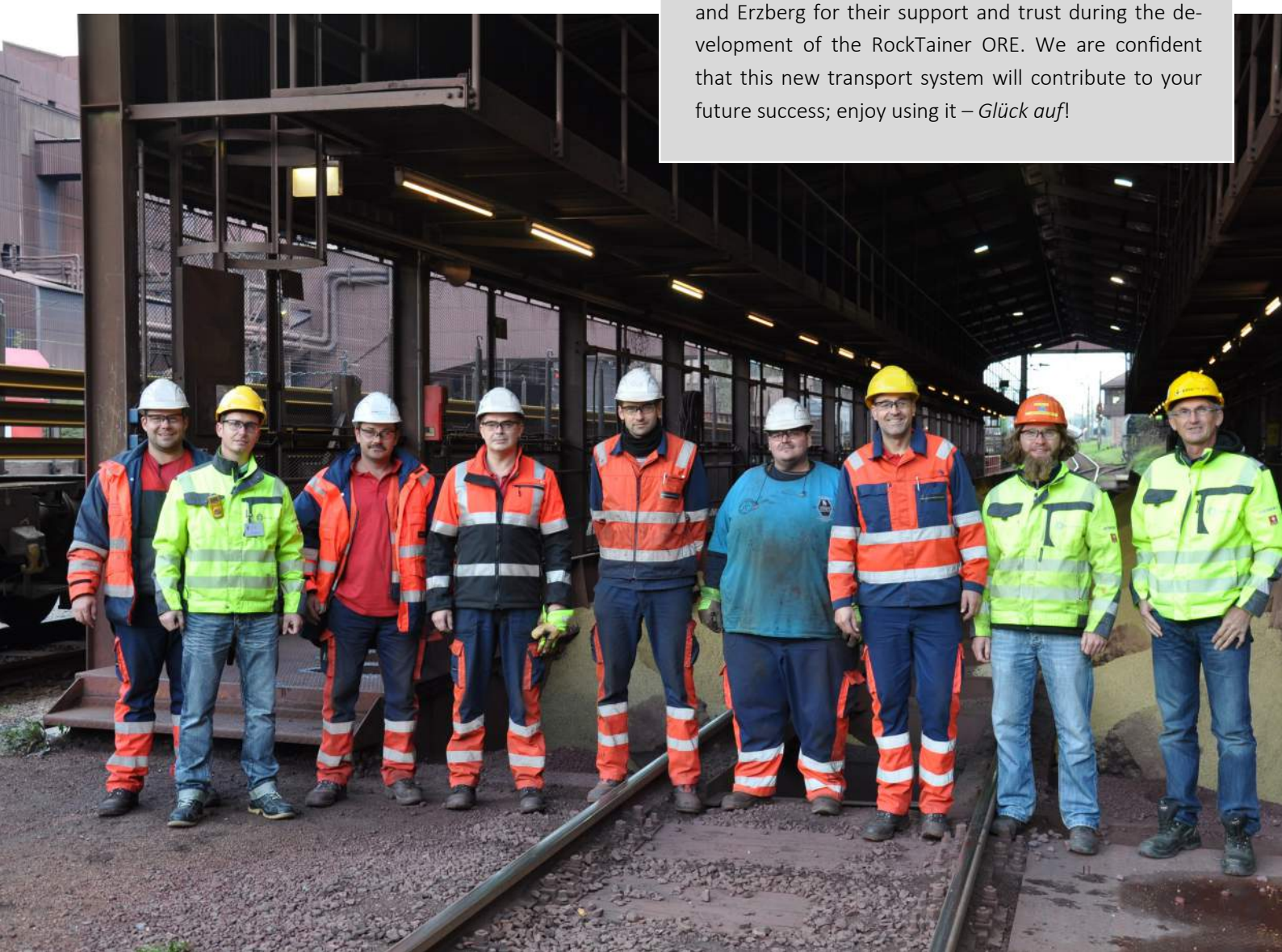
The design of pneumatics and kinematics together with the material's pressure against the side flaps create a significant air buffer inside the pneumatic cylinders during opening. This air buffer acts as a damper and as a smooth guide for the side flaps to softly reach their end position. As a result a low noise level is achieved – one that has never been achieved before. This noise level simply cannot be reached by standard waggons. Their side flaps crash into their mechanically limited end position without any damping elements. Unpleasant noise emissions go hand in hand with additional wear on affected steel parts. By fully avoiding that RockTainer ORE delivers a major contribution to both working comfort and process stability.

Looking at the overall design of the RockTainer ORE, a lot of effort was invested in making it as wear-resistant as possible. But since ore transport is a heavy duty job, regular maintenance works are necessary – that cannot be ruled and is not up for discussion. The separation of waggon body from waggon frame brings these maintenance works on a higher level. Only few things are as simple as the way the RockTainer ORE can be put off the InnoWaggon and replaced by a new or overhauled unit. The involved InnoWaggon does not need to be taken out of service while the affected RockTainer ORE is being maintained; the InnoWaggon can resume its transport task right after it has been equipped with a spare unit. In other words, only this very part of the iron ore transport system is taken out of service which is in the need of maintenance works. That newly created maintenance dimension is a major contribution to an increased efficiency.

The RockTainer ORE is a great innovation that poses a milestone and sets benchmarks in a number of areas: payload, efficiency, maintainability, working safety, working comfort and process stability

Thank You!

The Innofreight team thanks all staff members and loading/unloading teams at voestalpine Donawitz, Linz and Erzberg for their support and trust during the development of the RockTainer ORE. We are confident that this new transport system will contribute to your future success; enjoy using it – *Glück auf*!



KNAUF

The First InnoWaggon Block Train to Be Used for the Transport of Gypsum to Weißenbach

On 8th July 2014, Knauf, Rail Cargo Group and Innofreight invited 250 international guests to celebrate the launch of the first InnoWaggon block train during the RailShow on the Knauf's premises in Weißenbach bei Liezen. The new waggons produced by ÖBB TS in Miskolc, Hungary, took up the transportation of the first gypsum cargo to Knauf. Knauf, as the first customer to use the InnoWaggon concept for the transportation of gypsum, offered its premises as a venue.

According to the motto 'Rail experience meets innovation' we announced the new age of rail transportation of cargo. Our aim is to bring the logistics services connected with rail transportation of cargo to a higher level – all that for our end customers. Therefore, we chose to rely on universal platform waggons combined with special containers – this way we want to define a new logistic standard in rail transportation of cargo.

Combined with the Innofreight container system, these innovative technologies offer not only a payload increased by approximately 10 % in comparison to that of the waggons used so far, but also an optimally safe and reliable unloading technology, especially during winter – all that is possible thanks to the fact that for the very first time we used the high strength alform® steel produced by voestalpine.

That day was a great success and we would like to thank all our guests for being part of it!

MERTZ

The InnoWaggon‘s Market Launch for the Railway Development Project *Stuttgart 21*

The company Heinrich Mertz Kies- und Sandwerke GmbH & Co. KG, established in 1928, run now by the fourth generation, chose Innofreight with its flexible container system to deal with the supply of raw materials, to supply concrete mixing plants with sand and gravel and to be responsible for the transportation of waste material.

Since mid February 2014, the reliable WoodTainer system with rotary unloading has been employed; the WoodTainers can smoothly operate under harsh conditions. The rotary unloading guarantees, amongst other things, both a prompt unloading, directly in the dump trucks, and efficient and reliable operations during winter.

It was on 10th October 2014 when a special event took place – the representatives of both ÖBB Rail Cargo Group and Innofreight handed over the new InnoWaggons to the company Mertz. This is the first international project for the new InnoWaggons.

This block train which consists of 10 double waggons is expected to transport approximately 200,000 tonnes of sand and gravel to the construction sites of the railway and urban development project *Stuttgart 21* on an annual basis. The traction will be provided by the railway services of Stuttgart with a 6-axle Vossloh locomotive 'Maxima Voith 30 CC' with 5,000PS rented from Mertz.

The plans for 2015 include further development of the transportation. It concerns especially the transportation of excavated materials from tunnel drilling machines to landfills.

ROCKTAINER INFRA

...for ÖBB INFRA

At the beginning of July 2014, in close cooperation with ÖBB INFRA, we started conducting final tests of the RockTainer INFRA combined with the InnoWaggon. The RockTainer INFRA was examined thoroughly at numerous construction sites in Austria under the most severe conditions – at the maximum track elevation, with ballast in the switch area and with side ballast. The hydraulic operation of side flaps as well as the adjustment mechanism of the unloading chutes have proved to be effective. It must be emphasised that the RockTainer INFRA offers its user maximum comfort and safety! So does the working platform on which the operator stands during the unloading – it was designed in accordance with the most recent guidelines for occupational health and safety. Safety devices that prevent the operator from leaving the platform while it is moving or a roof as a weather protection constitute a standard on board.

The comprehensive test phase will be completed by the end of the fourth quarter of 2014, while the preparations for the serial production will commence in the second quarter of 2015. We are glad that with this development we could contribute substantially to the improvement of safety and comfort at railway construction sites!

Steel Pallets

...for Transports of Blooms for voestalpine

The modular concept of InnoWaggons renders also the transportation of long goods possible. For this purpose the waggon is equipped with loading aids – the so-called ‘pallets’.

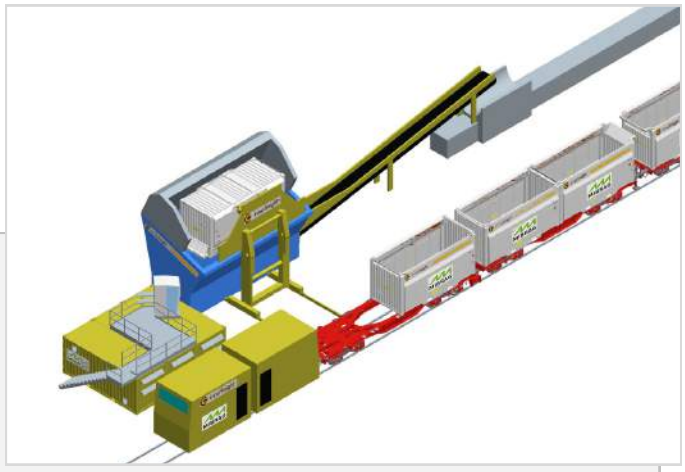
This way, for instance, we can use very short posts for heavy and long steel parts (blooms). Due to minor spatial limitations, these short posts make the crane operator’s work significantly easier – during the unloading he has a clear view of the situation and the loading area edge is situated at his eye level. These excellent operator-friendly and work safety-compliant conditions led to a major damage reduction.

However, should damage to pallets occur, the faulty components may be replaced directly on location by new spare parts ready for use.

As a consequence of this uncomplicated exchange, the waggon’s operation is not interrupted and the time spent on repairs and repair-related travels are kept to a minimum.

If we need to transport light long goods such as for instance pipes, then, the appropriate longer posts will be employed. Also in this case we may use the InnoWaggon’s maximum permitted net payload. In comparison to the waggons that have been used so far, we have managed to increase the payload by approximately 13 %.

The first block train consisting of InnoWaggons and pallets intended for transports of blooms for voestalpine will commence from the end of November 2014.



Transportation of Brown Coal for MIBRAG/EPH

It was in September 2014 when Innofreight secured the consent to a project for a major European brown coal supplier: EPH/MIBRAG. EPH is a leading energy group from Central Europe and it comprises of as many as 40 companies in Czech Republic, Slovakia, Germany and Poland. EPH achieved a strong position on the brown coal extraction market in Germany, while MIBRAG runs the mines of Profen and United Schleenhain. MIBRAG produces over 20 million tonnes of coal every year.

It is Innofreight equipment that runs 2.5 million tonnes of brown coal from Profen to the power plant in Buschhaus. The contract includes 70 InnoWaggons – each with four containers specially designed for MIBRAG, a stationary unloading installation and a shunting robot. The duration of the project is 14 years and it is based on the modular concept developed by Innofreight.

The Transportation of Sugar Beet in Switzerland

Both sugar factories that merged in 1997, Aarberg and Frauenfeld AG, abbreviated to ZAF which changed their name in 2014 to Schweizer Zucker, process 1.8 million tonnes of sugar beet on an annual basis. Out of it as much as 250,000 to 300,000 tonnes become sugar, 220,000 tonnes become beet pulp and 40,000 tonnes pressed pulp.

In order to guarantee a smooth production, SBB Cargo transports 1 million tonnes sugar beets a year with 600 waggons. Since these waggons are very old and in a poor condition, they should be replaced. Another aim is to create a modern and future-compliant beet logistics, starting with taking sugar beet from the field or a loading site at the railway station, reducing the number of waggons by increasing the net load as well as reducing the operations in the sugar beet plant (weighing, sampling, emptying and reducing the shunting activities).

Innofreight supervises every single operation on site, from the loading of sugar beet, through rail transportation and all the procedures in the sugar factory, to the delivery of beet pulp. This helps us understand and optimise the whole process and its every stage.

The next steps of cooperation concern the construction of stationary unloading systems, the conversion of traffic to the Innofreight system for the Frauenfeld factory (the 2015 campaign) and the conversion of traffic for the Aarberg factory (the 2016 campaign).

New Containers for Papierholz-Austria

The first container filled with wood chips that was emptied by means of a new rotating device, carried the inscription: Papierholz-Austria (PHA). It was the year 2004 and at the same time the WoodTainer system's year of birth. All further stages of development of the then completely new logistics system had been reached thanks to the cooperation with PHA and with the support of the factories that participated in this process, i.e. Sappi in Gratkorn, Mondi in Frantschach and Heinzel-Pulp in Pöls.

During the last 10 years of this cooperation we have managed to establish a close and successful partnership that helped us come up with innovative solutions also in respect of round wood transportation and unloading technology, such as, for instance, the container unloading machine in Pöls – a significant milestone for Innofreight.

The first half of 2014 witnessed the placing of as many as 168 pieces of the green XXL WoodTainers on the market. Green, because this is the colour of PHA, but at the same time it demonstrates the association with the green heart of Austria – Styria. The green heart of Styria appeared on one of the containers. This special colour makes the PHA trains easily and immediately recognisable.

In order to occupy a dominant role also in the future, we are constantly testing and employing new concepts and developments with PHA. Currently, we are working on the transportation of 2-meter-long timber in containers from Hungary – the block train will start running from the beginning of 2015.

Transportation of Biomass with Skarna for GDF Suez (PL)

From March 2014 the Innofreight XXL WoodTainer system provides a rail transport of biomass to Połaniec. As a result, the obsolete systems of transportation based on Ea coal waggons were replaced by innovative logistics solutions. Currently, the unloading takes place five times a week, with one train transporting approximately 4200 m^3 of biomass. The trains are arranged by our partner, the company Skarna.

The volume-optimised Innofreight system helps us reduce the number of train runs. Moreover, the biomass unloading time was reduced thanks to the implementation of a forklift truck.

The above mentioned advantages contributed to the acceleration of the trains' cycling time and to the overall improvement of the logistics system of GDF Suez. For the year 2015 we have planned further development of the transportation.

Rohrdorfer Zement

At the beginning of November 2014 we commenced a comprehensive test programme for the cement factory from southern Bavaria – a part of the Rohrdorfer Gruppe or a holding company of Heidelberger Zement. These test runs include the employment of RockTainer ORE or WoodTainer XM for the purpose of the slag sand transportation.

The slag sand will be loaded into containers in a steel factory of an Austrian steel manufacturer in Upper Austria to be subsequently transported to Rohrdorf to the cement factory for unloading. For now, these runs had to be suspended during winter because of low temperatures and the consequent freezing. Our technology ensures an all-year-round transportation. It makes the logistics so much easier for the cement factory!

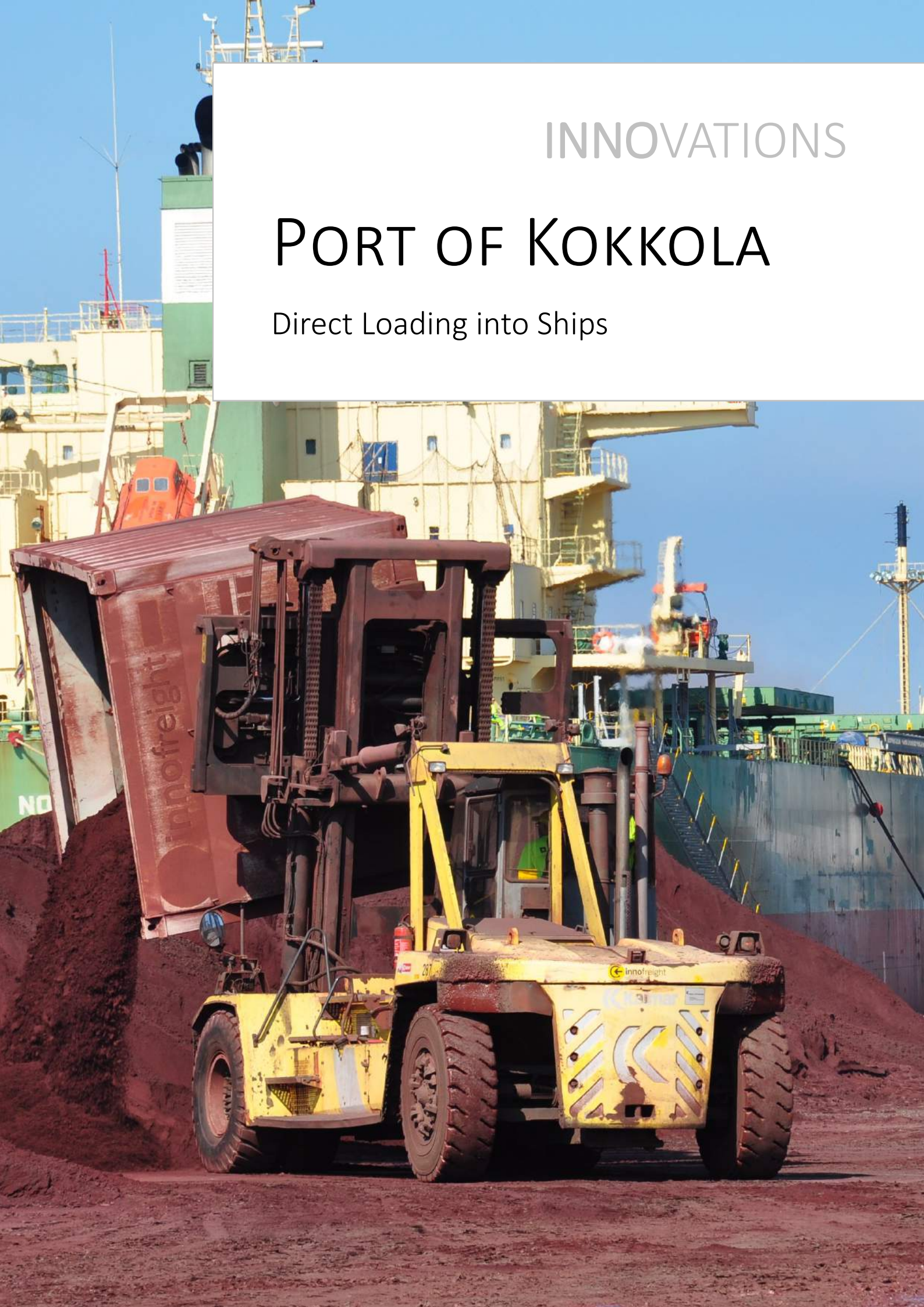
Transportation of Biomass from Belarus to Crescentino (IT)

In a bioethanol plant in Crescentino lignin is being produced as a waste product. In order to generate energy in the plant, lignin is mixed with biomass and then burned. On the Polish-Belarusian boarder biomass is loaded into Wood-Tainers and subsequently transported through Czech Republic and Austria to Italy (the distance from the loading site to Crescentino equals approximately 1,900 km). The unloading in the plant takes place by means of the rotary unloading forklift trucks. Our customer chose Innofreight's WoodTainer system since it ensures the highest net load per block train. In the plant it is necessary to transport biomass to the feeding point (a distance of approx. 300 m from the feeder track) – the use of a forklift truck makes this process quick and efficient. The plans for the year 2015 include increasing the number of block trains employed for transportation from two to four.

AgroTainer for NYYLO

In August 2014, after the holiday break in Sweden, we commenced the coke transportation for VOLVO Group engine blocks' foundry from Czech Republic to Sweden. At the moment there are about 40 containers a month in groups of waggons that arrive at the unloading site. The coke from the producer from eastern Czech Republic is currently clearly of a higher quality than the coke offered by any other producer. What is essential in this case is that as soon as the coke is produced it is being loaded directly into the containers and it is not unloaded until it reaches the end customer – this way we were able to completely reduce the unwanted fines content resulting from repeated reloading. The coke is still of top quality!

At the moment we are holding talks over increasing the amounts and including other coke recipients in the existing logistics network. Forwarder Nyylo plays a substantial role in this international project and is responsible for rendering the transportation as faultless, smooth and optimal as possible. Today Nyylo – with its impeccable references, numerous business partners in industry and approximately 500 AgroTainers in use – is already the largest coke shipping company in Europe.



INNOVATIONS

Port of Kokkola

Direct Loading into Ships

Kokkola is a town in Mittelösterbotten in Finland and it has a population of approximately 50,000. The port constitutes the economic centre of the region – it is mainly the industrial minerals from Finnish and Russian mines that are being delivered by rail and then, loaded into ships.

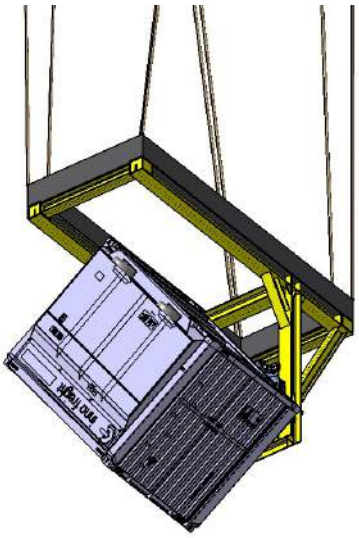
It has been 6 years since Innofreight commenced its business activity in Finland and currently our container systems cover the transportation of approximately 10,000 tonnes of industrial minerals in block trains a day. The unloading takes place by means of our rotary unloading forklift trucks either directly at the quay or in warehouses. Our container technology is the only system that proved to be reliable also at extremely low temperatures. Therefore, it can smoothly operate during winter. As a result, the port capacity may be used as efficiently as possible. And it is our technology that significantly contributed to the development of the Port of Kokkola and its daily operations.

In the course of intensive preliminary talks with the port operator Rauanheimo we made a decision to start working on developing a **port rotator**. The innovation consists in the future possibility of loading the Innofreight containers directly into ships by means of port cranes.

This would bring us the following enormous advantages:

1. The currently popular method of loading by means of grippers leads to losses in quality for many products (e.g. coke – increased fines content).
2. No possibility of being mixed with other products, no contamination with sea water, e.g. by leaving the load on the quay wall.
3. Quicker transfer as a result of combining the forklift truck unloading at the quay with the direct loading into the ship; shorter waiting time of the ships.

The **port rotator** is a container rotating device which is picked up by a container spreader and which is equipped with a rotating device at its lower end. The Innofreight container is picked up with forks and as soon as it reaches the unloading position on the ship, the containers are emptied by means of rotary unloading.



The process of developing another model is underway – this time for cranes which are equipped with hooks instead of spreaders.

Possible applications of the above mentioned innovation are not limited only to ports. Industrial plants that process **massive amounts of raw materials** such as steel factories use very frequently cranes for in-house logistics purposes – these companies will also benefit from the use of a **port rotator**. These processes may be simplified and accelerated, we could avoid damage to waggons, e.g. resulting from excavating, and we could completely forget about subsequent cleaning.

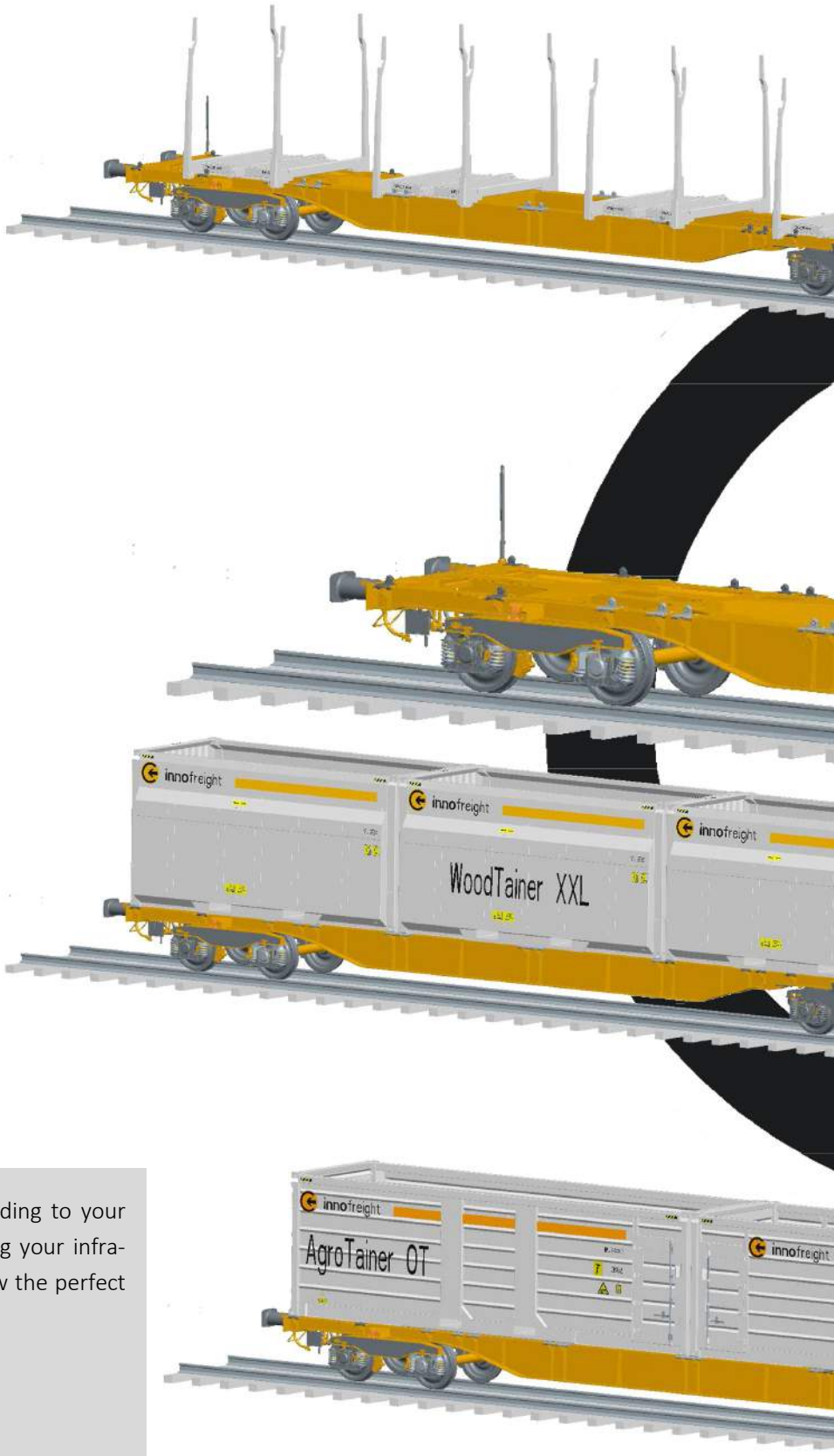
Container terminals could also use the port rotator technology. Reach stackers are equipped with a container spreader – this way these mobile devices could in the future transfer Innofreight containers at the rail terminals directly into dump trucks. For instance, such advantages could be very useful for the logistics of building materials.

The first port rotator will commence its operation at the Port of Kokkola in January 2015.

The new 60-feet light InnoWaggon to be introduced in 2015 will be a new member of the InnoWaggon family. This new waggon – weighing **only 16.5 tonnes** – is a perfect solution for the transportation of light bulk goods such as, for instance, round wood, wood chips and sugar beet, but also for our 30-feet AgroTainer used in the inter-modal transportation.

Naturally, these waggons are manufactured in accordance with the most recent TSI regulations. The bogies to be employed are equipped with chassis with Knorr's compact brake. This is how it will be possible in the future to combine Innofreight's bulk goods containers designed to be unloaded from the sides and from the middle with the new 60-feet light InnoWaggon by means of gravity – just as it is now possible with the 40-feet InnoWaggon.

With both the new 80-feet InnoWaggon – the short-coupled entity – and the new 60-feet light InnoWaggon you may transport your goods with the highest efficiency. When combined with our WoodTainer system, we offer you load volume of up to 150 m^3.



In addition to the containers optimised according to your needs and the unloading technologies meeting your infrastructural requirements, Innofreight offers now the perfect waggons as well.

EVERYTHING FROM ONE SINGLE SOURCE!

60ft-light-InnoWaggon

THANK YOU FOR THE SUCCESSFUL COOPERATION!

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