NIKRASA – Non-crane-able semi-trailers become crane-able

Key Words:
Freight consolidation and transhipment, Innovative vehicles, vessels and equipment, Access to transport networks, infrastructure and nodes, Business to business (B2B) solutions, cooperation

Description
The innovative NIKRASA system makes it possible to easily transfer non-crane-able semi-trailers from road to rail within the existing standards and infrastructure. This transfer is done without any changes at the wagon, the semi-trailer or the business processes. The already existing transshipment sites in the terminals for combined traffic can be used without any additional investments and thus, the utilization of these terminals can even be improved.

Benefits
• No additional investments for semi-trailers
• No additional investments for wagons
• No additional investments for terminal infrastructure and equipment
• Improved terminal utilisation
• Higher service flexibility brings additional customers in transhipment terminals

Starting point/objectives/motivation:
Making non-crane-able trailer into crane-able without special adaptations of trailers or wagons can contribute to shift goods from road to rail. The challenge was how to enable trailers to be lifted onto wagons by cranes without large investments and making use of existing technologies requiring only minimal investment into terminal and transport platforms.

Craning of non-crane-able semi-trailers onto railway cars has so far been impossible, unless the trailers were specially designed as a crane-able semi-trailer. However, these kind of trailers have disadvantages such as higher investment costs, less loading capacity (weight) and the efforts for managing these trailers (having the right trailer at the right place at the right time)...

These crane-able trailers can be loaded by standard transshipment equipment (e.g. reach stacker, crane) into standard pocket wagons.

In past years, many different approaches were made to overcome this limitation and to make combined transport available for all forwarders and operators:
- Craneable semi-trailers are held for rent
- “Rolling motorway”: Another way to bring non-crane-able semitrailers on the rail is the rolling motorway
- Special flatcars were designed, which in combination with specifically adapted terminals do allow rolling the trailers onto trains.

A new approach is to convert a standard semi-trailer into a crane-able semi-trailer.

Success factors
With NIKRASA system customers have an additional opportunity to use the combined traffic with the existing standard transport means (i.e. the non-crane-able semi-trailer) and shift more goods from road to rail. The NIKRASA system eliminates the need for specially adapted trailers and/or wagons as existing trailers can be lifted to pocket-wagons. This is a significant benefit for loaders, transport companies and our environment. No additional investments into semitrailers and/or wagons is required.

Supported strategic targets
• Ideal utilisation of infrastructure
• Competitive logistics and transport system
• Increased efficiency / productivity of logistics processes
• Ideal utilisation of infrastructure
• Increased competitiveness
• Efficient public spending
• Reduced emissions
### Case description (cont.):

The NiKRASA-system is made of two parts: A platform in the terminal, and a transport platform. The transport platform fits into the terminal platform. The terminal platform allows adjusting the semi-trailer on the transport platform. The grippers of the reach stacker or portal crane adjust with the transport platform and lift it onto the railway car, together with the semi-trailer (see title page). The transport platform remains on the wagon during the railway transport. Thus, it is used for loading and unloading. The terminal platform stays in the terminal and can be moved and stored when it is not used in the terminal.

### More information:

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Date of last review: 3. 12. 2014

### Transport mode or supply chain elements:

- Transport  
- Transhipment

For NiKRASA, a heterogeneous competence team has deliberately been set up. Thus, a broad range of strengths, competencies and knowledge has been integrated in the development.  
- The bayernhafen Gruppe (combined traffic terminal)  
- TX Logistik (railway company)  
- LKZ Prien GmbH (logistics competence centre)

NiKRASA has been funded by the Bavarian Ministry of Economic Affairs, Infrastructure, Transport and Technology and by the Austrian Ministry for Transport, Innovation and Technology in the frame of the innovation program for combined traffic.

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