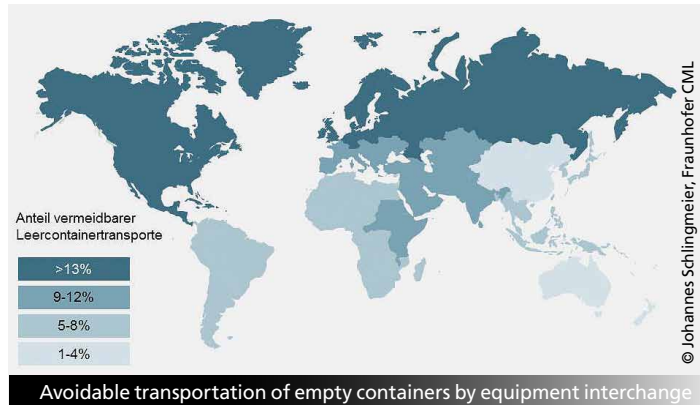


### HIDDEN POTENTIAL: REDUCTION OF EMPTY CONTAINER TRANSPORTATION

30 billion US dollars: These are the costs incurring every year to carrier and leasing companies for the transportation of empty containers. In total 20 percent of all containers transported by sea and even 40 percent of all containers transported overland are empty. As a huge part of these costs is not borne by the customers but the carriers themselves this is an enormous economic load.



How can this immense amount of movements with unloaded containers be reduced? The necessity for repositioning empty equipment arises, amongst other things, from company-specific imbalances. There is potential for improvement: An empirical study conducted by the Fraunhofer CML this year showed that the transportation of empty containers can be decreased significantly by

the cooperation of carriers, and in the process the costs can be reduced.

In the way of an equipment interchange – i.e. the exchange of containers amongst the carriers – the participating companies can avoid five to ten percent of the overall empty container transportation. The implementation

of these considerable potentials requires an intensive cooperation. The Director of the Fraunhofer CML, Prof. Carlos Jahn, is satisfied with the result: “As yet the missing potential has obviously been the main reason that a cooperation had not been used so frequently. But our study proves the opposite. Therefore it could provoke the carriers to rethink.”

### FRAUNHOFER CML PROVIDES SUPPORT IN THE CERTIFICATION PROCESS

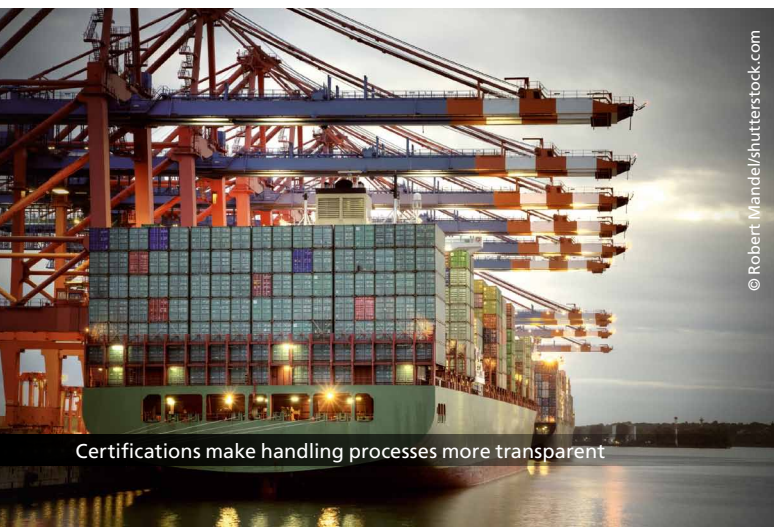
Ports and terminals have to meet the challenge of making a contribution to the environmental protection with increasing frequency. The pressure to act is rising because customers, partners, stakeholders and the public are developing an in-

creasing environmental awareness. They demand, amongst others, to use energy and the available resources as efficient as possible.

One possibility to meet these requirements is the establishment

and implementation of environmental and energy standards. There are various advantages: employees are sensitized for economizing resources, emissions can be reduced, potentials for saving energy be identified and implemented. This does not only enable a reduction and control of the costs but also an increase of the competitiveness.

“The Fraunhofer CML supports port authorities and terminal operators both in the selection and the subsequent implementation of suitable standards”, explains Prof. Carlos Jahn of the Fraunhofer CML. He added, “We also support our customers in the optimal preparation of the subsequent certification.”



Certifications make handling processes more transparent

### FOREWORD



Dear readers,

Do you know how many empty containers are underway on the roads all over the world every day? Overland it is more than 40 percent of all movements! Reason enough for the Fraunhofer CML to examine this unused potential more carefully and develop strategies for minimizing the transportation of these empty containers. Read about the results of this study in this newsletter.

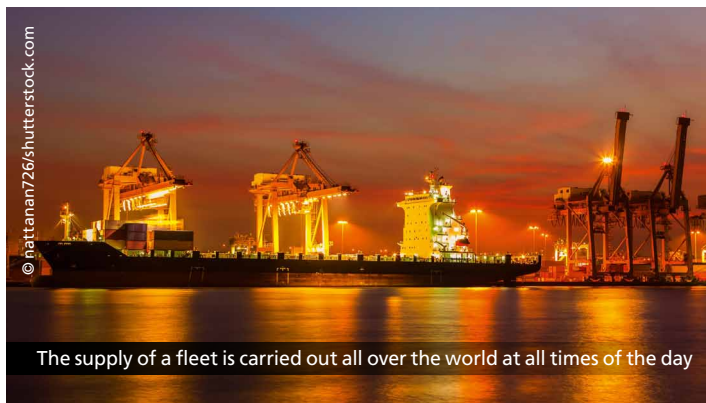
The CML has also examined the transport market between Saxony and the Port of Hamburg in its HILDE project (HILDE = “Hinterland solutions by efficiency increases”). The main question of the study was how to cope with the increasing traffic volume and connect the Land of Saxony to the world markets.

On behalf of the Fraunhofer CML I wish you a Happy Festive Season and a Prosperous New Year 2015.

Enjoy reading our Newsletter

Sincerely,  
Prof. Carlos Jahn,  
Head of the Fraunhofer CML

## COST CUTTING POTENTIALS FOR THE SHIP MANAGEMENT



In times of low charter rates and an existing tonnage surplus the operating costs remain a decisive factor for the economic success of shipping companies and ship managers. Economies of scale based on a fleet-wide administration of spare parts or resources have hardly been used in the procurement so far. Cross-sector methods and tools from the supply-chain management (SCM)

and the industrial material logistics are also seldom used. For shipping companies the inventory optimization in particular is a starting point for the identification of existing optimization potentials as well as the reduction of procurement costs. To meet this challenge the Fraunhofer CML has developed a mathematical frame model for a cost-oriented optimization of the procurement,

storage and transport logistics that can be integrated in the individual ERP system.

Adapted to the company-specific information and decision requirements of the management it is supposed to ensure the fulfillment of the existing spare parts requirements for the maintenance of the operated ships in the right manner and quantity at the right time and the right place.

The aim of the process is to achieve an optimum spare parts administration with a minimization of the costs for logistic measures and the failure and out-of-stock costs at the same time. Apart from quantity and turnover discounts and replacement times, the model can also take capital commitment costs or the selection of various traffic modes into consideration.

## HILDE – HINTERLAND SOLUTIONS BY EFFICIENCY INCREASES

Which possibilities are there to cope with the increasing traffic in the future in a resource-efficient way and ensure a good connection of the expanding Saxon economy to the world markets at the same time? Apart from the Fraunhofer CML seven other project partners – amongst them authorities, research units, associations and companies – are dealing with this central issue.

The focus of this question is on the use of the carriers – railway and inland vessel – in the hinterland traffic between the Port of Hamburg and Saxony. When analyzing the transportation market the experts found out that by now a large part of the transport volume in the container traffic between Hamburg and Saxony has been handled by railway and inland vessels.

As the infrastructure is heavily stretched here and there the question arises if and how this high volume can be kept or even enhanced, also at a high increase

of traffic, in order to avoid an additional transportation by trucks. To answer the question the CML and the project partners have conducted surveys of the partners involved in the transport from industry, commerce and logistics. "Based on our surveys we have already been able to derive optimization measures and elaborate the first recommendations for action. This includes, for example, the support of a better networking of the IT systems between inland harbors, inland shipping companies and sea terminals", said the project manager, Ralf Fiedler.



## IN BRIEF

The Fraunhofer CML is expanding its services in the field of **harbor and terminal planning**. The new planning tools include, for example, an efficient traffic simulation software. In addition to that the new planning laboratory will get a so-called **Powerwall** – a wall with a high-resolution 5 x 3 meters screen. This wall will be of particular importance for planning workshops.

At the **Intermodal Europe 2014** 100 exhibitors – amongst them container manufacturers and leasing companies, container shipping companies and terminal operators – showed a broad supply. The Fraunhofer CML was also represented with a stand in Rotterdam and introduced amongst other things its innovative planning tools. Furthermore Verena Flitsch of CML gave a lecture about the increase of the container volume.

On February 20, 2015 the Fraunhofer CML and the IPRI GmbH are organizing in Hamburg the **Maritime Symposium „After sales services in the maritime supply industry – Identification of potentials, increase of revenues“**. Benefit from the opportunity of having an intense exchange of experiences and ideas. Further information and registration under [www.cml.fraunhofer.de](http://www.cml.fraunhofer.de).

### + + + DATES + + +

- **e-Navigation underway 2015**  
27.–29. Januar 2015, *M/S Pearl Seaways (Kopenhagen–Oslo)*
- **Digital Ship 2015**  
18.–19. März 2015, *Hamburg*
- **IAPH Hamburg 2015**  
1.–5. Juni 2015, *Hamburg*

## IMPRESSUM

Fraunhofer Center for Maritime Logistics and Services CML

a unit of Fraunhofer IML  
Schwarzenbergstraße 95D  
21073 Hamburg, Germany  
Phone: +49 40 428 78-44 51  
Fax: +49 40 428 72-44 52  
[info@cml.fraunhofer.de](mailto:info@cml.fraunhofer.de)  
[www.cml.fraunhofer.de](http://www.cml.fraunhofer.de)

Konzeption und Gestaltung:  
RAIKESCHWERTNER GmbH  
[www.raikeschwertner.de](http://www.raikeschwertner.de)