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 increasing 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.”
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 Saxony 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.

The supply of a fleet is carried out all over the world at all times of the day.