Dear readers,

Will the ship of the future sail without a crew? In the last three years the Fraunhofer CML has developed the concept of an autonomous ship on behalf of the EU. The innovative results have been presented on the Nor-Shipping in Oslo and the MUNIN Final Event in Hamburg.

Another exciting CML project is the development of the risk management system MITIGATE. The project that is being sponsored by the EU simulates risk scenarios in a digital simulation environment in order to detect and avoid dangerous cyber attacks in advance – as well on nautical infrastructures – in the future.

There is also some news from other projects: Read about the PORTOPIA project and our innovative Crew Planning Software which is just in its “On-board testing phase” in this CML Newsletter.

Enjoy reading!

Sincerely, Prof. Carlos Jahn
Head of Fraunhofer CML
The Onboard Module is being used for the first time in live operation. How many crew members do you need for a sea voyage? Will you be able to comply with working and resting hour regulations on the planned route? The Fraunhofer CML, E.R. Schiffahrt and Bernhard Schulte Shipmanagement together have developed a tool that delivers important information just before the departure of the ship: the Crew Compliance Optimizer CCO. The CCO consists of three essential components: (1) The Office Module calculates the number of seafarers depending on the route, the type of ship and the specific work to be done. It is based on a jointly developed classification scheme of all tasks necessary for the operation according to the type of ship. The Office Module of the Crew Planning Software has been successfully used since the last winter.

(2) The Reporting Module reduces the administrative effort traditionally associated with tracking and documenting working and resting hours.

(3) The Onboard Module allows the commander of the ship to respond to changes occurring during a trip and adjust the work schedules according to the legal regulations. The Onboard Module is presently being tested during a period of three months in live operation aboard two ships. The CML has provided a computer with the appropriate software to the officers on the bridge. „We are optimistic that the module will fulfill the complex tasks. Nevertheless we will also be informed about deviations from the expected conditions during the test phase and are then able to optimize the tool based on the real conditions of the setting“, said Ole John, Senior Research Associate at Fraunhofer CML.

CYBER SAFETY IN THE MARITIME SUPPLY CHAIN
NEW RESEARCH PROJECT „MITIGATE“

Our modern information society is depending on functioning and reliable information and communication structures. More and more frequently offenders use this fact for criminal purposes: the damages caused by cyber attacks have been increasing for years. As the supply chain is also a risk chain, companies are increasingly affected by incidents regarding the information safety of their customers, partners or suppliers and therefore have to face new, cyber-specific challenges.

Based on the growing international linking of companies the topic of IT safety is gaining in importance, in particular for the ports as interfaces. Although the IT safety plays an important role for the international supply chain, the modern methods of risk management (RM) have not paid a lot of attention to it so far. Therefore from September of this year, Fraunhofer CML together with eleven partners from research and development, logistics and port administrations from Germany, Austria, Italy, Spain, Great Britain, Greece and Romania, is going to develop the innovative Risk Management System MITIGATE, which is intended to close this gap.

The core of MITIGATE’s RM system is an open simulation environment that can be used to simulate and analyze possible risk scenarios. Furthermore these simulations can help to better predict and therefore avoid hazards in the future. Moreover the system can provide for more transparency in handling risks and hazards. MITIGATE will be sponsored within the framework of the EU research program „Horizon 2020“ and it has a duration of 30 months.