Dear Readers,

Our first newsletter of 2023 appears in a fresh layout. In terms of content, we will continue to present our innovative research work.

BEYOND, for example, is all about helping people make the most of the many possibilities offered by digitization - for example, through new approaches to the ergonomic design of navigation systems. Read about what puts FLEXIKING ahead of rigid systems when it comes to time bookings for trucks and what's new with marFM®, our speech recognition software. And finally, I would like to recommend our Maritime Innovation Insights event, which will finally take place live again and for the first time in our new building on May 4.

I wish you a stimulating read!

Best regards
Your **Carlos Jahn**

Innovative Speech Recognition Technology now also understands Finnish

Our marFM® speech recognition technology has been further developed in recent months and is now multilingual: it currently recognizes and transcribes Swedish and Finnish in addition to English. This is no coincidence - because our customer, the Vessel Traffic Service Center (VTS) Fintraffic, will be testing the technology in its waters in the future. With conventional voice radio communication, misunderstandings can very easily occur: Reasons include, for example, different dialects of the speakers, interference from machine noise or unclear speech caused by stress. This is a major challenge in view of the fact that a VTS has to process large amounts of different information and thus carries the risk of relevant information being overlooked. Furthermore, in a confusing situation or even in an emergency, fast and correct reactions are of particular importance. In this context, marFM® supports and transcribes maritime radio messages reliably by using artificial intelligence. In this way, users receive all important information quickly, comprehensibly and clearly: Who sent what, when and from where? marFM® makes it possible to view radio messages at any time after they have been sent and prepares the content according to the respective user requirements. marFM® is therefore highly interesting for search and rescue services, shipping companies and especially for VTS and remote control centers: Find out more on our homepage or personally from M. Sc. Maximilian Reimann, maximilian.reimann@cml.fraunhofer.de.

marFM® transcribes VHF voice radio into text using AI. © Fraunhofer CML

Digital Ship Hamburg

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On March 30, Fraunhofer CML presents its crew planning software solution SCEDAS® at the Digital Ship Conference.

Maritime Innovation Insights

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On May 4, our annual lecture event MII takes place at our new location. Exciting lectures, interesting participants and a guided tour through the CML await you!

Transport Logistic München

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The CML presents our competences in hydrogen logistics and energy saving in ports from May 9-12. Furthermore, we demonstrate digital image recognition and process visualization through our port model.

Truck Dispatch: Flexible Time Windows thanks to Artificial Intelligence

Truck arrivals at terminals of sea and inland ports are not only subject to time-of-day fluctuations, but also to delays due to increased traffic volumes. This results in long waiting times for trucking companies, especially at peak times, which have a negative impact on terminal processes and thus on the entire supply chain. The introduction of rigid time slot booking systems has led to a smoothing of peaks on the terminal side, but causes major problems for the trucking companies, as their planning is made significantly more difficult. So the problem has only been partially solved.

Win-win through collaborative system
In the FLEXIKING project, we at Fraunhofer CML are developing a collaborative and flexible slot booking system with our partners. In the process, current influences in the inflow of ships, trains and trucks are continuously taken into account and both existing bookings and available booking options are adapted to the operational situation. Artificial intelligence is used to create a balance between the interests of the trucking companies and those of the terminals in order to achieve the optimum for the overall supply chain system.

The collaborative system is characterized by an intelligent mechanism that takes into account the interests of the terminal as well as those of the trucking companies and enables dynamic adjustment of time slot booking in the event of changing conditions by mutually agreeing to reschedule time slots. In order to maximize the benefits for the trucking companies, an optimized route planning system is also being developed that is tailored to the booking system.

FLEXI KING
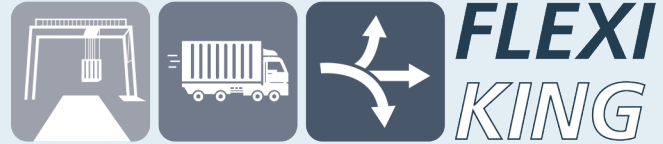
The project is funded by the German Federal Ministry for Digital and Transport. As an interested terminal operator or haulage contractor, please feel free to contact for further information M. Sc. Oliver Schmitz, oliver.schmitz@cml.fraunhofer.de.

Researchers investigate, develop and test in Turku under real conditions in the ship simulator. © Fraunhofer CML

BEYOND: Task-oriented navigation and ship management systems

The digitization of nautical systems for ship bridges is well advanced. All systems on board that are controlled from the bridge or inform the nautical officers about current system states come together here and provide continuously updated information. Data is made available on various monitors. Additional information is hidden in further visualization levels.

This flood of information can, among others, lead to a reduced situational awareness of the nautical personnel in a busy situation. Alarms and warnings triggered by critical system conditions require nautical personnel to interact with the systems, which can further reduce situational awareness.

This is where the BEYOND research project comes in, in which researchers from the CML are working with colleagues from Fraunhofer FKIE to develop an ergonomic design for navigation systems. To this end, the scientists first examine the navigation systems in terms of their functionalities and their display on the electronic nautical chart. In parallel, they are using a novel simulation environment to determine which information is relevant in different situations. For this purpose, active navigators are involved in live tests at the CML and at the Finnish University in Turku, which is connected via the innovation platform FIP-S2@NOVIA.

The results of BEYOND provide important input for the user-centered design of navigation systems. Analyzing the information that is really relevant in different situations of a sea voyage can influence the design and layout of user interfaces to the advantage of the crew and thus create a competitive advantage. The white paper „Increasing Maritime Situational Awareness by Augmented Reality Solutions", which is available for download on the CML homepage, provides a sound overview of the topic. Your contact on the topic is Dipl.-Ing. (FH) Robert Grundmann, robert.grundmann@cml.fraunhofer.de.

Brief Notes

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The optimal deployment of crew on board is also an issue in the cruise industry. At the end of March, Fraunhofer CML will present its software solution SCEDAS® at Seatrade Cruise Global in Fort Lauderdale, USA.

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From June 6 - 9, 2023, the conference and exhibition Nor-Shipping takes place in Oslo. The CML exhibits and presents the maintenance and service concept MARIA as well as marFM®. We also show new augmented reality technologies for navigation.

New Address

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