

# CREW MANAGEMENT – NOT A QUESTION OF LEAVING IT TO CHANCE

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## **Recommendation of the German Flag: Tool for optimization of crew planning developed by Fraunhofer CML successfully evaluated**

The crew planning software CCO developed by Fraunhofer CML is already being used by renowned companies in the ship management. Now the developers can be pleased about the evaluation of the software by the German Flag administration.

The fixing of the number of crew members and the composition of the crew of cargo vessels are often based on subjective experience. Although the size of the vessel is taken into account, the tasks to be fulfilled and other particularities of the respective voyage are not always considered sufficiently. When solving complex decision situations mathematical optimization methods can provide an immense support if the outcome is not to be left to chance.

As a result of technological achievements and the high cost pressure in the merchant shipping industry ship's crews are shrinking to a minimum. Strictly scheduled rest and work periods increase the pressure on the deployability of individual seafarers. The occurrence of unexpected events quickly leads to delays in the operational sequence.

The crew planning tool Crew Compliance Optimizer (CCO), which was developed by Fraunhofer CML, simplifies the complex planning procedures for putting the crew and work plans together and enables fast responses in unexpected situations.

The Crew Compliance Optimizer was certified after a close examination and in accordance with the regulations of the German Flag on 20 May 2016. There are in particular the specific determining of the number of crew members and their qualifications according to the requirements, regularly updated work plans during the voyage and compatible reports for inspection and internal audits that play an important role for the German Flag administration.

The CCO consists of three main components: The office module calculates the demand for seafarers depending on the predetermined route, the type of vessel and the work to be carried out. As a result of this the exact number of crew members including detailed work plans for every member of the crew are provided. The onboard module ensures the continuous update of the work plans in the case of unexpected changes. In this way the legal requirements for rest and work periods can be met. The reporting module minimizes the

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administrative work necessary to document the work and rest periods. It also provides reports both for inspections that have been scheduled from outside the company and for in-house audits.

User-friendly user interfaces ensure the simple operation of the CCO despite complex and comprehensive analysis possibilities.

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**Fraunhofer CML**

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In accordance with the project and customer requirements, we put together interdisciplinary teams of engineers, economists, mathematicians, information scientists and marine engineers to create customer-specific solutions for ship and fleet management, marine transport and navigation, ports and transportation markets. We take both the results of our varied research activities and the latest scientific insights into account.