Safe manning of merchant ships: an approach and computer tool

In the shipping industry, staffing expenses have become a vital competition parameter. In this paper, an approach and a software tool are presented to support decisions on the staffing of merchant ships. The tool is implemented in the form of a Web user interface that makes use of discrete-event simulation and allows estimation of the workload and of whether different scenarios are successfully performed taking account of the number of crewmembers, watch schedules, distribution of competencies, and others. The software library 'SimManning' at the core of the project is provided as open source. The tool is conceived as a support for the maritime authorities, certifying bodies and shipping companies to assess whether a ship is safely manned.

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