



Maritime System Simulation

SUPPORT FOR
ANALYSIS OF
APPLICATIONS
METHODS

new components, systems and operational modes, retrofits
energy efficiency, waste heat recovery, CO₂ footprint, sustainability
ships, complex energy systems, carbon capture
simulation approaches, digital twins

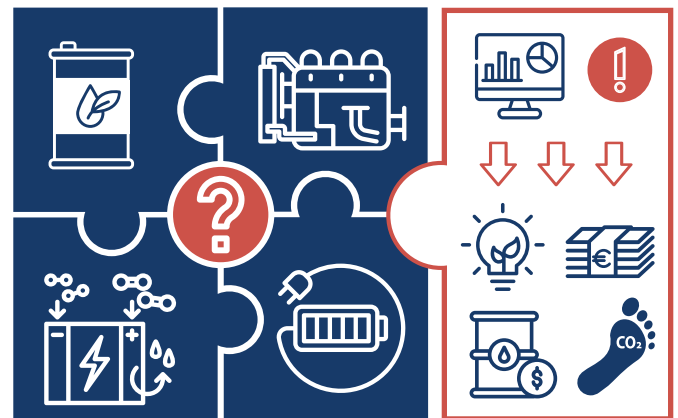
Climate Friendly and Efficient Shipping

Stricter laws and regulations for the maritime sector and an increasing competition in the transport and tourism markets require new approaches to efficient and climate-friendly operation of ships. Among a variety of solutions, the challenge is to find the right one to match your ships and your requirements.

But how can you succeed in this jungle of possibilities? Which solution is ecological as well as economical and provides enough flexibility? So, how is the future energy supply of ships to be designed?



Future Energy Supply for Ships?



What will be the future role of the combustion engine and, in addition, the use of alternative fuels? Will the battery or the fuel cell be the means of choice? Or will it be a combination of these technologies? And what do CAPEX, OPEX, sustainability and CO₂ footprint look like in each case?

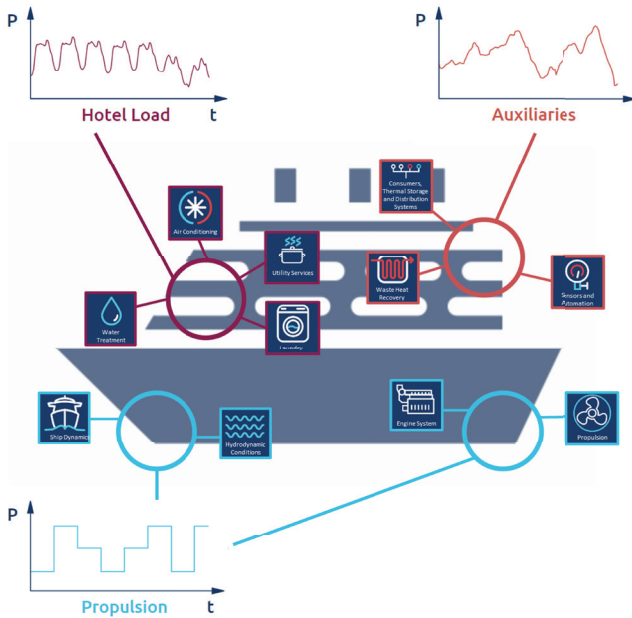
Using our simulation services, you will get rid of all uncertainties regarding your propulsion and auxiliary components and the behavior and interaction of the particular onboard energy systems.

We assist you in optimizing the operation of your ships to economic and environmental perfection!



Services

- Digitalization of maritime energy systems
- Development of Digital Twins as virtual test environments
- Model based decision making for new investments and modernization projects
- Energy efficiency improvements based on energy balances and exergy evaluations



▲ Exemplary load profile of a passenger ship

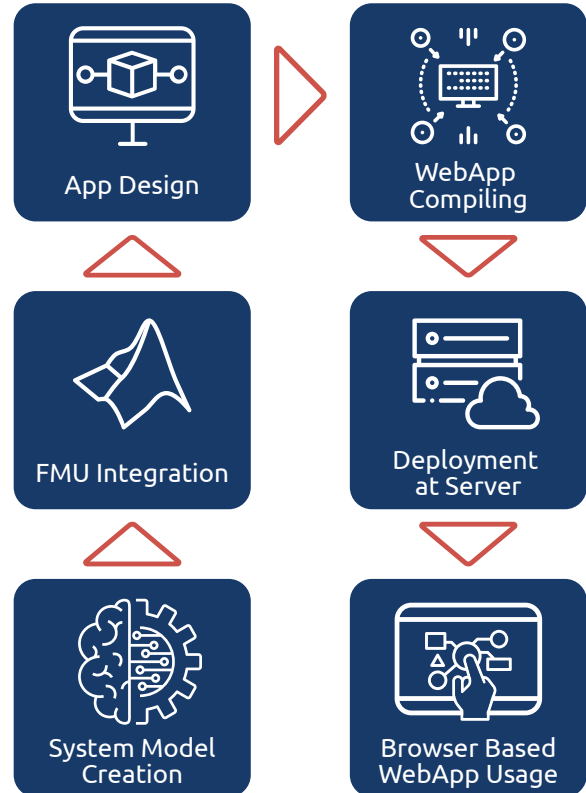
We provide you with a comprehensive overview of the potentials and reserves of your fleet and assist you with all currently available systems, such as:

- | | |
|---------------------|----------------------------|
| • Main engines | • HVAC components |
| • HT and LT cooling | • Exhaust gas treatment |
| • WHR systems | • Boilers and steam cycles |
| • Seawater cooling | • Potable water systems |

Key Benefits for Your Project

- Risk-free and cost-efficient testing
- Simulation of even highly complex energy systems with model approaches tailored to your requirements
- Comprehensive abilities for comparing and evaluating different measures
- Repeatable conditions w/o external disturbances

Our New WebApp-Approach



Our Offer

- Creating the complex system model for you
- Integrate this into a WebApp as an easily approachable simulation platform
- Host it at our simulation servers
- Browser-based access from anywhere

Your Savings

- No familiarization with sophisticated simulation software
- No license costs for specialized software
- No expensive computing technology

Are you interested in more information? Feel free to contact our experts! Together we will find a solution to your challenges.



ENERGY SYSTEM SIMULATION

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