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Preliminary Design of Maritime Energy Management System: Naval Architectural Approach to Resolve Recent Limitations

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Abstract : Energy management in the maritime industry is being required by economics and in conformity with new legislative actions taken by the International Maritime Organization (IMO) and the European Union (EU). In response, the various performance monitoring methodologies and data collection practices have been examined by different stakeholders. While many assorted advancements in operation and technology are applicable, their adoption in the shipping industry stays small. This slow uptake can be considered due to many different barriers such as data analysis problems, misreported data, and feedback problems, etc. This study presents a conceptual design of an energy management system (EMS) and proposes the methodology to resolve the limitations (e.g., data normalization using naval architectural evaluation, management of misrepresented data, and feedback from shore to ship through management of performance analysis history). We expect this system to make even short-term charterers assess the ship performance properly and implement sustainable fleet control.

Keywords : data normalization, energy management system, naval architectural evaluation, ship performance analysis
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