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Monitoring systems at the service of ship's energy efficiency: measurements campaign and analysis of the actual electrical absorptions on board

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The awareness of ship's energy efficiency is undeniably one of the top priorities of ship-owners, designers and operators; the aim is to comply the continuously updated regulations and to optimize the configuration of electrical machineries and their consumptions to reduce emissions and costs. Therefore also monitoring systems, historically connected to the ship structural condition, have been recently employed to assess the energy efficiency collecting information to improve it. In particular, one of the energetic monitoring branches is to monitor the actual electrical absorptions of on board consumers for a selected ship. In order to have impartial empirical information about operating absorption of consumers, a long-term measurements campaign have been organized and carried out with specific instrumentation based on ship's operating availability. The samples acquired during monitoring campaign have been combined with data from ship automation system, integrating the analysis with details of machineries concurrently operating (utilization and contemporary factors). This kind of analysis leads to results suitable for designers to benchmark the foreseen required electrical load on board: the subsequent possible impact on diesel generators' sizing and performance optimization and/or electrical system configuration, could lead to weights, volumes and cost efficiency.

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