



University of Rijeka, Faculty of Maritime studies

PROJECT ACRONYM AND TITLE: Energy efficiency, safety and autonomy of modern marine vessels

FUNDING PROGRAMME: Supported by the Faculty of Maritime Studies and the University of Rijeka

PERSON RESPONSIBLE: Marko Valčić

FINANCIAL DATA

Project total cost	Overall funding assigned to PFRI
31.570,00 Kn	31.570,00 Kn

SUMMARY

The goals of this research project are:

- To create a dynamic profile of the required electrical power in a time domain for propulsion systems of dynamically positioned marine vessels;
- To mathematically model and simulate various concepts and configurations of marine electrical propulsion systems (MEPS): diesel-electric propulsion (DEP), hybrid diesel-electric propulsion (HDEP) with energy storage devices and electric propulsion (EP);
- To determine the optimal configuration of MEPS in the design phase: selection of key components of MEPS and their features within DEP, HDEP and EP concepts in accordance with exploitation profiles of marine vessels;
- To deploy algorithms for optimal allocation of MEPS key components in order to select active components (generators / energy storage devices) according to the analysed MEPS concepts (DEP/HDEP/EP) and associated exploitation profiles of marine vessels;
- To deploy algorithms for power flow control with respect to various MEPS concepts (DEP/HDEP/EP): electrical power distribution, compensation of peak loads, blackout prevention, fault/failure tolerant system, system reconfiguration, system safety, system autonomy;
- To investigate and evaluate various recharging possibilities of energy storage devices installed both on board and on shore for HDEP and EP concepts; and
- To disseminate and ensure availability of the most significant research results (e.g. on the Institution's web site).

Start date	End date
15 September 2017	14 September 2019

PARTNERSHIP

Br.	Partner organization	Country	Role
1.	Faculty of Maritime Studies, University of Rijeka	Croatia	Lead partner



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