

PRESSE RELEASE

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EcoPlex project, to reduce the environmental impacts of complex ships

In the context of global warming, the International Maritime Organization promised to reduce CO2 emissions caused by transport work by at least 40% between 2008 and 2030. To reach this objective implies to reduce the environmental impact of ships.

An improvement area consists in intervening as soon as the design phase of a new ship begins, by evaluating its impact on the environment, in order to take the best eco-design decisions.

This is the main stake of the **EcoPlex** project: to provide a methodological approach and a software solution that fits the shipbuilding field, to concile systems engineering (the discipline of complex systems architecture) with life cycle assessment (evaluation of the environmental impacts of a system throughout its whole lifecycle).

Supported by the French competitiveness cluster **EMC2** and funded by **Bpifrance** and the French regions of **Bretagne** and **Pays de la Loire**, this collaborative project associates several companies and research laboratories in key domains, among them:

- **Obeo**: software provider, member of the Capella eco-system (open-source systems engineering software),
- **Stirling Design International (SDI)**: design and naval architecture agency,
- **Manta Innovation**: naval and environmental studies and engineering firm, committed in ocean depollution,
- **Efinor Sea Cleaner**: shipyard specialized in the design, the manufacturing and the selling of multi-services depollution boats,
- **Laboratory of Digital Sciences of Nantes (LS2N)**: a Joint Research Unit (UMR 6004), supported by the University of Nantes, Centrale Nantes, IMT Atlantique, CNRS and Inria, of which two cross-cutting themes are the "Management of energy and environmental impact" and "Industry of the future".

Launched in June 2021, the 18-month project EcoPlex aims at providing an innovative solution to ensure a digital thread between the design activities of a ship and its life cycle analysis.

The eco-design naval approach, designed with SDI, will be supported by a software developed by Obeo and the LS2N that integrates the open source softwares Capella (systems engineering) and OpenLCA (life cycle assessment).

The solution will first be experimented on two boats that will collect plastics from the seas, the Mobula 8 and 10. Imagined by Manta Innovation to meet the needs of the association The SeaCleaners (created by the navigator Yvan Bourgnon), these ocean cleaning boats will be designed and manufactured by Efinor Sea Cleaner. Then, a third experimentation will be conducted by SDI on an eco-designed passenger ship.

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References :

- IMO press release: <https://www.imo.org/en/MediaCentre/HotTopics/pages/reducing-greenhouse-gas-emissions-from-ships.aspx>
- Capella software: <https://www.eclipse.org/capella>
- OpenLCA software: <https://www.openlca.org>
- Obeo : <https://www.obeosoft.com>
- SDI : <https://www.stirlingdesign.fr>
- Efinor Sea Cleaner : <https://seacleaner.efinor.com>
- LS2N : <https://www.ls2n.fr>
- The SeaCleaners : <https://www.theseacleaners.org/fr/accueil>