



Operational data services

Improve ship performance with operational data

Shipowners need reliable insight to improve efficiency, cut emissions and meet tightening regulations. MARIN helps unlock the value of operational data by turning raw measurements into actionable performance information, supported by quantified uncertainty.

By combining operational data analysis with hydrodynamic expertise, MARIN provides clear, independent insight that supports smarter operations and measurable fuel and emissions savings.

Services for ship owners/operators:

- Speed/power analysis
- Performance validation
- Fouling monitoring
- Operational profile mapping
- Voyage and routing analysis
- Design for operation
- Zero-emission and alternative fuel studies

MARIN's approach

MARIN's fast analysis methods can process large volumes of operational data in short time. This is then used for fast initial analyses, as well deeper support for more specific scopes, employing MARIN's hydrodynamic expertise.

Fast initial analysis

MARIN provides an initial view of the vessels performance including:

- an assessment of data quality and the achievable level of accuracy,
- an initial operational profile of the vessel,
- a speed-power curve,
- early indicators performance degradation such as bio-fouling.

These insights form the basis for a joint discussion about the next steps.



https://commons.wikimedia.org/wiki/File:Passenger_ship_Zaandam_in_drydock.jpg



<https://www.pce-international.com/wp-content/uploads/2025/01/Fouling-growth.jpeg>

Related products:

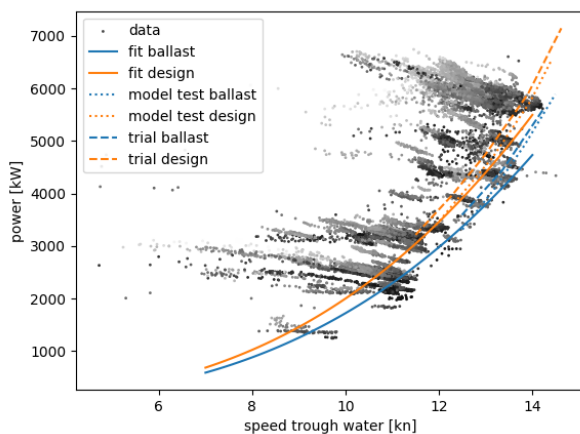
- ZEL, SPEC
- Blueroute
- Weather routing and voyage simulations

For more information contact MARIN:
Performance at Sea department
E secretariaatPaS@marin.nl

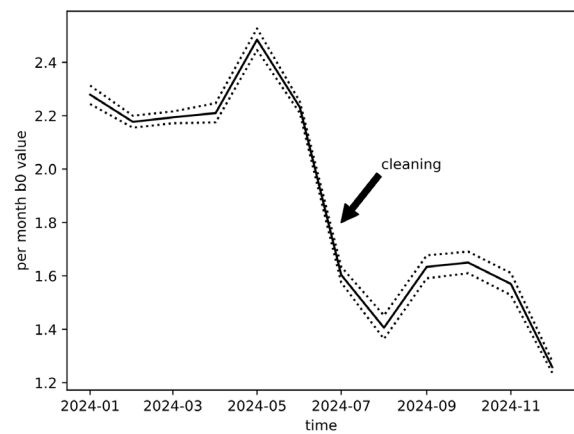
Detailed analysis and advice

Based on the initial findings and the client's needs, MARIN can expand the analysis with a range of advanced techniques, such as hydrodynamic performance models and advanced weather corrections, enabling more specific services such as:

- Validate baseline (calm weather) speed-power performance
- Support for regulatory compliance (CII, GFI, MRV, FuelEU, etc.)
- Options for retrofit actions
- Advice actions such as ship cleaning
- Validate effect of energy-saving devices based on before-and-after comparison of operational data.
- Investigate zero emission techniques
- Voyage optimization
- Fleet analysis and optimization
- Design optimization for next generation vessels
- Input for maintenance strategies including hull cleaning
- Be the starting point for further services that MARIN provides, such as model tests, CFD and dedicated ship trials.



Speed-power analysis



Hull cleaning event