Ω-SAIL

New insights from data already available on board

WHAT IT IS

Ω-SAIL is a software system designed to interpret vessel dynamics in real time using signals already available on board. Rather than simply displaying instantaneous values, it combines the current state, evolving trends and the rate at which the vessel's dynamic condition is changing, presenting the results through a few immediately understandable indicators.

WHAT IT USES

Data available through the onboard network, including navigation, wind, speed, course, vessel attitude and other accessible parameters. Ω-SAIL does not require additional sensors as a prerequisite and is designed to operate with equipment from different manufacturers.

CURRENT DEVELOPMENT AND VALIDATION STATUS

Ω-SAIL is operational as a software prototype and has been tested by processing recorded sailing data sequences. These preliminary tests produced encouraging results in identifying developing dynamic conditions and estimating remaining manoeuvring margins. In the sequences analysed, the average remaining margin at the time of warning was 81.7%; observed warning lead times ranged from 12 to 86 seconds (average 34 seconds). These results describe the conditions of the recorded-data tests and are not universally validated performance values. The next step is real-time validation using signals acquired directly from onboard instrumentation during sailing.

THE NEXT STEP WE PROPOSE

Sea trials aboard a vessel equipped with the partner's instrumentation. The objective is to acquire available signals in real time, process them through Ω-SAIL and compare the resulting indicators with the vessel's actual behaviour under different sailing conditions, with particular attention to data availability, acquisition frequency, synchronization and processing latency.

WHAT WE PROVIDE

- The Ω method and an operational software prototype.
- Development of the future smartphone and tablet app.
- Processing and analysis of collected data.
- Technical management of the experimental programme.

WHAT WE ASK OF THE PARTNER

- Technical discussions with onboard network and protocol specialists.
- Access to available instrumentation and data.
- An equipped vessel for a limited number of sea trials.
- Technical expertise and support during the trials.

WHY THIS MAY BE OF INTEREST TO THE PARTNER

- Ω-SAIL does not replace existing instrumentation. It enhances its value by transforming data already generated on board into new, actionable information for the sailor.
- The Ω method, software and app development remain our responsibility. The partner's contribution primarily involves technical expertise, access to onboard systems and sea trials.
- Ω-SAIL is designed as a cross-platform solution. A product initially developed and validated within the partner's technological environment could subsequently operate on vessels equipped with systems from other manufacturers.
- The partner can associate its technology with the development and validation of a new approach to interpreting onboard data, with potential benefits for innovation, visibility and market positioning.

PROPOSED DEVELOPMENT PATH

1 Technical discussion → 2 Access to onboard signals → 3 Real-time sea trials → 4 Evaluation of results

Ω-SAIL reveals the dynamics.