

SAILADV

Analyze  
Determine  
Validate

# Products and Services

Performance Analysis  
Failure and Material Analysis  
Predictive Maintenance  
Oil, Fuel & Coolant Analysis  
3D Scan

# H-Box

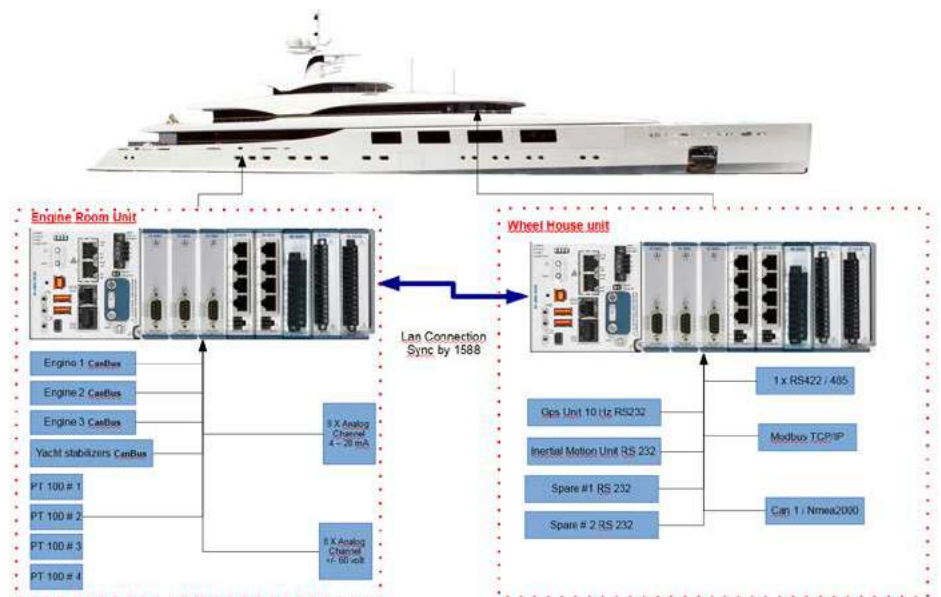
# H-Log

## Sea trial data acquisition: a new approach

H-BOX is an innovative data acquisition system for the analysis of the performances and the characteristics of yachts and ships (motor or sailing).

Designed to be an extremely precise and analytic instrument based on a Linux real time architecture, the system has an expandable modular functionality architecture that allows the maximum configurability and versatility being able to dialogue in a synchronous mode with the main ship systems.

## H-BOX ARCHITECTURE



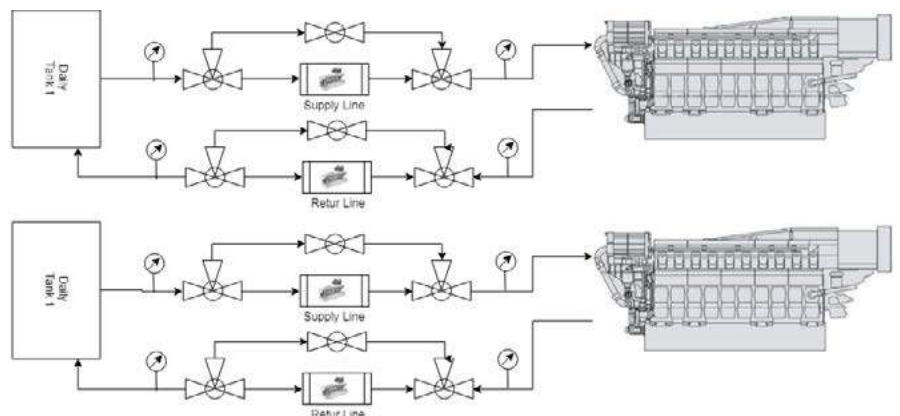
## SYNCHRONOUS CONTINUOUS DATA ACQUISITION

Supported Protocols:  
Nmea 0183/2000  
J1939  
MCS-5  
Mod Bus TCP/IP  
Mod bus RTU

16 bit Analog signal converter:  
0-20 mA  
 $\pm 10 \text{ V}$   $\pm 60 \text{ V}$   
Pt100

## FUEL CONSUMPTION MEASUREMENT

Due to the increasing awareness of the impact of exhaust emissions on the environment, combined with the continued increases in fuel costs, there is great need for reduction in fuel consumption. This consideration has led to a high demand for accurate measurement systems to monitor the fuel consumption per engine. Real-time measurement and trend analysis of fuel consumption provide helpful information for ship owners, ship managers and crew about the influences of their actions on the consumed fuel. We offers various kinds of systems for the most accurate measurement and analysis of fuel consumption.

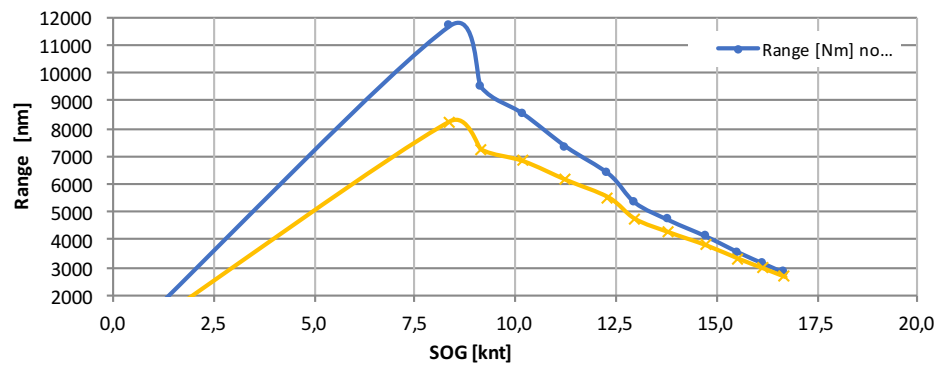


## ANALYZE

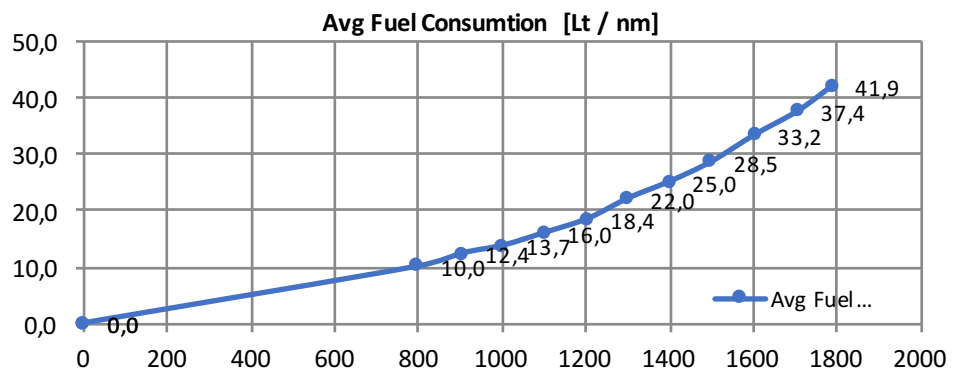
The synchronous data acquisition processes, from the flowmeter and from all the other on-board systems, allows a real time evaluation of the range and other important quantities derived.

## DETERMINE

## VALIDATE



Real-time measurement permits important Fuel Consumption and Emissions reduction

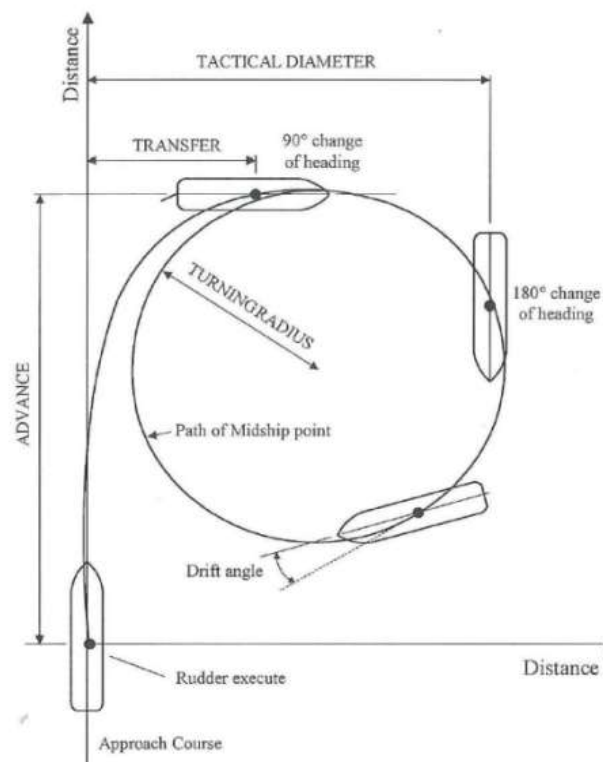


## MANEUVERING TESTS

The maneuverability performance of the yacht is obtained through the use of 2 differential GPS and a newly developed inertial platform.

The essential information that will be obtained from this maneuver consists in:

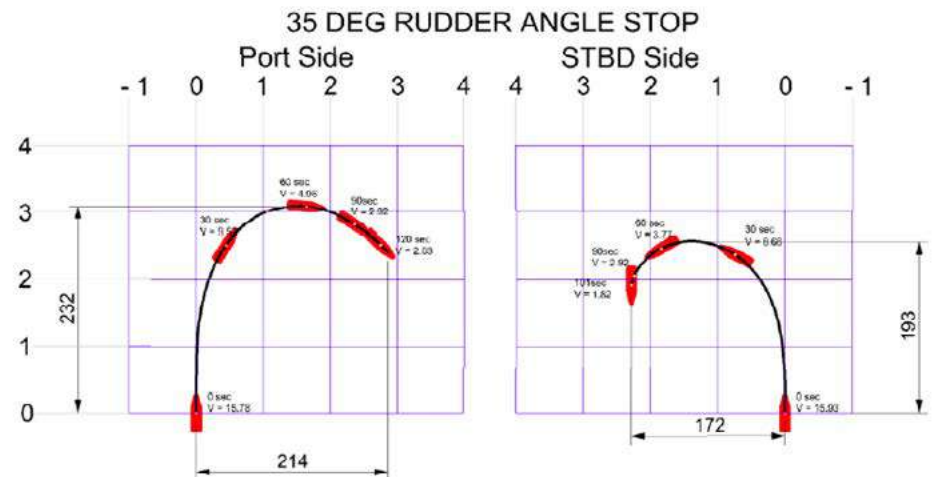
- tactical diameter
- advance
- transfer
- final ship speed
- yaw rate in the "steady state" of the turning circle.



The experience over the years has allowed us to develop a special analysis algorithm that makes the evaluation in real time of:

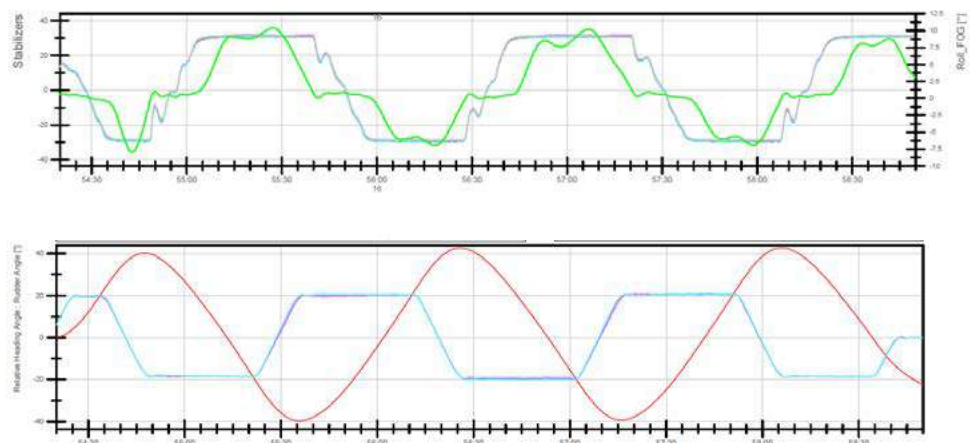
- Instant turning radius
- Advancement
- Transfer.

All parameters can also be contextualized with respect to, for example, the status of the stabilizers or the inertial platform.



## “Z” MANEUVER

The “Z” Maneuver here below indicated, also known as Zig-Zag Maneuver or the Kempf Maneuver tests, is part of the standard IMO tests required for the assessment of the characteristics of maneuverability of yachts.



Thanks to the synchronous data acquisition of H-BOX it is possible to obtain the following information:

- Initial speed of response of the system
- Execution time of the second approach
- Time to stabilize the route
- Angle and width of the overshoot angle
- Responsiveness of stabilizers
- Maximum roll angle reached.

## LLOYD'S CERTIFICATION

SailADV H-BOX system:  
it's the one and only certified system with a statement of compliance given by the Lloyd's Register which considers it as appropriate to support sea trials by measurements and reporting.



Lloyd's  
Register



Statement No. PRJ11091959-1  
12 November 2018

## FACTUAL STATEMENT SAILADV S.r.l – H-BOX Project

Lloyd's Register EMEA carried out the review of the **SAILADV Consulting** Documentation covering the **H-BOX**,

against the *IMO Resolution MSC.137(76) (adopted on 4 December 2002), STANDARDS FOR SHIP MANOEUVRABILITY* and the *BS EN ISO 19019:2015 Sea-going vessels and marine technology — Instructions for planning, carrying out and reporting sea trials*.

The H-BOX is considered as appropriate to support sea trials by measurements and reporting in compliance with the above mentioned IMO Resolution and ISO Instructions.



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