



WE **DESIGN** YOUR BOAT **EXPERIENCE**

ATTRACTIVE

SUSTAINABLE

UNIQUE

Headquarters Lecce, Italy – R&D Dept. Trieste, Italy

PORTFOLIO

CREDENTIALS

- Concept and Design (Ideation, Design Management, C.Journey mapping)
- Naval Architecture (traditional and numerical)
- Structural design (Composites direct scantling)
- Systems and Equipments (Functional and 3D Modeling)
- Prototype and Testing (Virtual and Augmented Reality, 3D Printing)
- Digital Consulting (HPC, Data Management, Software Developing)

MICAD
THE CREATIVE
ENGINEERING COMPANY

BENETEAU
AVANT GARDE IN BOATING



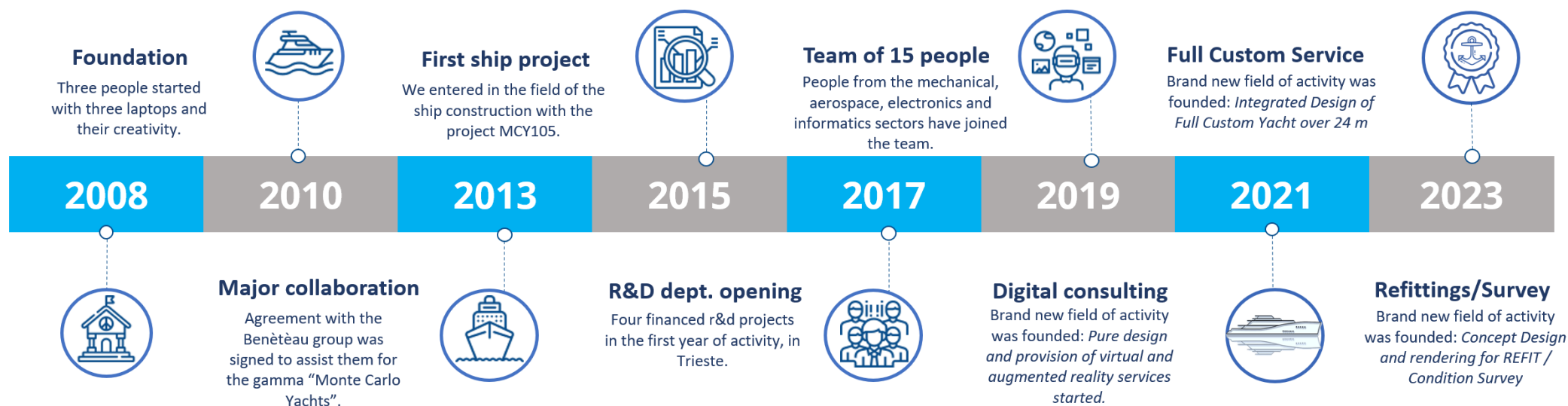
AZIMUT
YACHTS

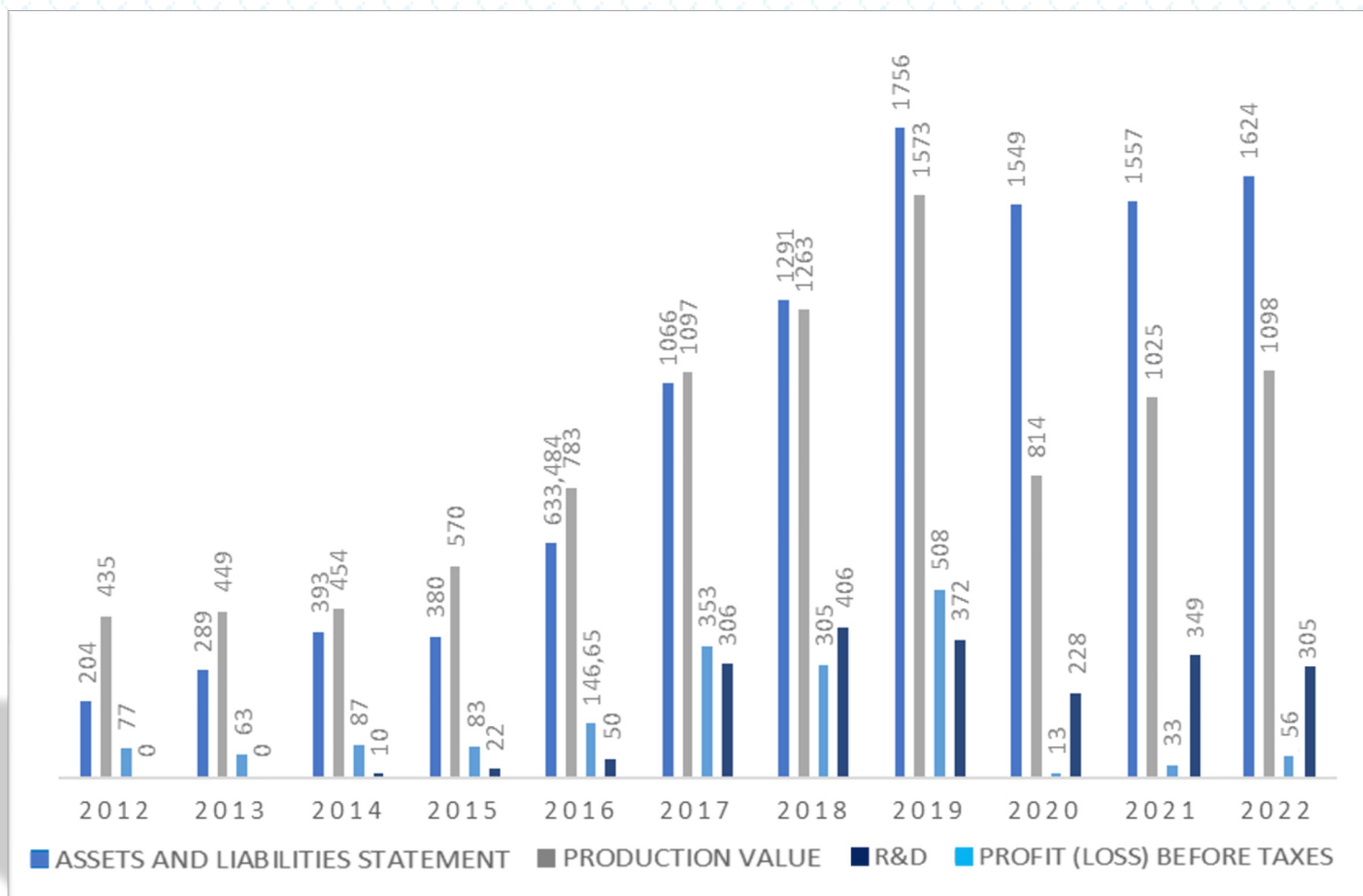


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➤ MICAD is a creative engineering company of international repute.
Since 2009 it is a flexible partner able to offer cutting-edge solutions for the marine industry.

Amedeo MIGALI

PhD in Naval Architecture, with a thesis on trimaran hulls, he has worked for 5 years on research applied to multihulls using numerical and experimental methods. He gained significant experience in structural design and naval architecture, collaborating with universities and research institutions; for 3 years he was Project Manager for Atlantis, a brand of the Azimut|Benetti group, dealing with large areas of project management. Numerous its technical publications in national and international conferences, most notably the one in collaboration with Michael Peters Yacht Design, Research and Development division of the Azimut|Benetti and the Experimental Tank Institute in St.Petersburg (KRISO), concerning the performance of very fast stepped hulls. Among the collaborations should be reported as current, ongoing with Monte Carlo Yachts (hull design, structural design, project management), Prestige Yachts (structural design, project management), and as Deputy Technical Director of the Istituto Giordano.

Micad is an engineering company with more than 20 years of experience in naval architecture, cad cam modelling, structural engineering and naval design, offering a full range of services related to technical outline design, naval architecture, definition of the geometry of the various components, structural dimensioning and classification and certification. Micad currently provides its services to Italian and European shipyards including Azimut Benetti Group, Beneteau Group, Bavaria, Blugame, Feadship, FIM, Fjord-Hanse Group, and has embarked on a corporate policy aimed at developing research and innovation activities with a focus on environmental issues. Its registered office and main operational office are in Italy - Lecce.

Since December 2014, there has been an operational office in Trieste for R&D activities. The R&D activities developed in the Trieste office are aimed at increasing the company's technical know-how, which is instrumental in developing new products and AI services to be introduced in the shipbuilding and nautical market.

Micad's current client portfolio includes private shipowners for the development of full-custom motor yachts from 30 to 70 m.



PROFESSIONAL EXPERIENCES

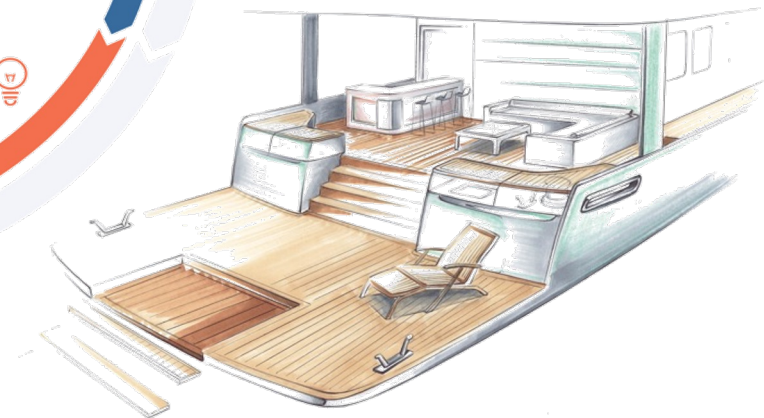
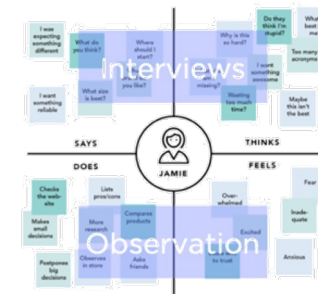
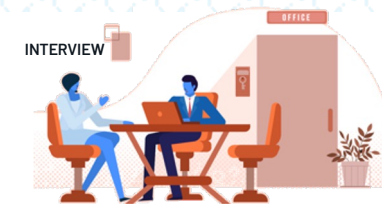
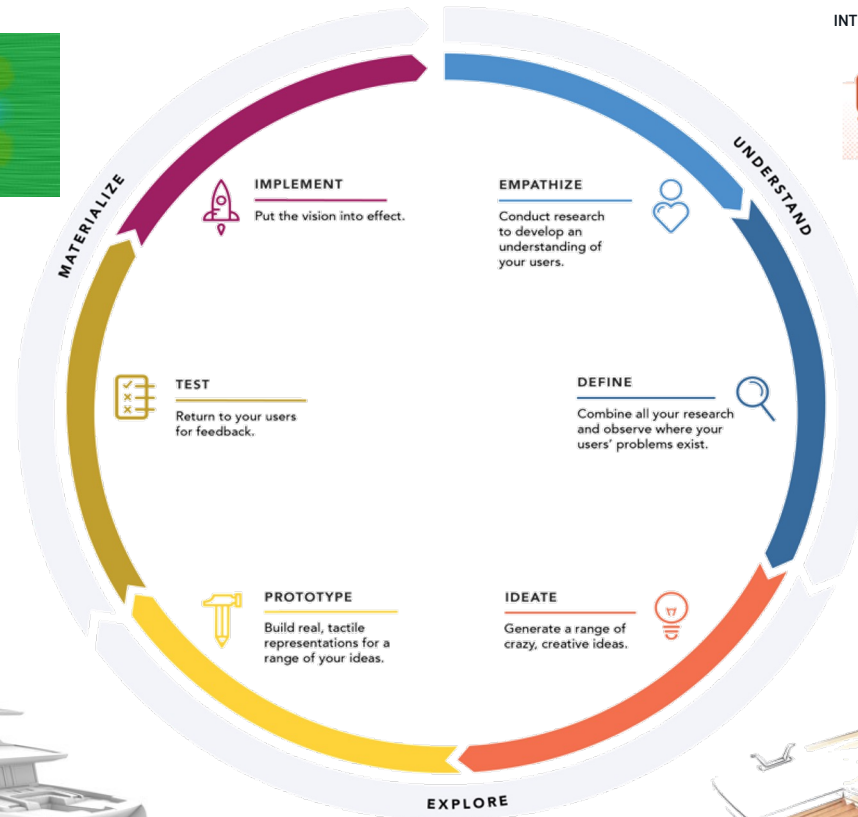
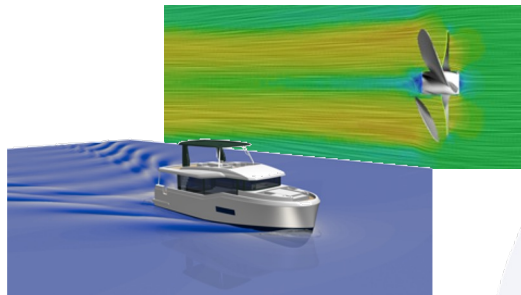
Current Roles	Managing Director of "Micad S.r.l." – Design office supporting boatbuilders and shipbuilders
2020-24 - current	Contract professor of "High speed Craft" –Università degli Studi di Trieste
2020	Expert for the Master 1st level Interior Design Navale e Nautico Università di Trieste – Reverse Engineering – Comfort on board
2019 – current	Expert of European Climate, Infrastructure and Environment Executive Agency of European Commission for the blue economy
2008 – current	Managing Director Micad SRL
2008 – 2011	Managing Director "Lady Hawke Catamarani SRL" – operating in the design, production and sales of catamarans.
2006 – 2009	"Project Manager" Atlantis S.p.A. (A brand of Azimut/Benetti S.p.A
2003 – 2005	Research Contract Dipartimento di Ingegneria Navale Università di Napoli "FEDERICO II": Hydrodynamic optimization of fast ships

THE TEAM



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Since 2009 it is a flexible partner able to offer cutting-edge solutions for the marine industry.





openCA 1.10.1

File Database Tools Help

Navigation

Projects

Confronto passeggeri

Confronto soluzioni

Confronto utilizzo HB100

Confronto EOL-Batterie

Product systems

Confronto batterie

DE100B-EOL

DE100-EOL

EB100-EOL

HB100-EOL

Processes

1-EB100

2-HB100

P HB100-Batterie

P HB100-EOL

P HB100-Installazione

P HB100-Utilizzo

P HB100-combustione-diesel (da fishing vessel) | Cutoff, U - GLO

P HB100-combustione-diesel (da fishing vessel) | Cutoff, U

Inputs

Flow	Category	Amount	Unit	Costs/Re...	Uncertainty
F ₂ diesel, low-sulfur	192:Manufacture of r...	DieselMass	kg		none
F ₂ transport, freight, lorry 16-3...	492:Other land transp...	DieselMass	kg/km		none

Outputs

Flow	Category	Amount	Unit	Costs/Re...	Uncertainty
F ₂ Arsenic	Emission to air/unsepe...	DieselMass*As	kg	lognorm...	
F ₂ Benzene, hexachloro...	Emission to air/unsepe...	DieselMass*	kg	lognorm...	
F ₂ Cadmium	Emission to air/unsepe...	DieselMass*Cd	kg	lognorm...	
F ₂ Carbon dioxide, fossil	Emission to air/unsepe...	DieselMass*	kg	lognorm...	
F ₂ Carbon monoxide, fossil	Emission to air/unsepe...	DieselMass*	kg	lognorm...	
F ₂ Chromium	Emission to air/unsepe...	DieselMass*Cr	kg	lognorm...	
F ₂ Copper	Emission to air/unsepe...	DieselMass*Cu	kg	lognorm...	
F ₂ HB100-combustione-diesel	HB100	0.27780	kWh	none	
F ₂ Lead	Emission to air/unsepe...	DieselMass*Pb	kg	lognorm...	
F ₂ Mercury	Emission to air/unsepe...	DieselMass*	kg	lognorm...	
F ₂ Nickel	Emission to air/unsepe...	DieselMass*Ni	kg	lognorm...	
F ₂ Nitrogen oxides	Emission to air/unsepe...	DieselMass*	kg	lognorm...	
F ₂ NMVOC, non-methane vola...	Emission to air/unsepe...	DieselMass*	kg	lognorm...	


General information | Inputs/Outputs | Administrative information | Modeling and validation | Parameters | Allocation | Social a



MICAD is involved in the process that aim to update the current PCR rule. The goal is to extend and define specific LCA standard for pleasure and sporting boats.

PRODUCT CATEGORY RULES (PCR)
DATE 2027-11-23

YACHTS, SMALL CRAFTS, OTHER VESSELS, AND COMPONENTS THEREOF
PRODUCT CATEGORY CLASSIFICATION: UN CPC 49311, 49315, 49316, 49319, 494

2 GENERAL INFORMATION	
2.1 ADMINISTRATIVE INFORMATION	
Name:	Yachts, small crafts, other vessels, and components thereof
Registration number and version:	2015:06, version 2.0.0
Programme:	 The International EPD System
Programme operator:	EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden. Website: www.environdec.com E-mail: info@environdec.com
PCR Moderator:	Amedeo Migali
PCR Committee:	Quotasette s.r.l., Mapping LCA, Northern Light s.r.l., MoBNL (University of Trieste – Department of Engineering and Architecture), Water Revolution Foundation, MICAD s.r.l., NavalDesign&Consulting SRL, European Boating Industry (EBI)

DESIGN

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CONCEPT DESIGN AND RENDERING

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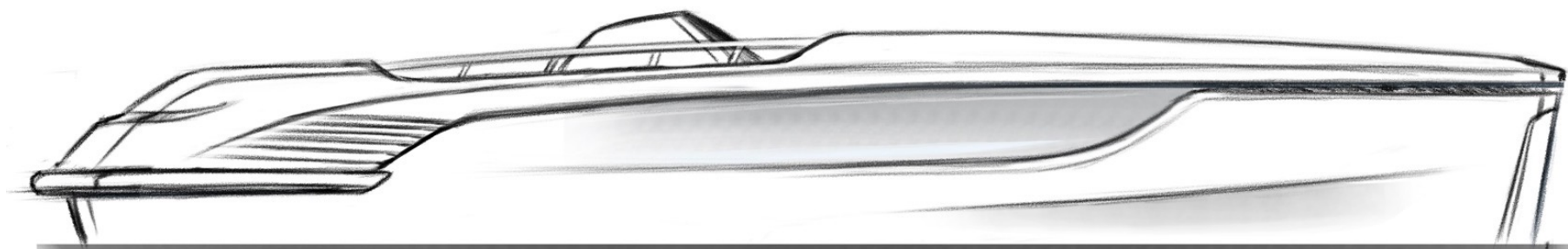
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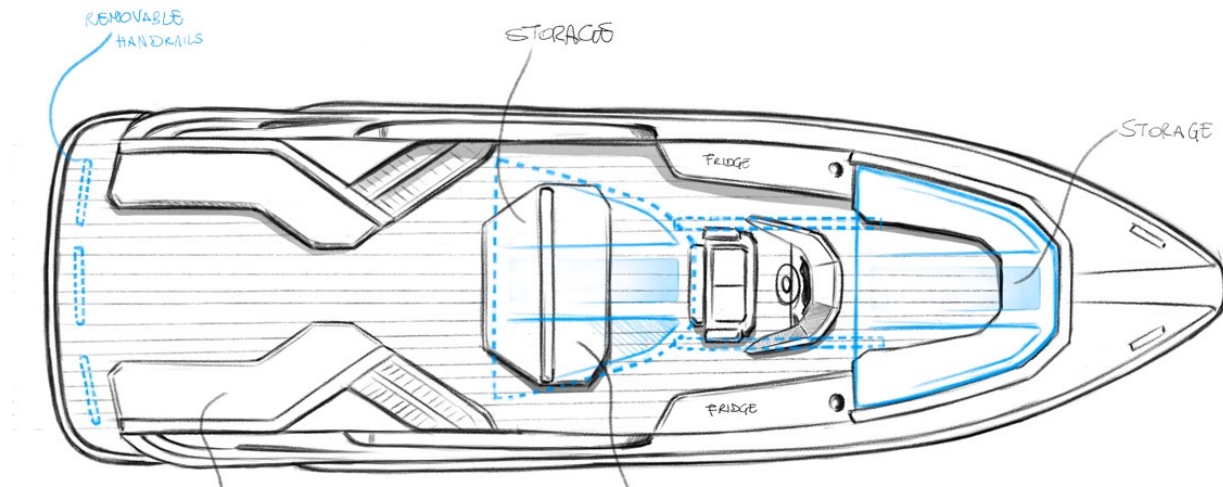
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CONCEPT DESIGN RENDERING AND MODEL

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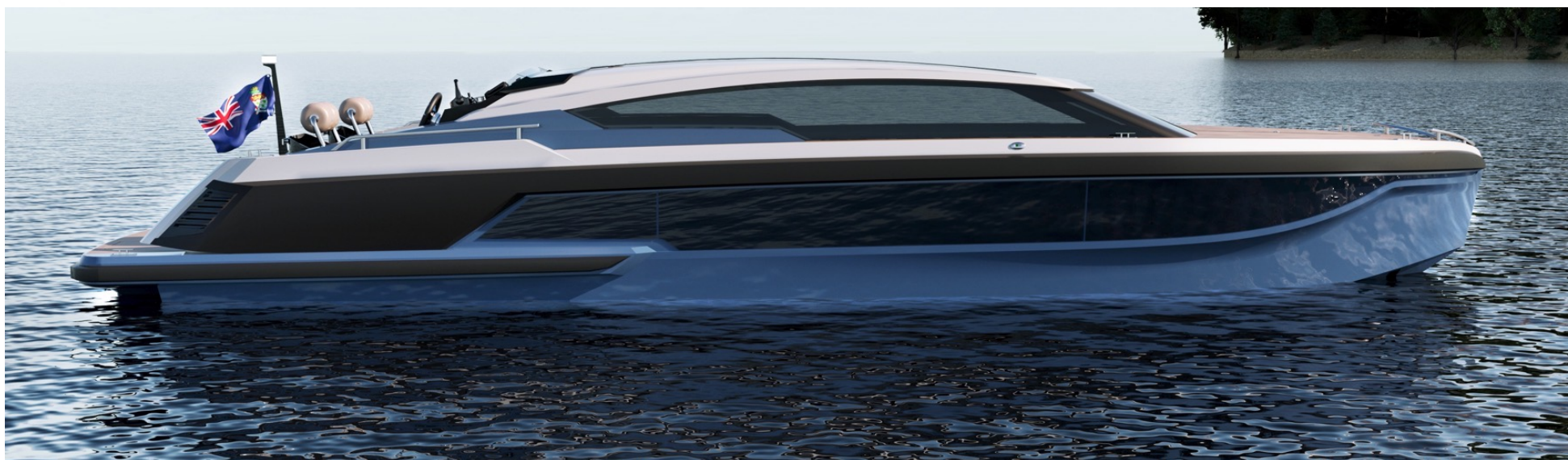
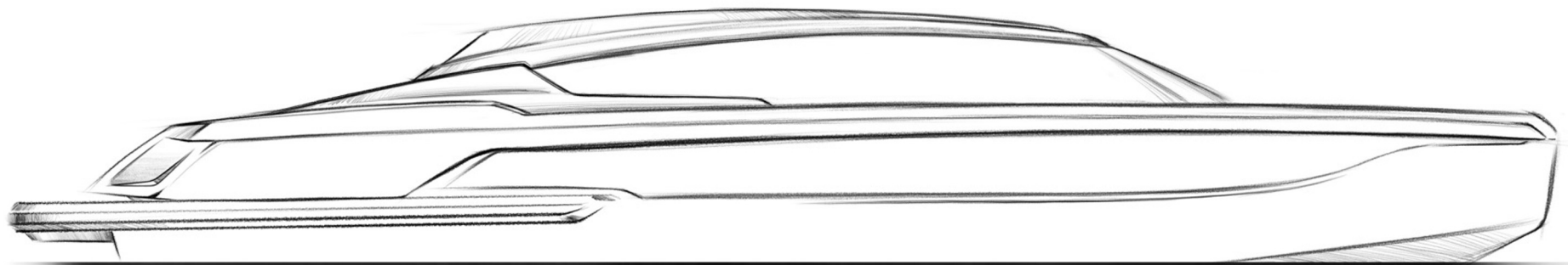
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LIMOTENDER FIM

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IN COOPERATION WITH  **FIM**

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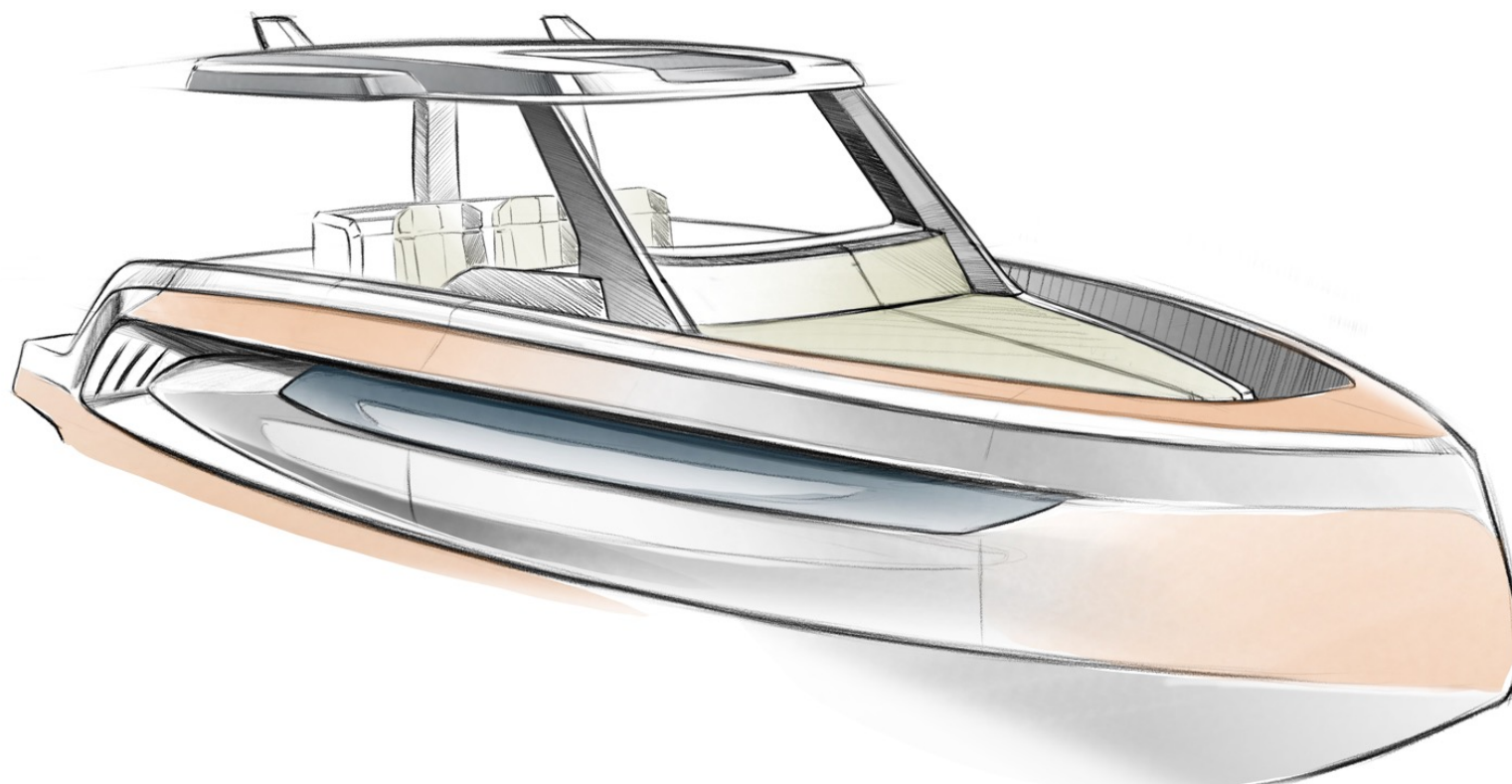
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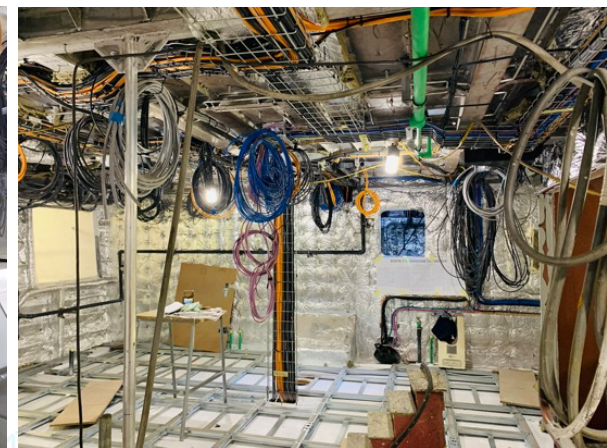
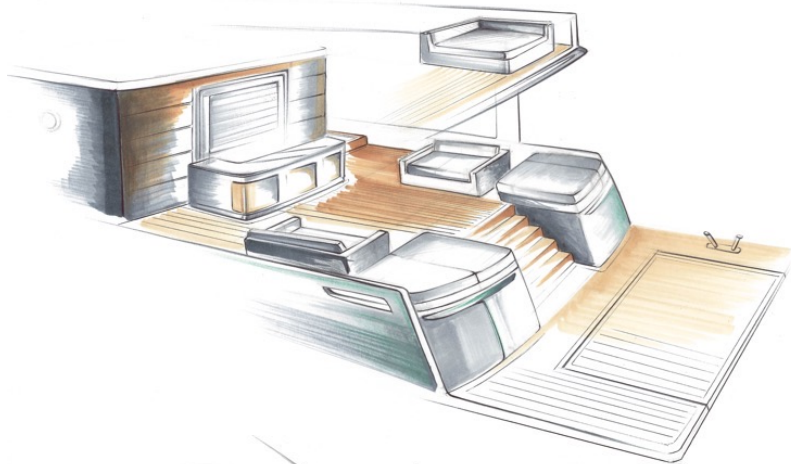
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DESIGN

CONCEPT DESIGN AND RENDERING FOR REFIT

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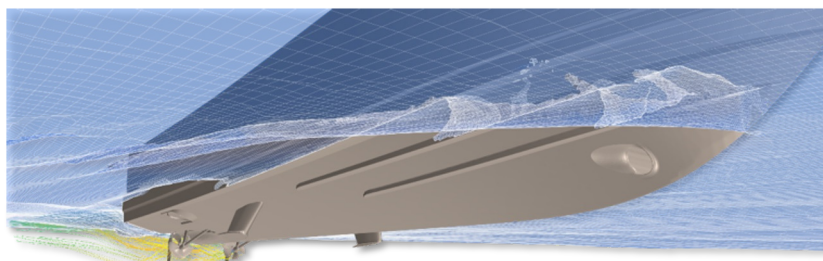
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ENGINEERING

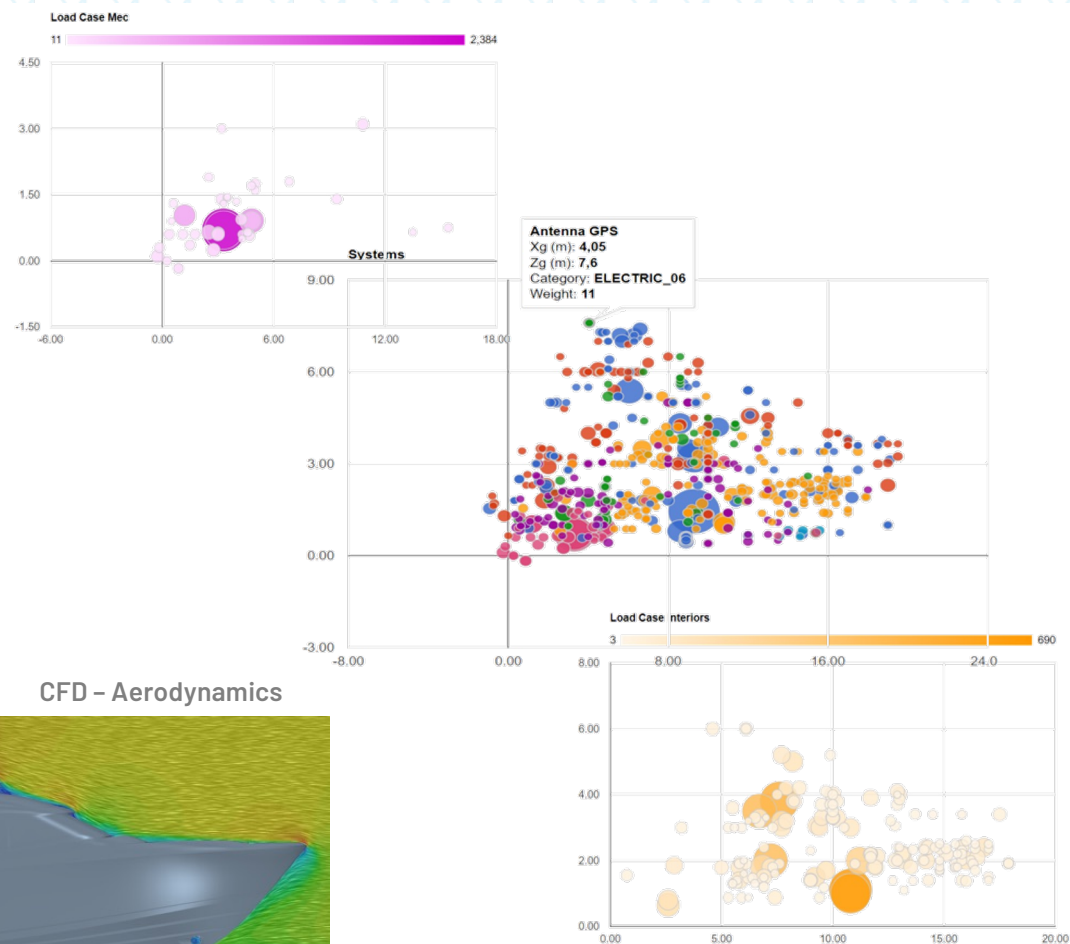
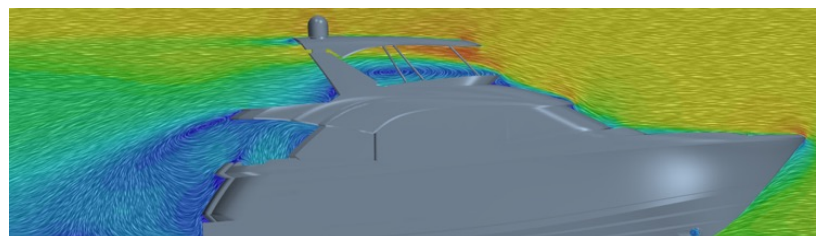


Towing tank trial

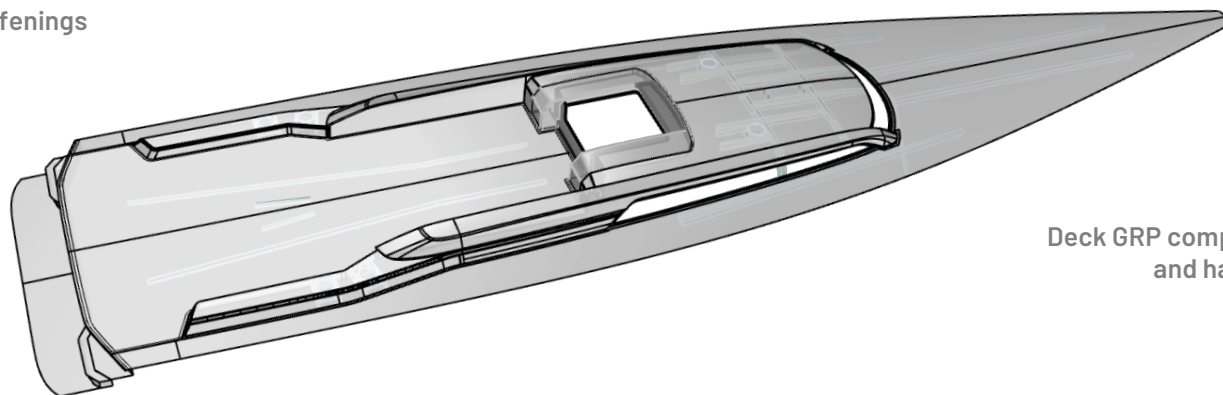
CFD – Self propelled boat



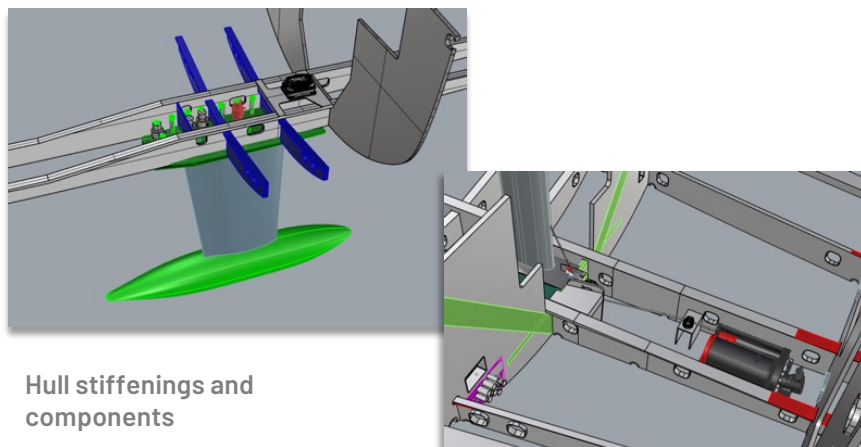
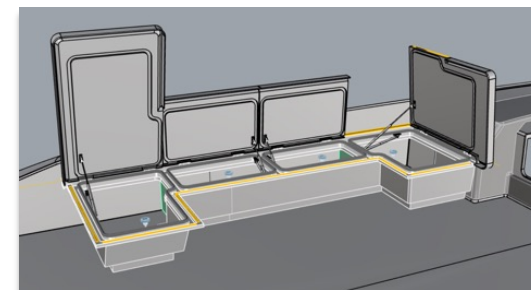
CFD – Aerodynamics



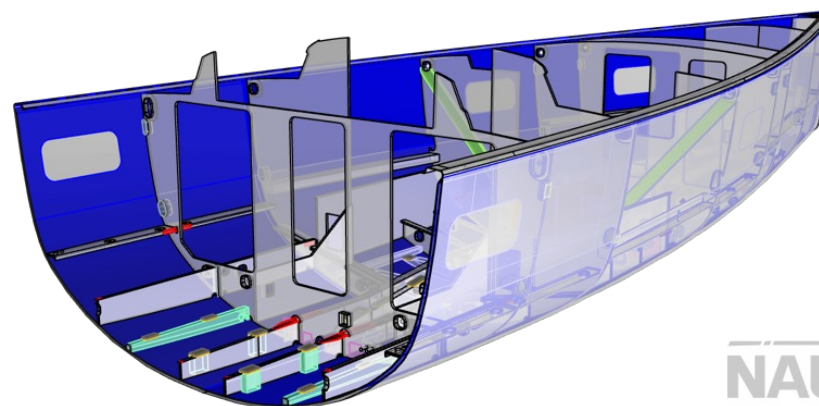
Deck and stiffenings



Deck GRP components
and hardware



Hull stiffenings and
components



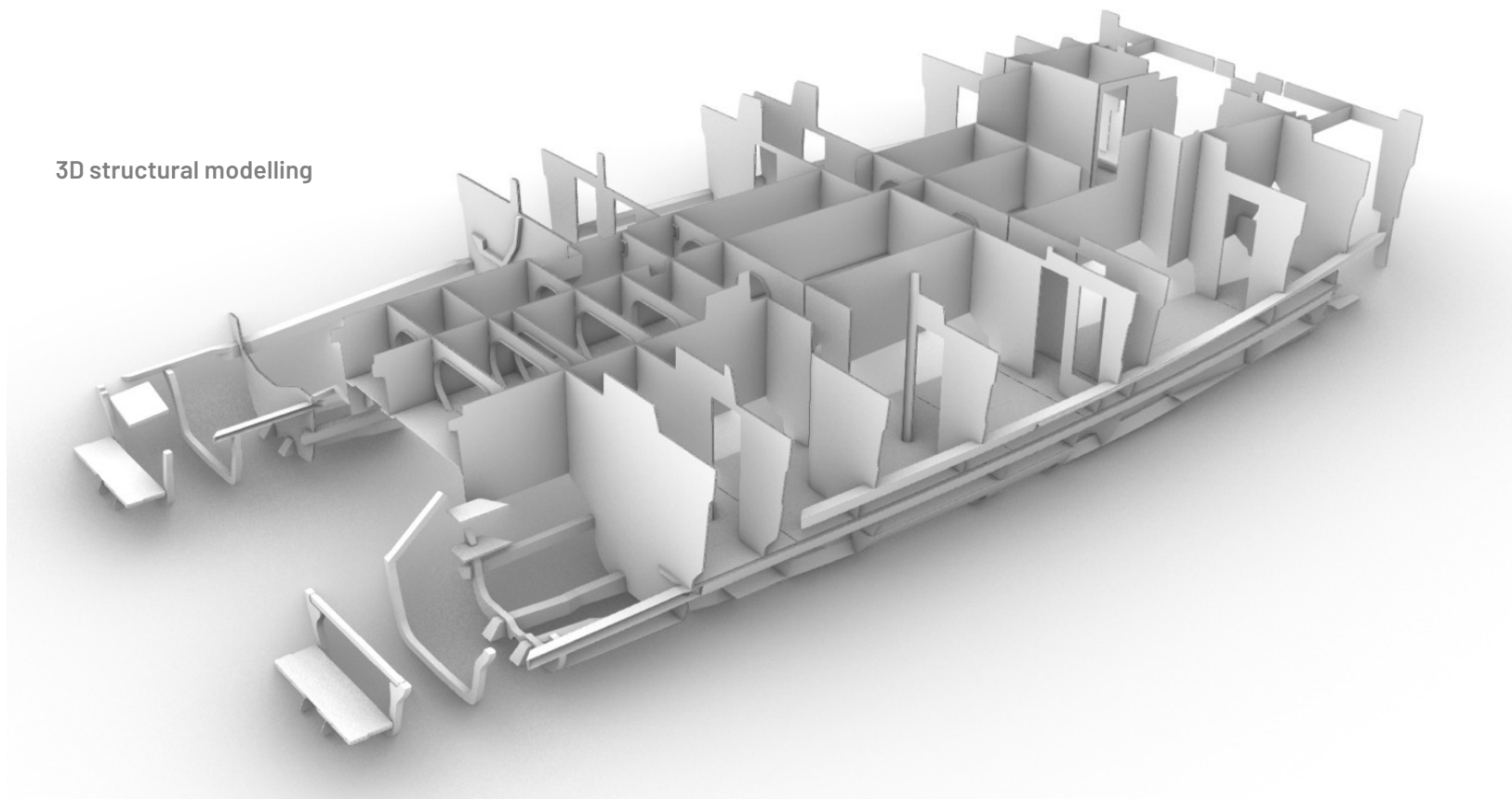
**NAUTOR
SWAN**

ENGINEERING

STRUCTURAL DESIGN

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3D structural modelling



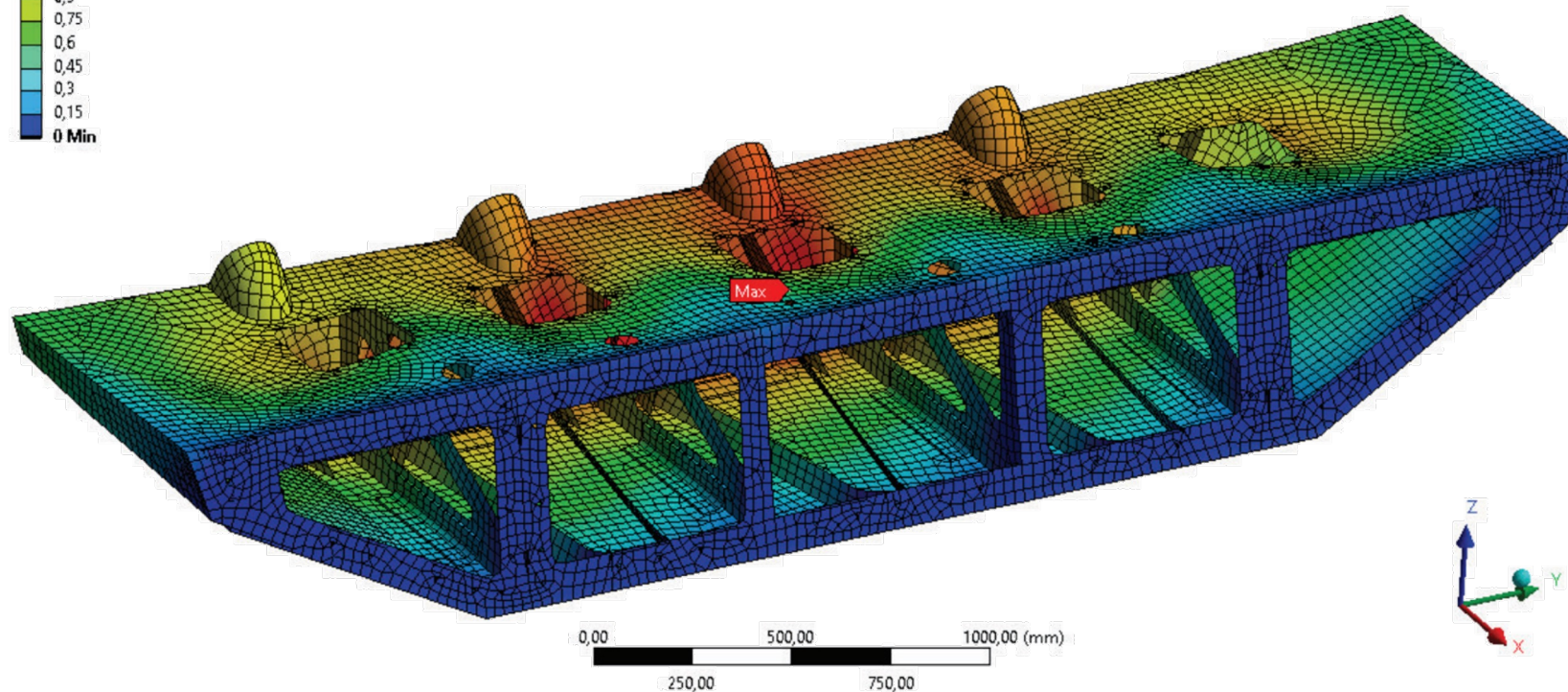
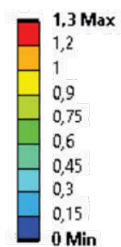
B:RBL55_rev1_Static_7_3_g_Analysis

Total Deformation - 4. s

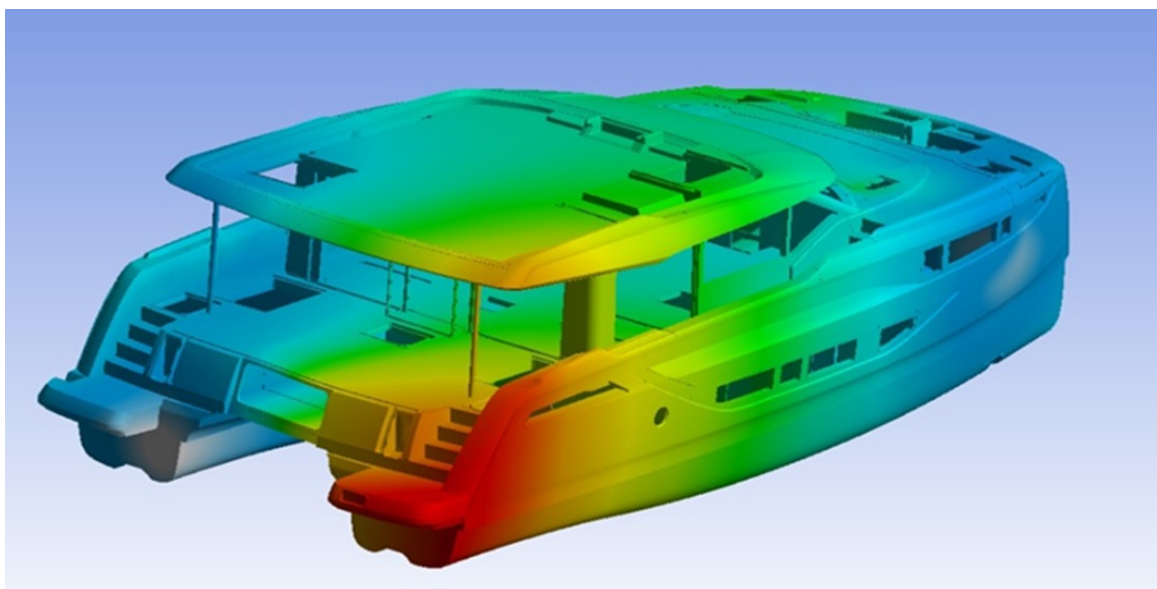
Type: Total Deformation

Unit: mm

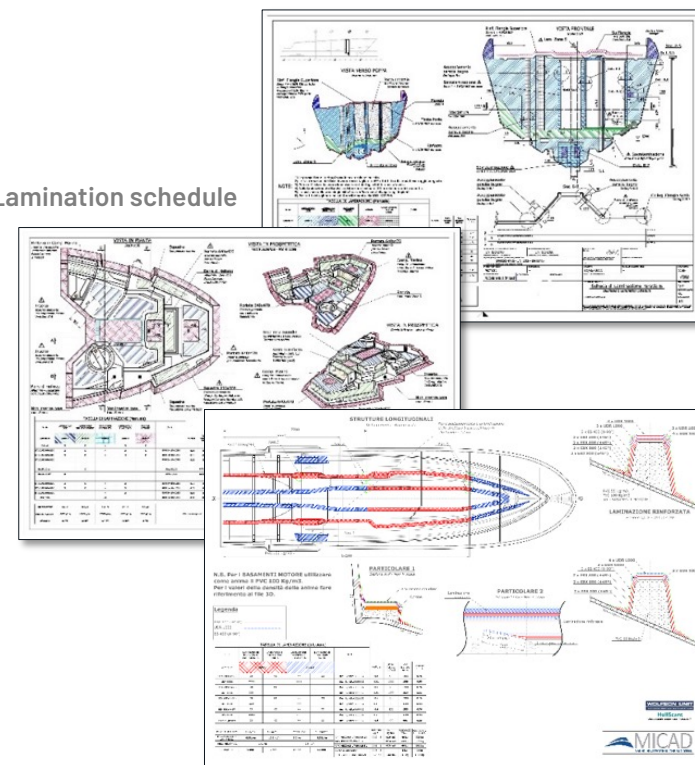
Time: 4

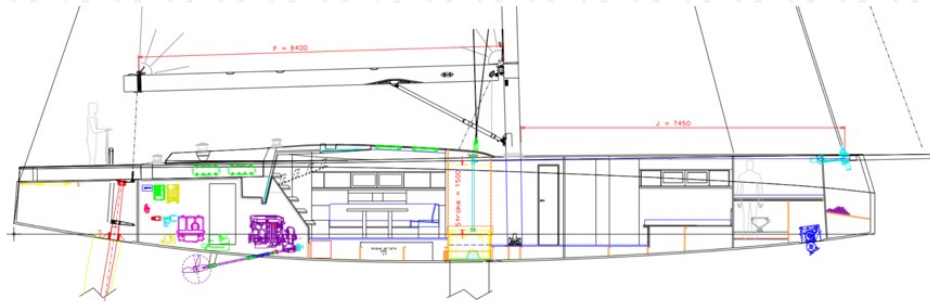


3D FEM Analysis



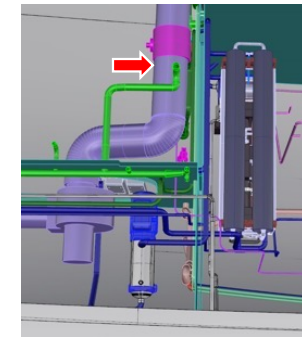
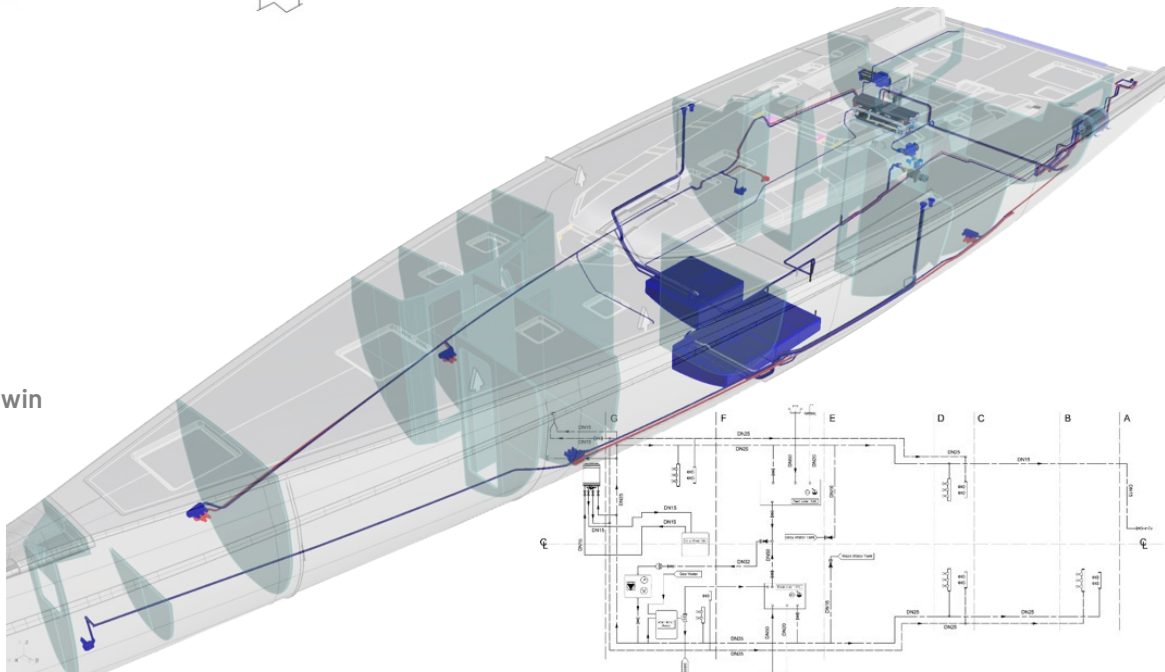
Lamination schedule



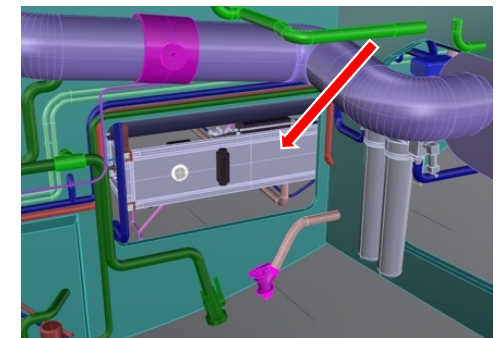


PERSICO

Systems' digital twin



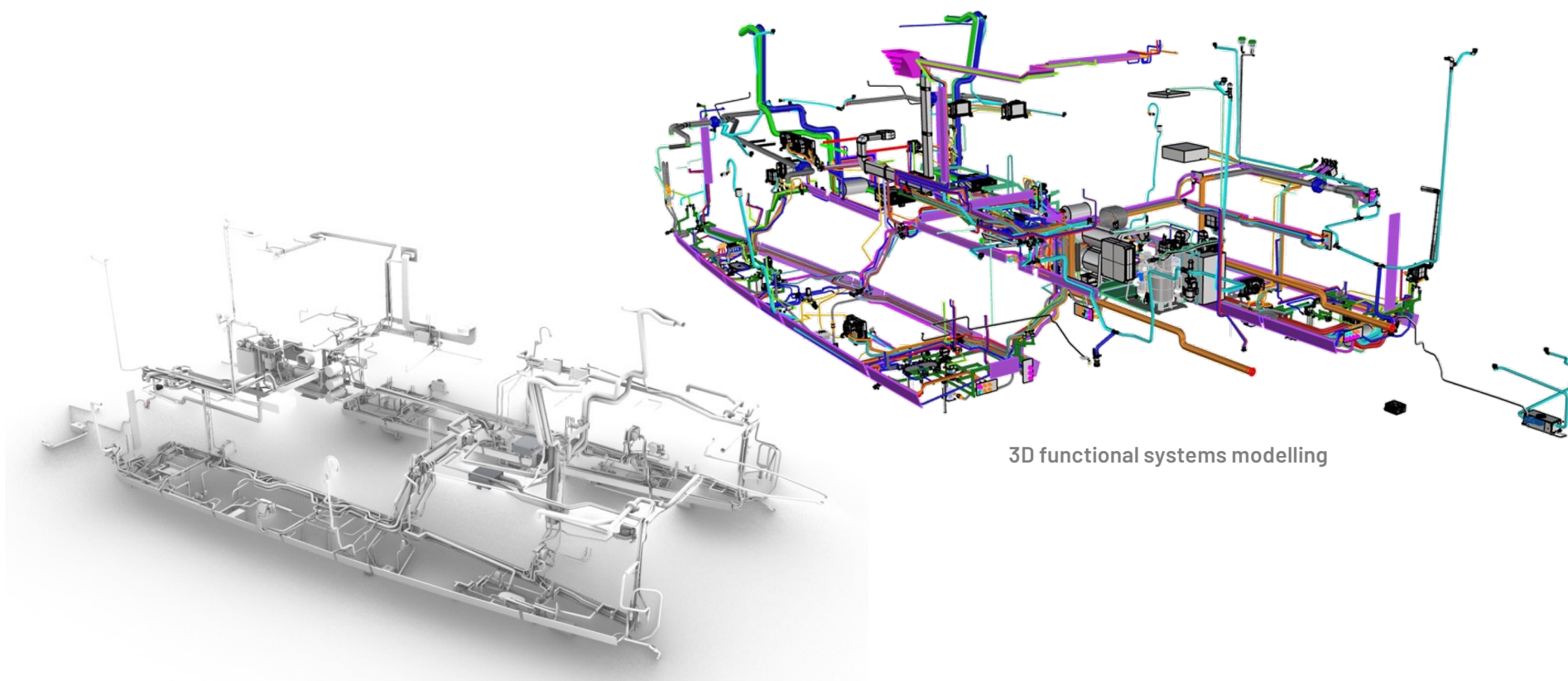
Assembly
instructions



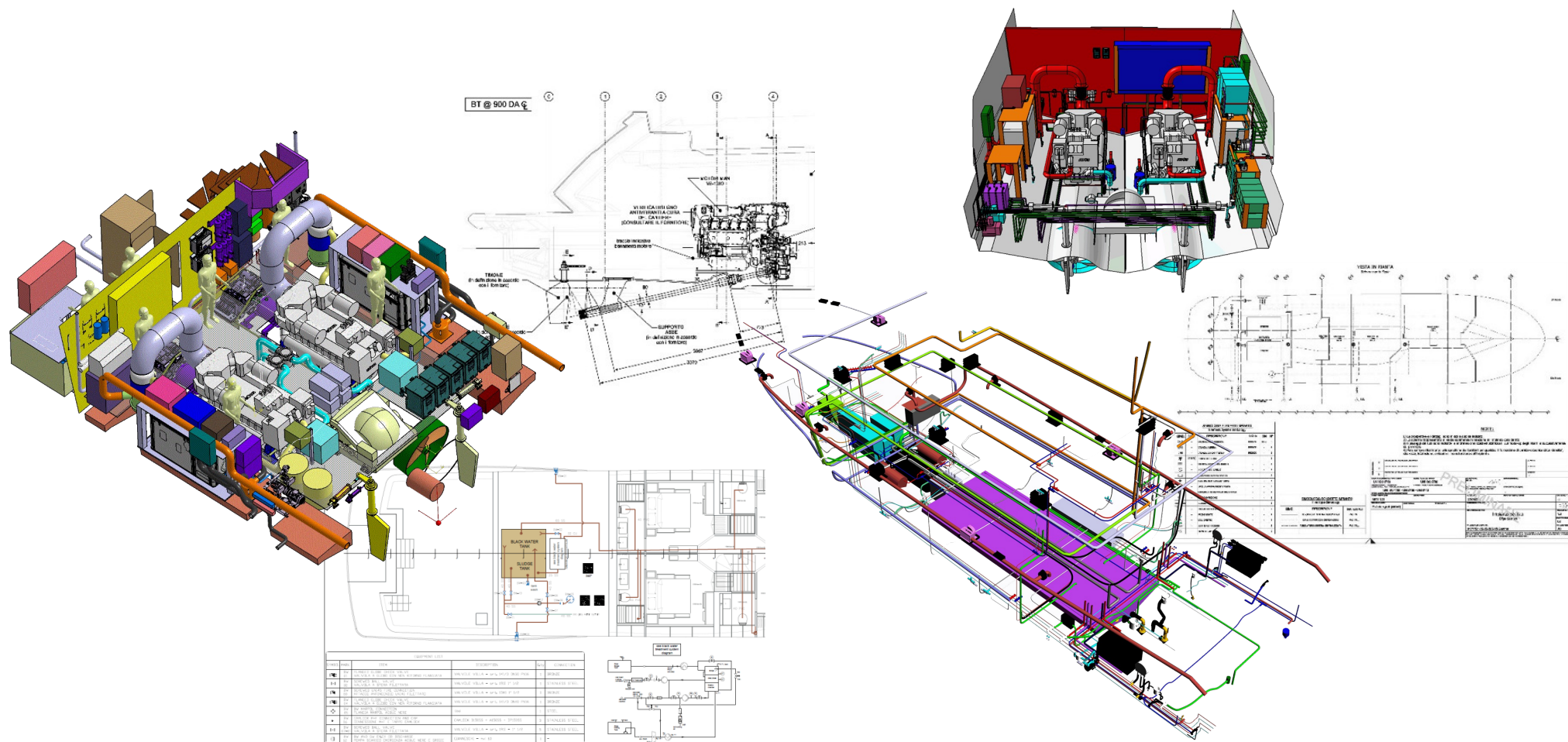
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SYSTEMS PLAN

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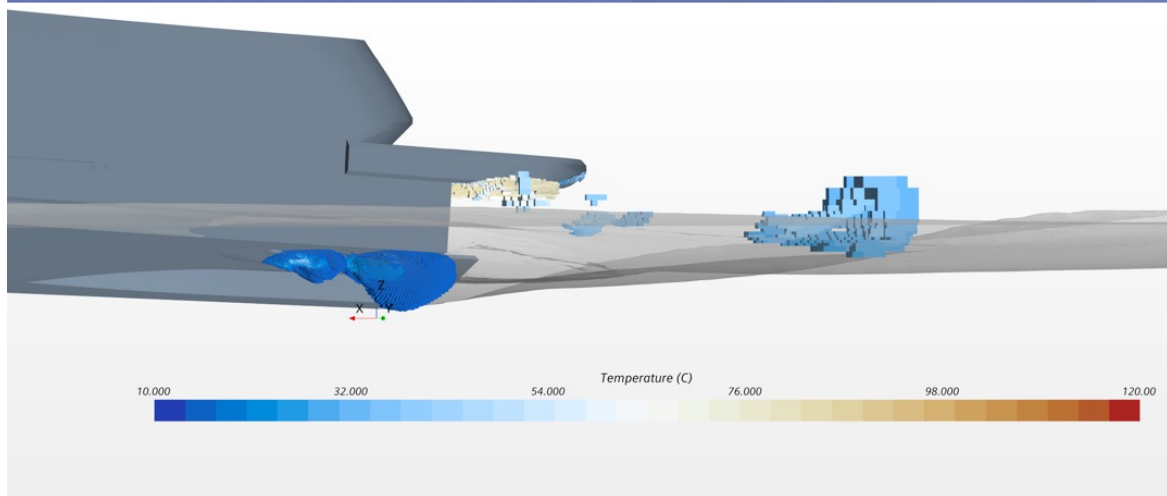
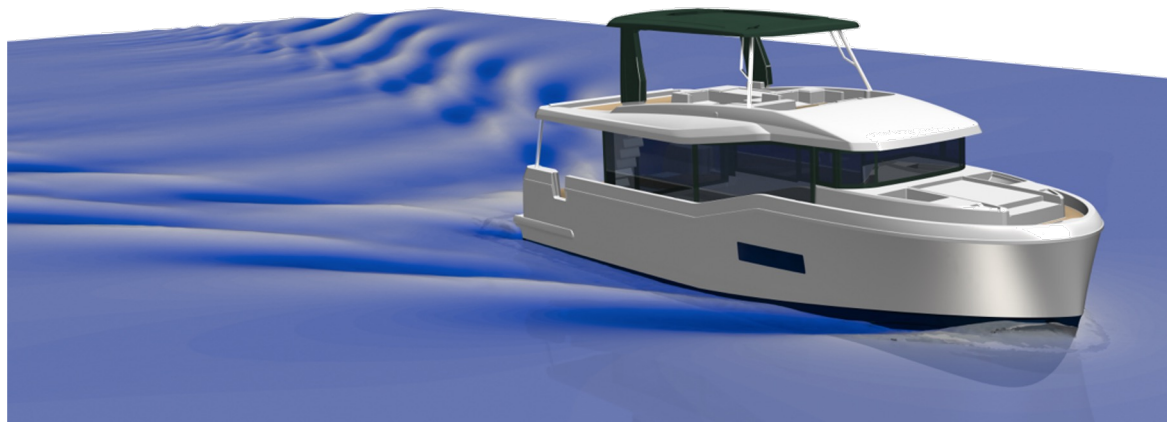
3D functional systems modelling



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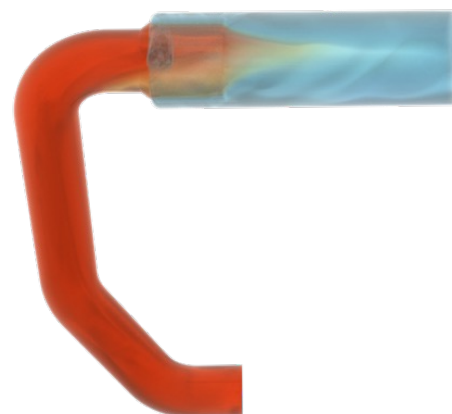
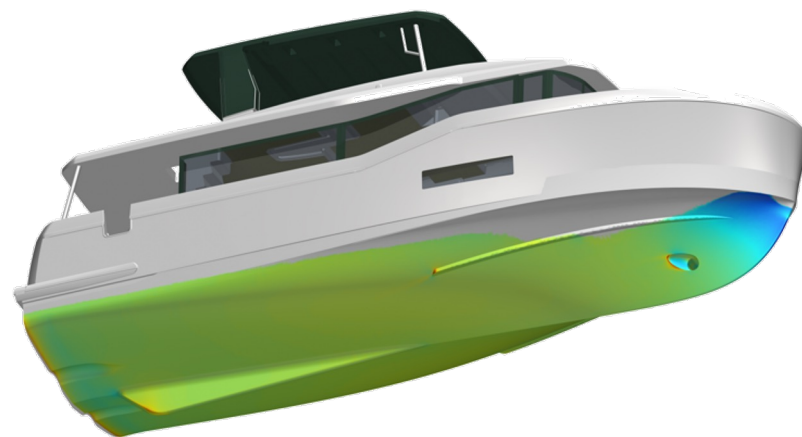
COMPUTATIONAL FLUID DYNAMICS

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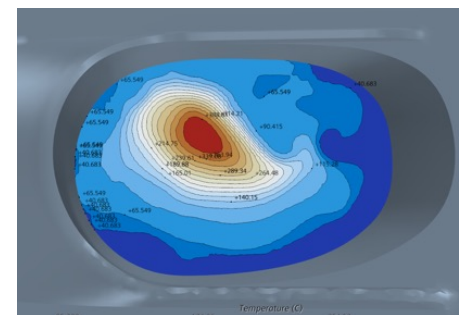


CFD – in water exhaust simulation

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CFD – vorticity distribution

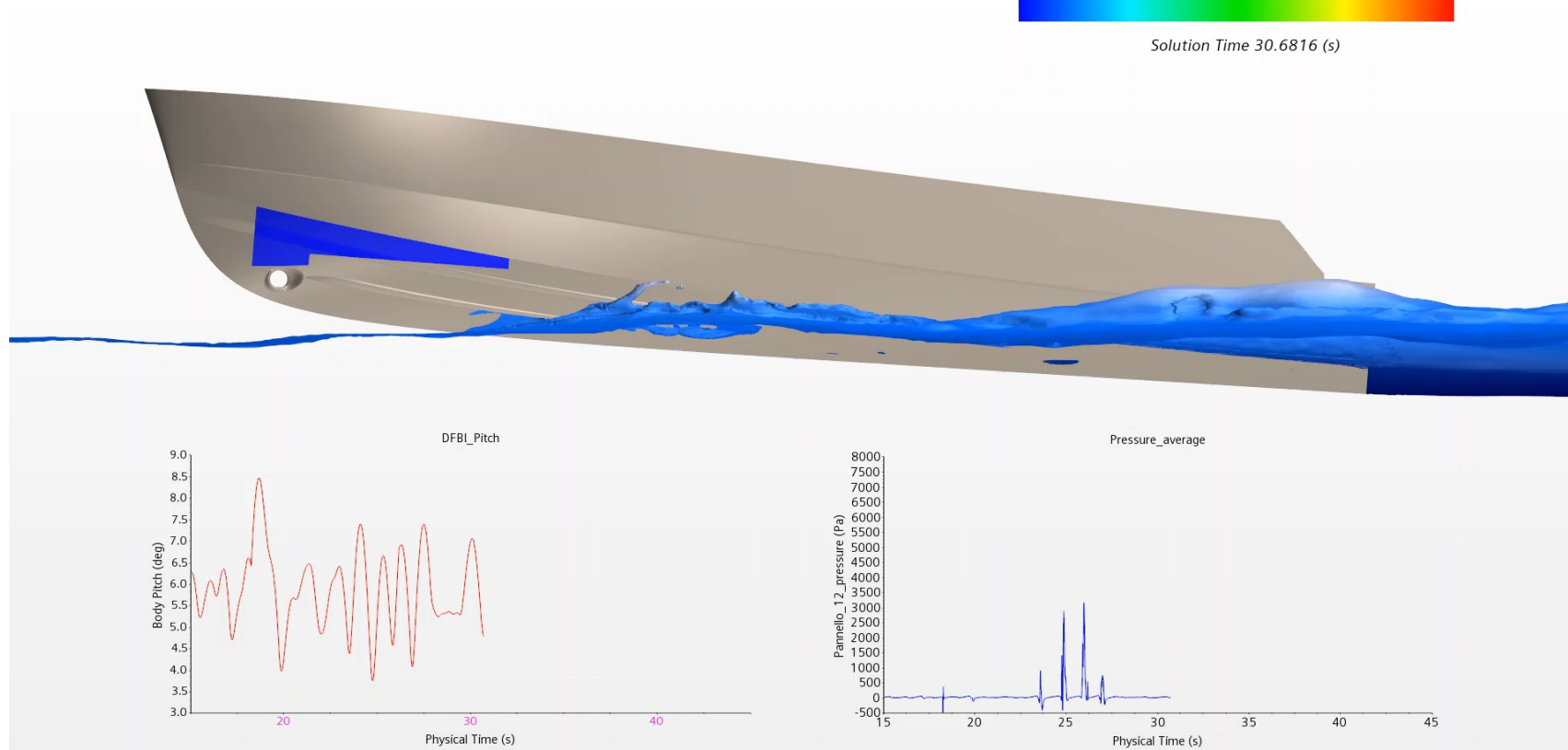


CFD – temperature distribution at outlet

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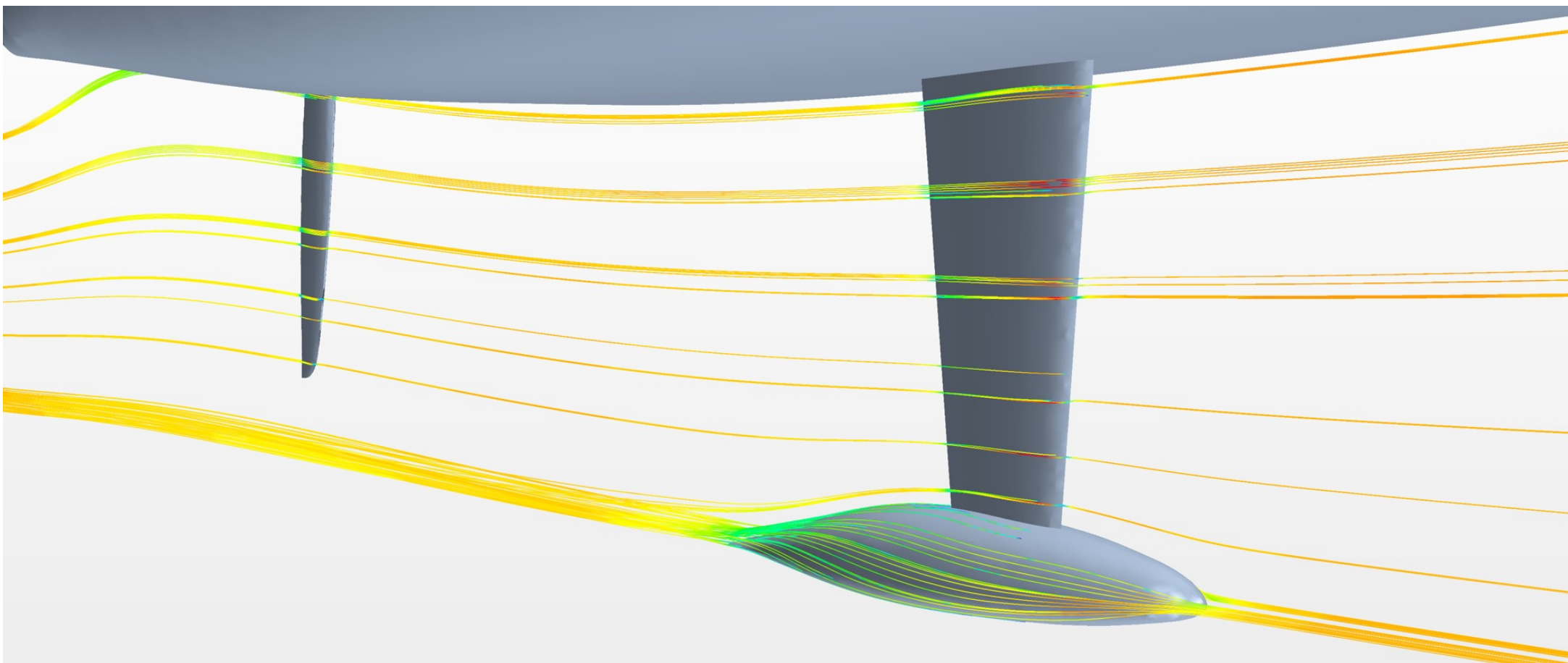
Pressure (Pa)
0.00 2.00e+03 4.00e+03 6.00e+03 8.00e+03 1.00e+04
Solution Time 30.6816 (s)



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COMPUTATIONAL FLUID DYNAMICS

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3D PRINTER AND MEASUREMENT SYSTEMS FOR CONDITIONAL SURVEYS

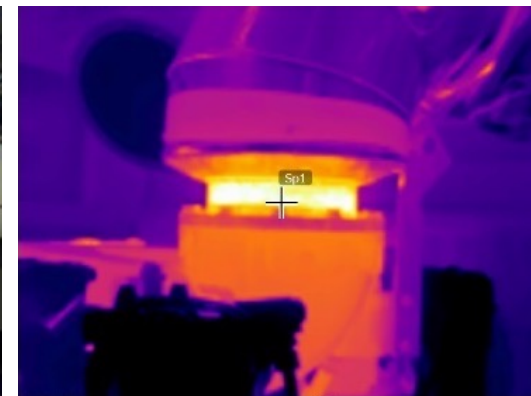
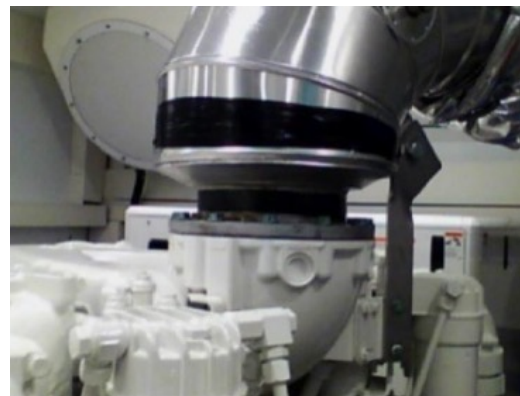
- 3D printer Gimax 3D S2 / Formlabs Form 2

Fast and simple printing processes, printing all thermoplastic polymers and different types of available materials.

- Thermocamera FLIR E6

The instrument is point-and-shoot, which replaces an optical pyrometer, also in economic terms. Each thermal image pixel contains the temperature information.

- Level 1+2 RINA ISO 9712 qualification



TOOLS AND MEASUREMENT SYSTEMS FOR CONDITIONAL SURVEYS ACTIVITIES

- Bruel & Kjaer Vibrotest 80

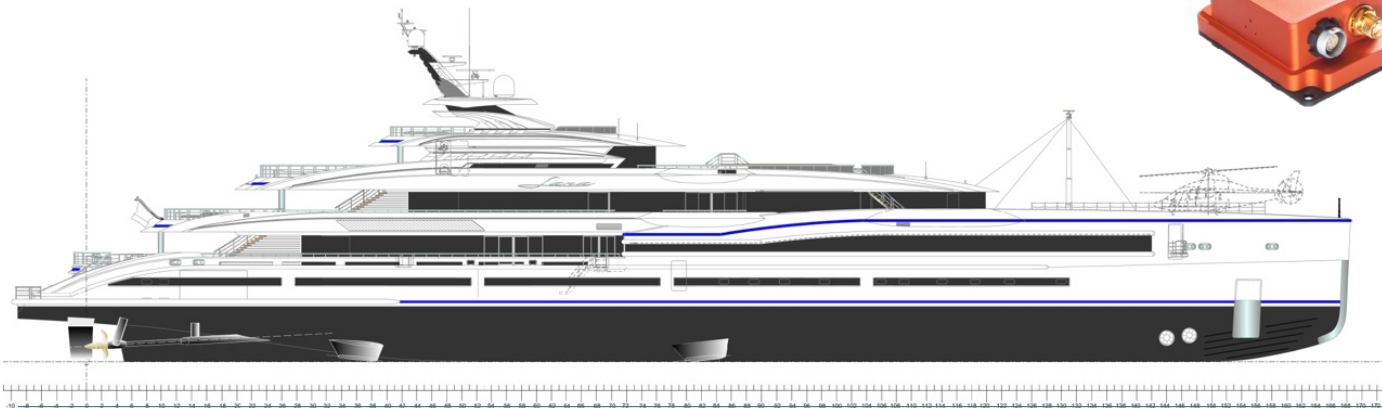
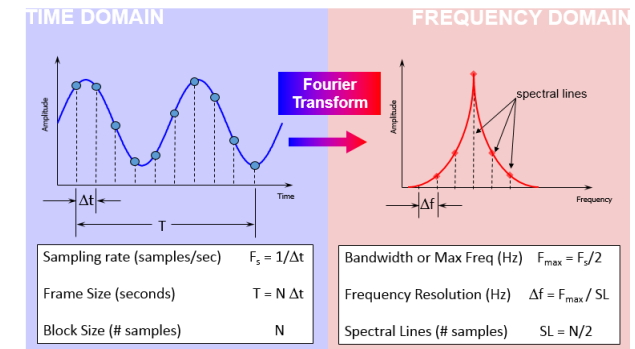
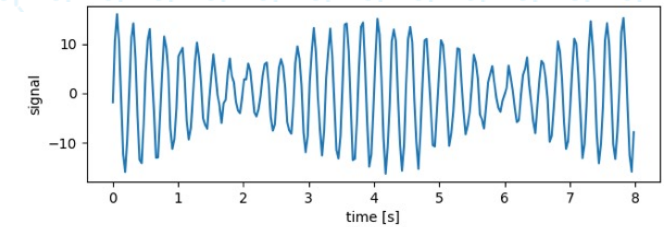
VIBROTEST 80 is the new portable measuring instruments for machine diagnostics, balancing and for condition monitoring.

- Phonometer Class 2

A Class 2 Sound Level Meter will be designed to meet the requirements of IEC 61672-1:2002 standard and will meet the performance requirements that are in this standard for a Class 2 instrument.

- Inertial Control Unit MTI G700

Internal L1 GPS Receiver, high performance vibration Resistant MEMS based gyroscopes (10 deg/h), integrated in FFA (DO-160) certified applications.

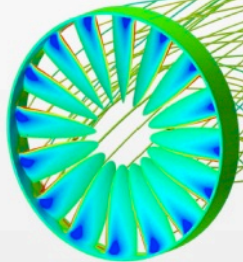


INNOVATION

INNOVATION

PERNA – SHAFTLESS RIM ELECTRIC PROPELLER

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PROPULSORE ELETTRICO REVERSIBILE PER LA NAUTICA

The project goal is to develop a new kind of electric propulsion starting from an electric engine with permanent magnets replacing the rotor with a propeller. Merging the electric engine with the propeller, we simplify the kinematic chain raising up system efficiency. For sail applications on board, this means removing the propeller shaft developing a new propulsion generation. In this way the boat may be considered a «zero emission».

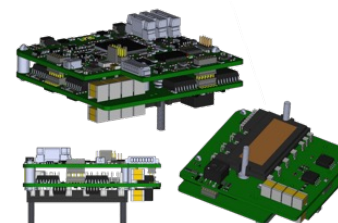
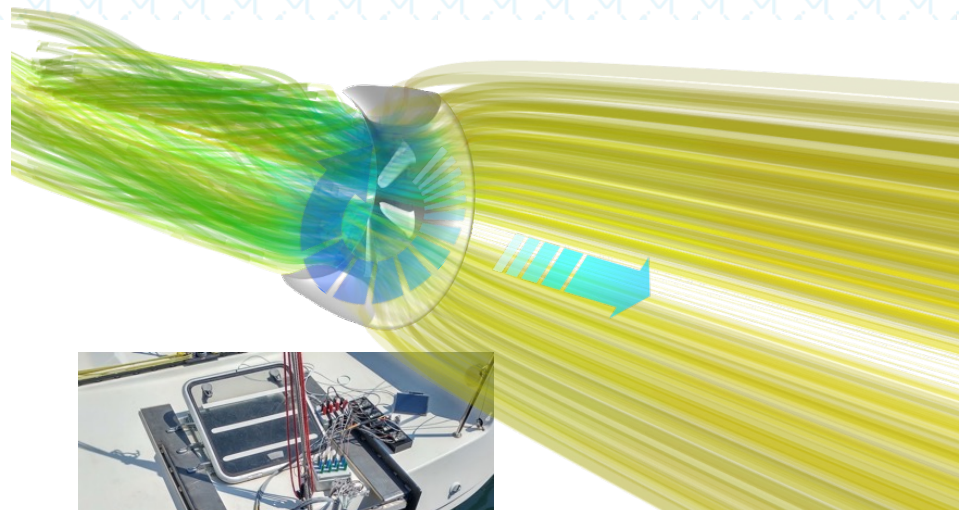
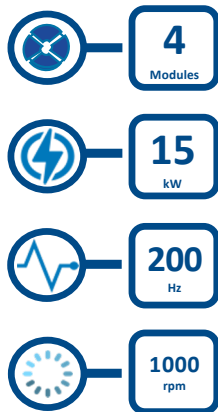


MW.FEP
Marine Water Electric Propulsion



UNIVERSITÀ
DEGLI STUDI
DI UDINE

Data avvio: 01 Maggio 2017
Data conclusione: 30 Giugno 2018
Durata: 14 mesi
Importo finanziato:
497.079 €
Contributo FESR:
329.966 €



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The Cantieri 4.0 projects years to combine the vision of the fourth industrial revolution (Industria 4.0) with the concept of digital Advanced Manufacturing Systems (AMS). Cantieri 4.0 is about the development of the production system and related services, machinery, equipment, measuring systems, production control through ITC methods and technologies based on internet (cloud) for real time integration of all attendees in the supply chain.



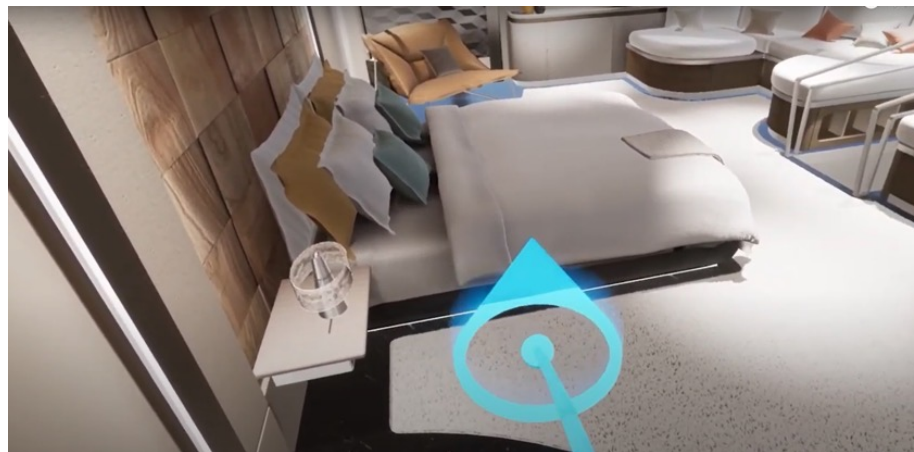
OPPORTUNITÀ PER UNA CRESCITA SOSTENIBILE



NAVE + NAVAL AUGMENTED VIRTUAL REALITY

In this project, MICAD wants to profoundly innovate its prototyping process with the aim of directing its commercial actions no longer exclusively towards the shipyard or producer but directly involving the end user. With this project, MICAD intends to create virtual prototypes, in the fastest and most engaging way possible, with the aim of testing their functions and measuring their performance. This is possible, in a way that is extremely usable for the non-technical user, by creating virtual environments in the most general sense, i.e. mixed realities in which digital information merges with that of the reality surrounding the user.

The technologies to be used are both *Virtual Reality*(VR) and *Augmented Reality*(AR).



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