

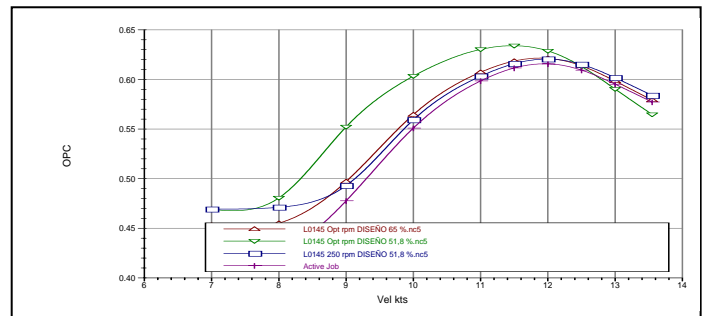
SOLUTIONS FOR THE MARINE BUSINESS

VICUS DESARROLLOS TECNOLÓGICOS S.L. (VICUSdt) is a technology company, committed to dynamic and innovative research and technological development in the marine and energy sectors. The company is specially prepared to provide support in the development of naval projects, especially in the hydrodynamics, propulsion and manoeuvring areas. We assist owners, yards and design offices performing technical support aimed at improving the energy efficiency of vessels.

PROJECT STAGE

Support during the design stage:

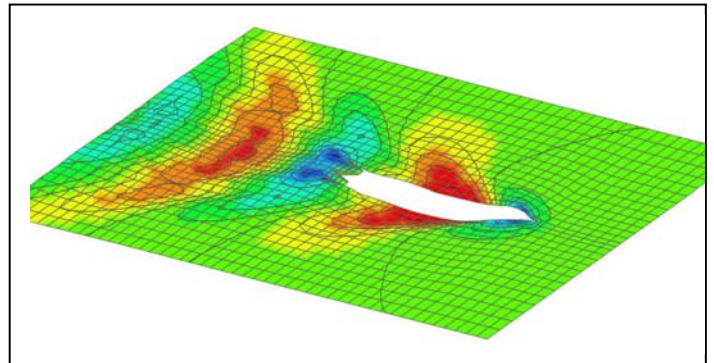
- Preliminary power prediction.
- Definition propulsion plant and generator
- Study of alternatives for propulsion and power generation



HYDRODYNAMIC OPTIMIZATION

Analysis of different hull configurations to optimize ship's resistance through a potential CFD code which facilitates the study of several bow and bulbous bow alternatives in a very short period of time:

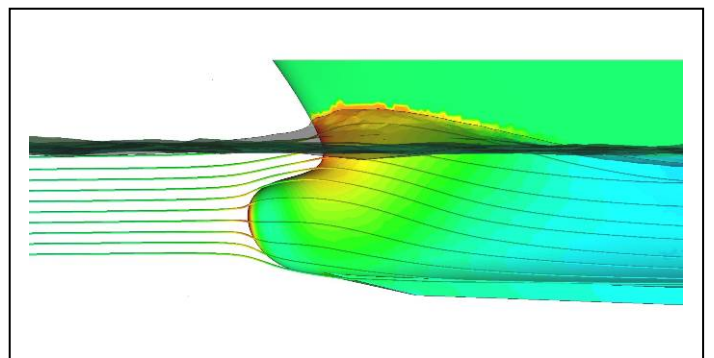
- Bulbous bow
- Sectional area curve distribution, shoulders, etc.
- Dynamic trim and sinkage



COMPLETE HYDRODYNAMIC ANALYSIS

Conducting a comprehensive hull analysis through a viscous CFD code which states:

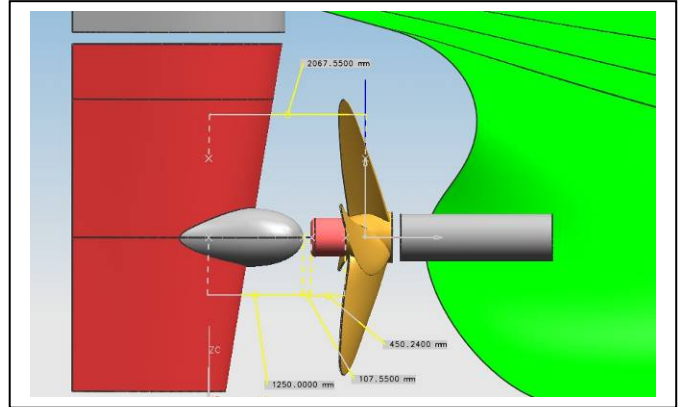
- Ship's resistance with high precision
- Wake configuration at propeller disk
- Stream lines for minimum resistance of ship's appendages (bilge keels, sonar dome, etc ...)
- Dynamic analysis, seakeeping



HIGH EFFICIENCY RUDDERS

Design of rudders adapted to the water flow downstream the propeller, improving the propulsive performance of the whole propeller-rudder system:

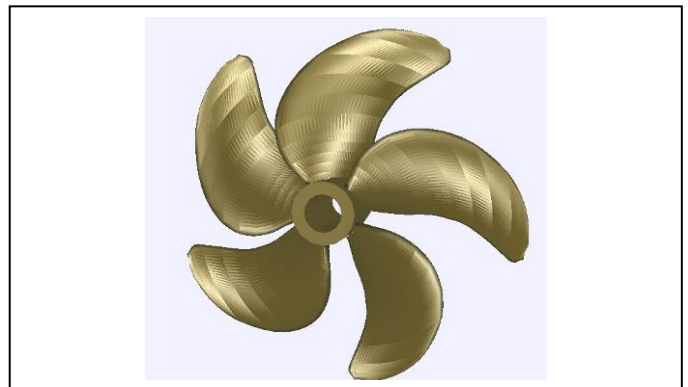
- Improved energy efficiency
- Higher manoeuvrability
- Reduction of cavitation problems in the blade surface



WAKE ADAPTED PROPELLER DESIGN

Screw propellers tailor designed for each application. Optimized designs for maximum efficiency:

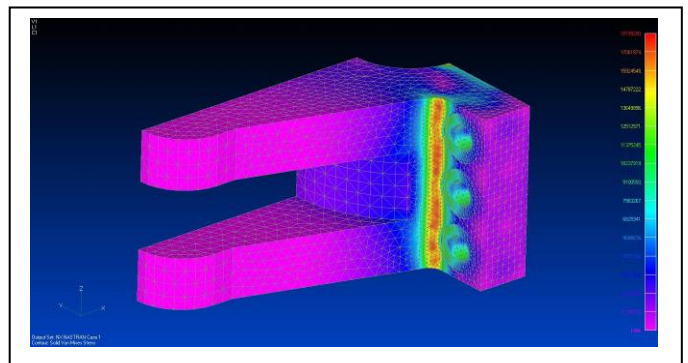
- Cavitation and vibrations analysis
- Calculation of pressure pulses transmitted to the hull
- Propellers for special applications (oceanographic research vessels)



STRUCTURAL AND VIBRATION ANALYSIS

Finite element analysis of machines components and structures.

- Study of stress and fatigue analysis
- Direct Calculation of structures
- Rational alignment and vibration calculations on shafts



RESEARCH AND DEVELOPMENT

VICUSdt regularly collaborates with all kinds of companies in the shipbuilding sector for the development of their R & D projects. VICUSdt is the best partner for innovation projects:

- Development of mechanical systems. New tunnel thrusters
- Energy audits of ships
- Hydrodynamics simulation of wave energy devices

Customers: H.J. Barreras, Norvento Enerxía, Balino SA, Vigo Shipowner Association, etc.

