

Ship Design and Research Centre

CENTRUM TECHNIKI OKRĘTOWEJ S.A.

Ship Design and Research Centre S.A.



CTO S.A.

Paweł Dymarski



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General information:

- **Company established in 1971 to provide research and development as well as design services and support to the Polish shipbuilding industry.**
- **Since 2002 CTO S.A. is a joint stock company with a one single share holder – Polish government.**
- **The company operates on international market.**
- **Employment – 170**
- **CTO S.A. is seated in Gdansk**



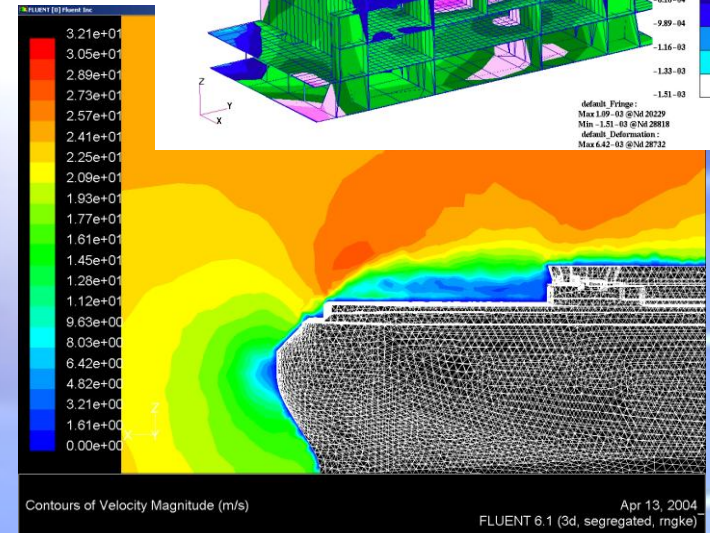
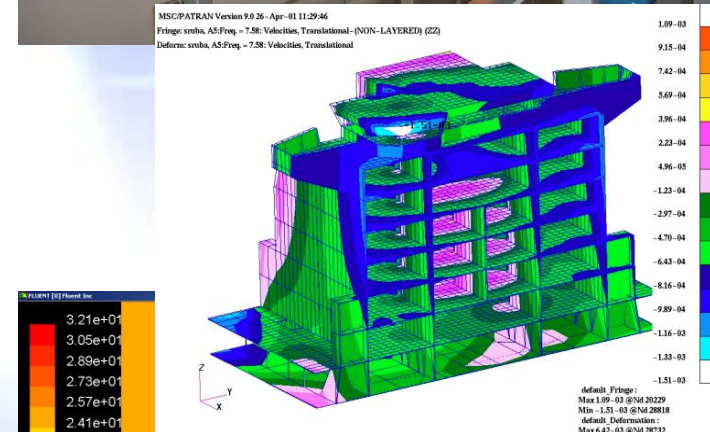


Principal activities:

- Conduction and coordination of the research and development in the field of technical, biological, environment as well as chemical sciences with the particular emphasis put on marine (shipbuilding) applications
- Design of ships and equipment

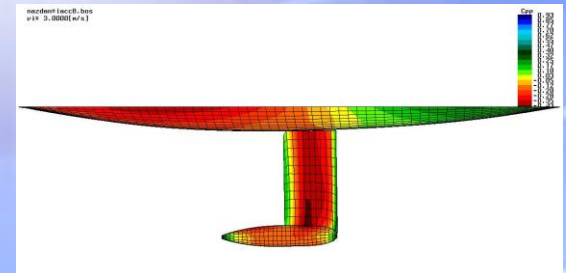
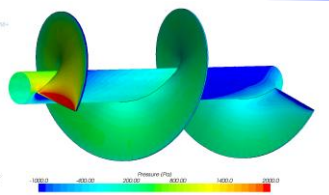
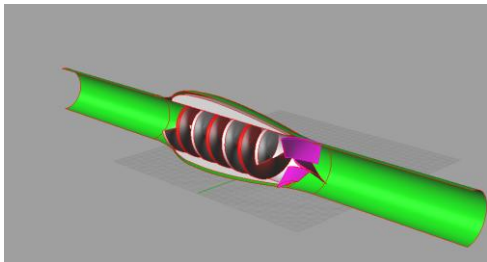
Supplemented by:

- Technological, urban and civil designing,
- Production and maintenance of ship control and navigation devices,
- Design and manufacture of laboratory facilities and measuring devices
- Data base and information management, editorial activities,
- Software production,
- Training.

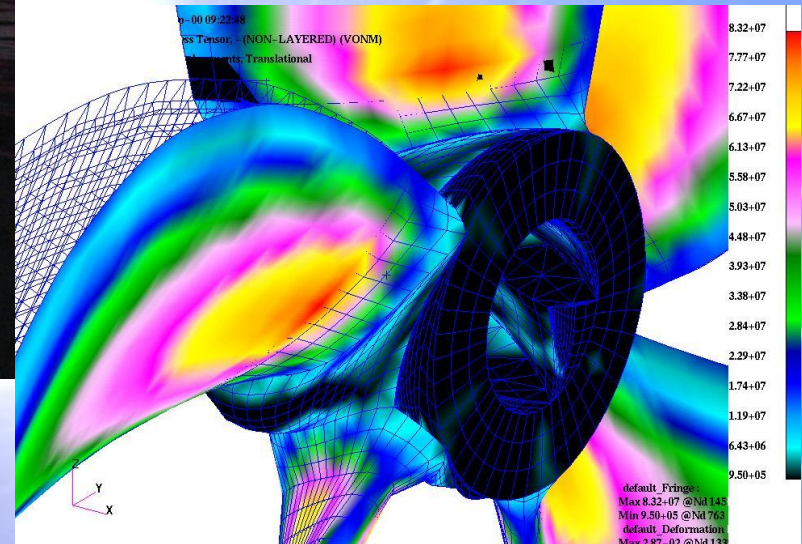


Research and development/design support programs:

- **Shipbuilding** — design, model testing and numerical analyses, full scale trials of ships, their systems and equipment
- **Yachts** — support for yachts designers with suitable model tests and numerical analyses
- **Off-shore** — model testing and numerical analyses regarding hydrodynamics, construction mechanics, acoustics and aerodynamics for off-shore structures
- **Renewable energy** — design support, testing and CFD analyses of renewable energy plants, especially in marine environment
- **Research facilities** — program for designing and manufacturing, training and maintenance of research facilities and measuring equipment
- **Environmental engineering** — program of research of the influence of extreme environmental interaction on transport modes, buildings and other objects (e.g. fire resistance testing, acoustic testing)
- **Medical engineering** — program for design and testing of devices applied in medical technique



Ship hydromechanics – numerical and experimental



- Resistance – propulsion tests,
- Seakeeping tests,
- Manoeuvring test,
- Launching tests,
- Cavitation tests.
- Advanced CFD analyses

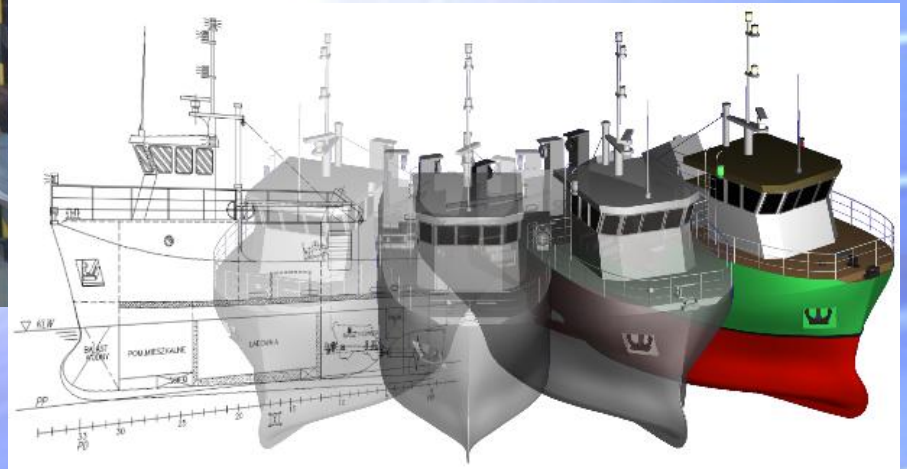
Ship structure and acoustics

- Numerical modelling of structure mechanical
- Vibration and noise measurements
- Acoustic analyses (acoustic laboratory)

Materials, corrosion and environment protection



- tests of physical and chemical properties of materials including corrosion and fire testing



**Design of ships
and research facilities**

Design capabilities

Ship design and ocean engineering equipment

- complete ship and vessel designs
- design of deck equipment, power plant equipment and power plant operation systems (in the modular technology)
- ship repair documentation including reconstruction documentation and constructional supervision





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CTO S.A. international cooperation:

ITTC (International Towing Tank Conference

ISSC (International Ship and Offshore Structure Congress)

EFC (European Federation of Corrosion)

IMO (International Maritime Organization)

COREDES (Committee of Research and Development in European Shipbuilding)

WATERBORNE Technology Platform



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CTO S.A. coordination role in Poland

Polish Maritime Industries Forum

established under the initiative of CTO S.A. on September 29th 2003 by the decision of the National Chamber of Maritime Economy

- ship-owners,
- ship operators,
- ports authorities,
- shipbuilding industry and its suppliers,
- maritime universities,
- maritime R&D centres and institutes.

- Polish government and its local administrative bodies,
- local authorities,
- municipal authorities.



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