



Release News and Roadmap

Heinrich von Zadow

FRIENDSHIP SYSTEMS AG

CAESES User Conference 2024



Agenda

R&D Activities

- Retrofit55
- MariData
- VIT VI (KI-D)

CAESES developments

- Maritime Release 5.3

Roadmap

- Web Applications
- Data Driven Design

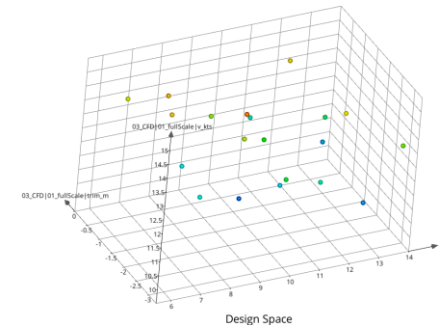
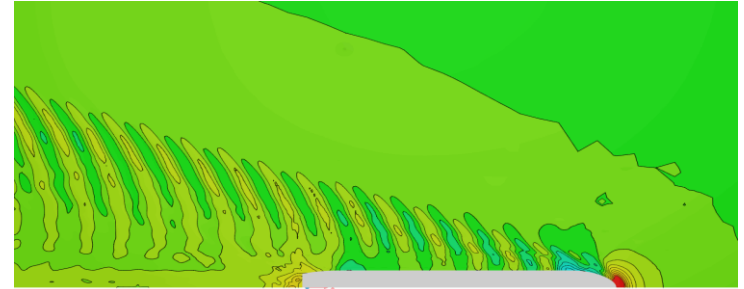


RetroFit Solutions to Achieve 55% GHG Reduction by 2030

- 14 Partners
- Decision support tool for the evaluation and optimization of retrofit options

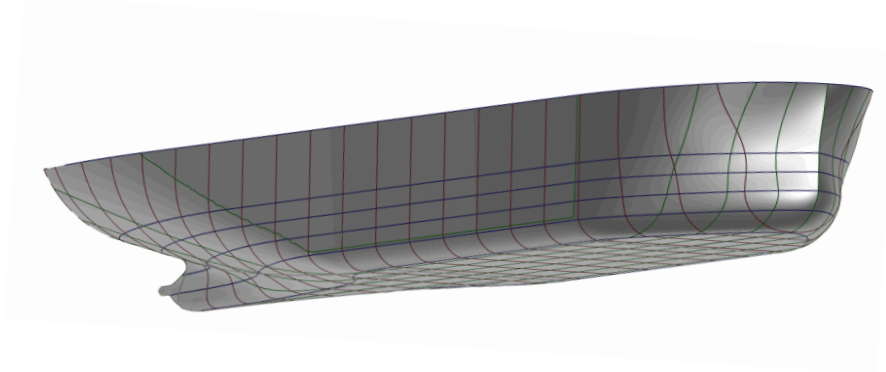
Role of Friendship Systems

- Provide a optimisation platform to be used with Surrogate Models
- Support partners in preparation of these surrogate models
- DoE-based analysis of design and operational parameters for retrofit options
- CFD simulations



MariData

- Energy management and decision support system for ships in operation
- Flexible parametric model for the redesign of ships in operation
- Web Application “Level 1 Hull”



PARAMETERS

LENGTH BETWEEN PERPENDICULARS	<input type="text" value="160"/>
BEAM	<input type="text" value="30"/>
DRAFT	<input type="text" value="10.5"/>
DESIGN SPEED	<input type="range" value="14"/>
DISPLACEMENT	<input type="text" value="37000"/>
LCB FORWARD OF MIDSHIP	<input type="range" value="0.02"/>
CB	<input type="text" value="OK"/>

RESET PARAMETERS

AFTER ADJUSTING YOUR INPUT PARAMETERS PLEASE LAUNCH AN UPDATE. THIS WILL TAKE A MINUTE.

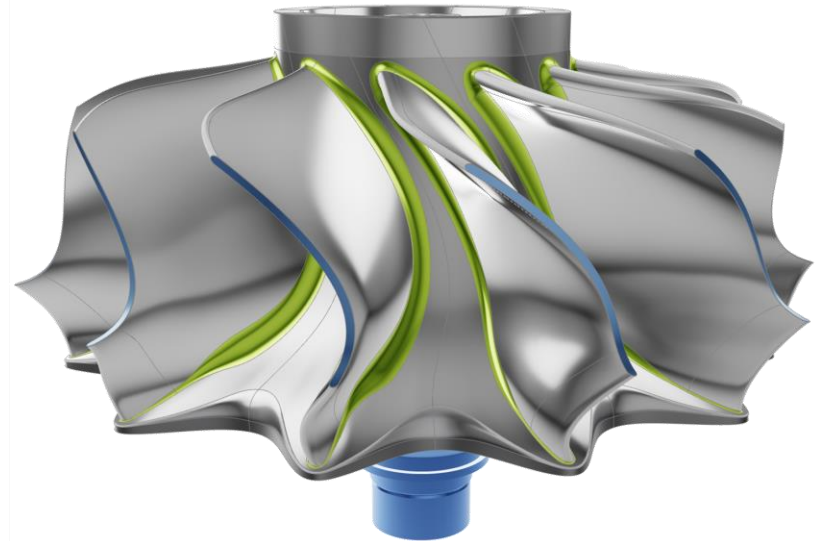
UPDATE

KI (AI) in Simulation-Driven Design (SDD)

- enhance productivity

CAESES

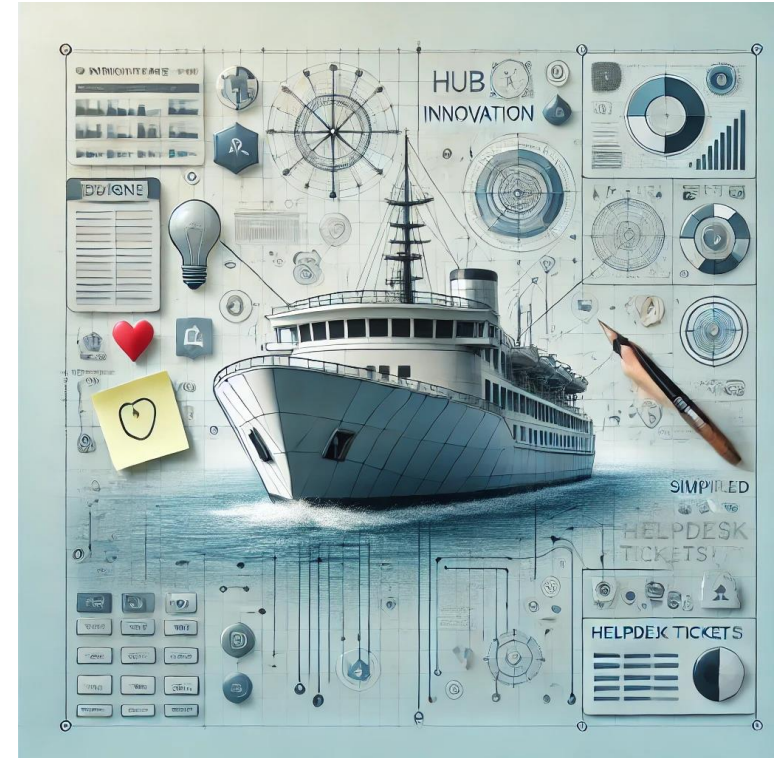
- AI in documentation and Feature code
- CAESES to become “self-learning”
- Deepening our understanding and usage of dimensionality reduction
- Prediction of part-tolerances and their implications on assembly
- Additional usage of Surrogate Models
- usage of Adjoint and ROM methods in optimization



Maritime Release 5.3

Major topics

- UI/UX
- Workflows
- Hydrostatics and Stability
- CFD Connections
- Tutorials and documentation



Types

- Specific Curve Types for particular fitting requirements
- Components and Interfaces

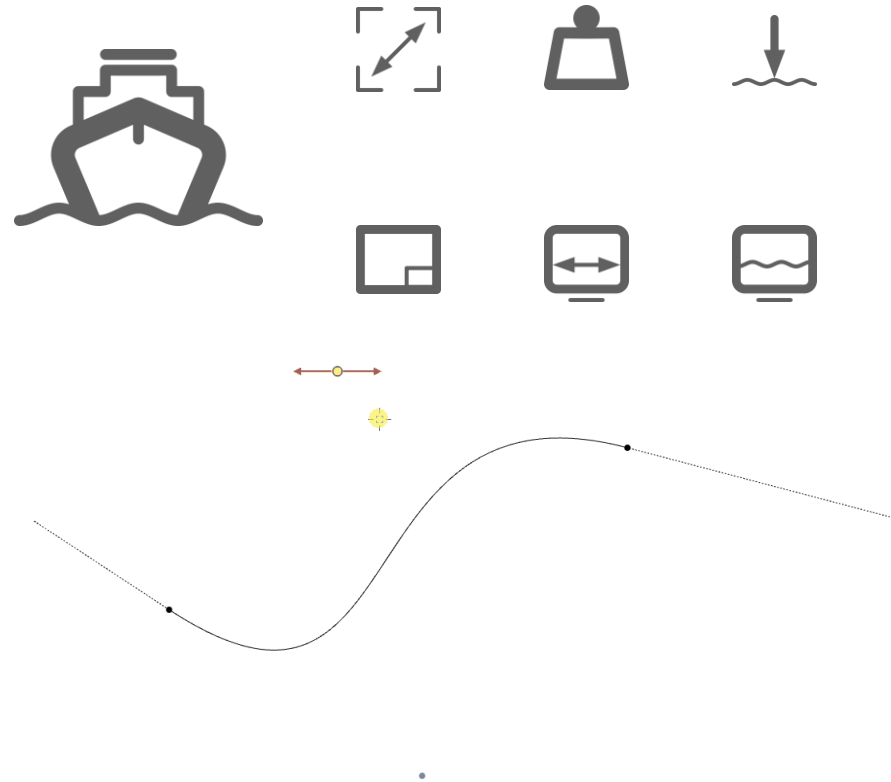
Context Menu Actions

- Renumbering Scopes
- Target Search for Parameters
- Creating Subscopes

New BRep Operations

Advanced Interactive Point Handling

- Bounded Parameters and handle toggles

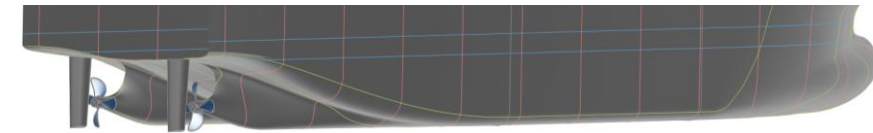
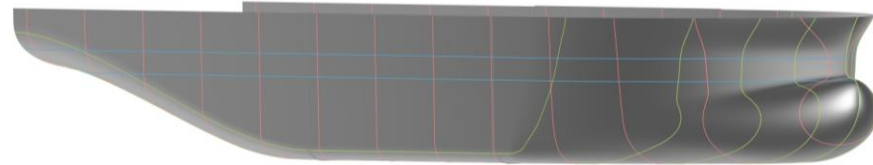
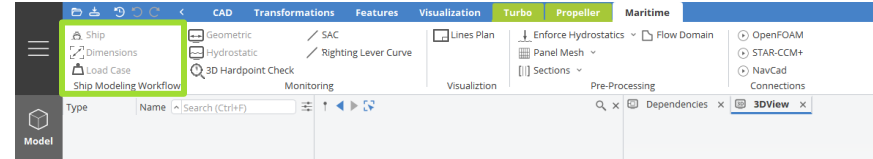


Ship Modeling

- Interactive and flexible
- Palette of interchangeable Components
- Custom editor

Component based approach

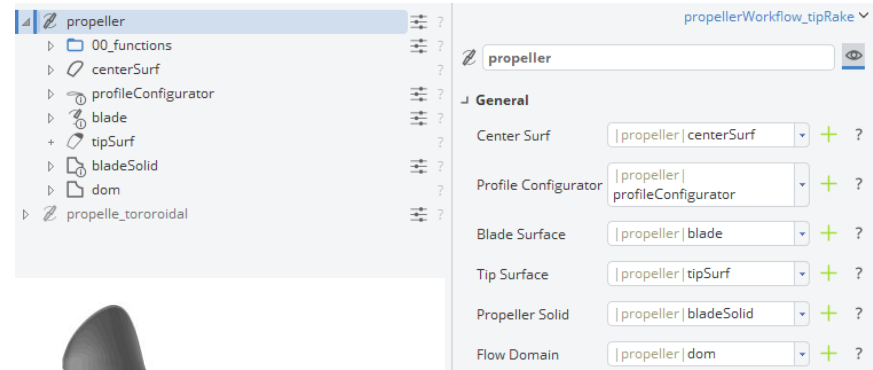
- Dimensions
- Operating conditions, Load cases, Environmental conditions
- Links to CFD
- Links to Hydrostatic
- ...



Propeller Workflow

Complete Setup from scratch available for Conventional, Tip-Rake and Toroidal Propellers

- Profile Configurator
- Center Surface
- Flexible function creation methods
- Blade Surface
- Tip Surface
- Propeller Solid
- Propeller Flow Domain



Maritime Release | Hydrostatics and Stability

Based on Ship Component

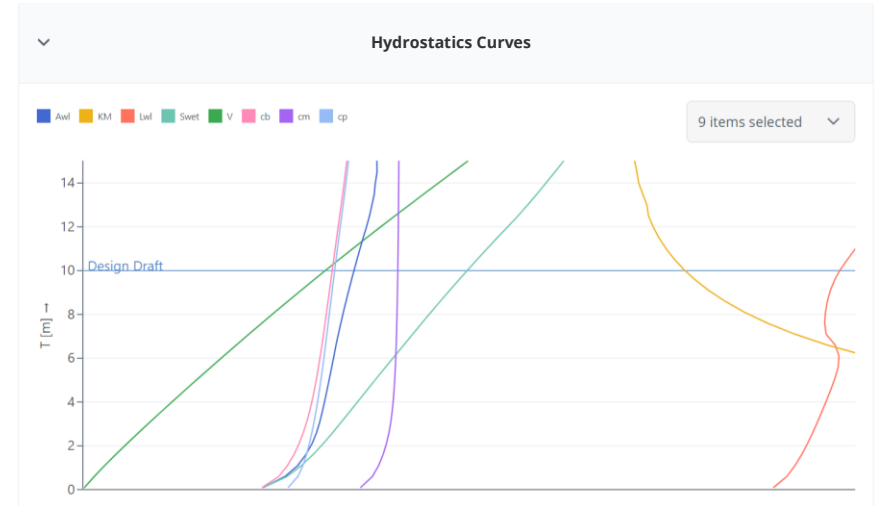
- New Workflow and Viewer

Introducing Floating Conditions

- Design, Prescribed and Equilibrium Floating Conditions (incl. Load Cases and Environmental Conditions)

Range of functionality

- Sectional Area Curve (SAC)
- Righting Arm Curve (RAC)
- Hydrostatics Curves
- IMO criteria > Constraints
- Interactive Linesplan

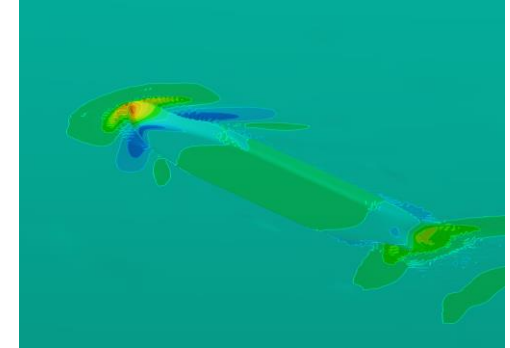
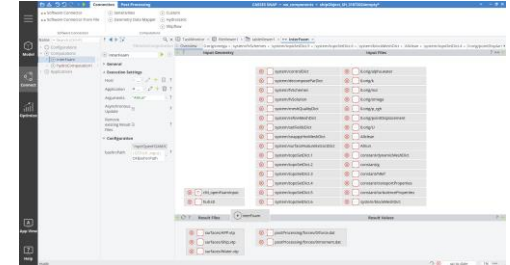
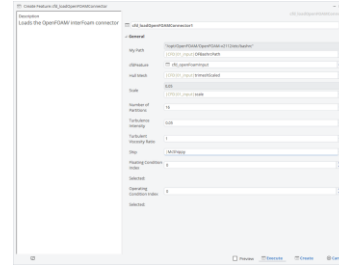


Workflow based

- Key data is passed from the Ship component (i.e. main particulars, Load Cases, Environmental and Operating Conditions)

Available Connectors

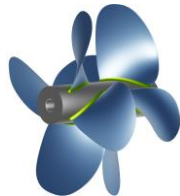
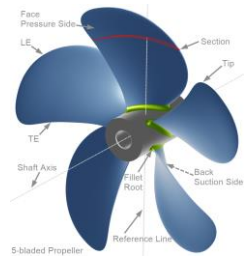
- NavCad
- MaxSurf
- OpenFOAM
- StarCCM+
- FineMarine
- Shipflow
- GridPro



Maritime Release | Tutorials and Documentation

Online Documentation Browser

- Collection of new Samples and Tutorials
- Extensive new Theoretic Material



CAESES Docs Tutorials Samples Types

Search Ctrl+K

CAESES User Guide

CAD for Automated Shape Optimization

This help portal gives you the essentials of parametric modeling, automation and optimization with CAESES.

[Get Started](#) [View Demo Models](#)

Follow the Tutorials

Try out the tutorials that are included in the "Tutorials" section, to get some first hands-on exercise.

Watch Video Tutorials

We are constantly generating new videos that show how to use CAESES. If you don't like reading, check them out.

Check out Demo Models

Take a look at the demo sample projects and browse through ideas of how to set up your parametric model or use them as a starting point to kick-start your model setup.

Ask for Help

Customers can submit questions and bug reports in our CAESES Helpdesk and arrange an online support meeting with one of our support engineers.

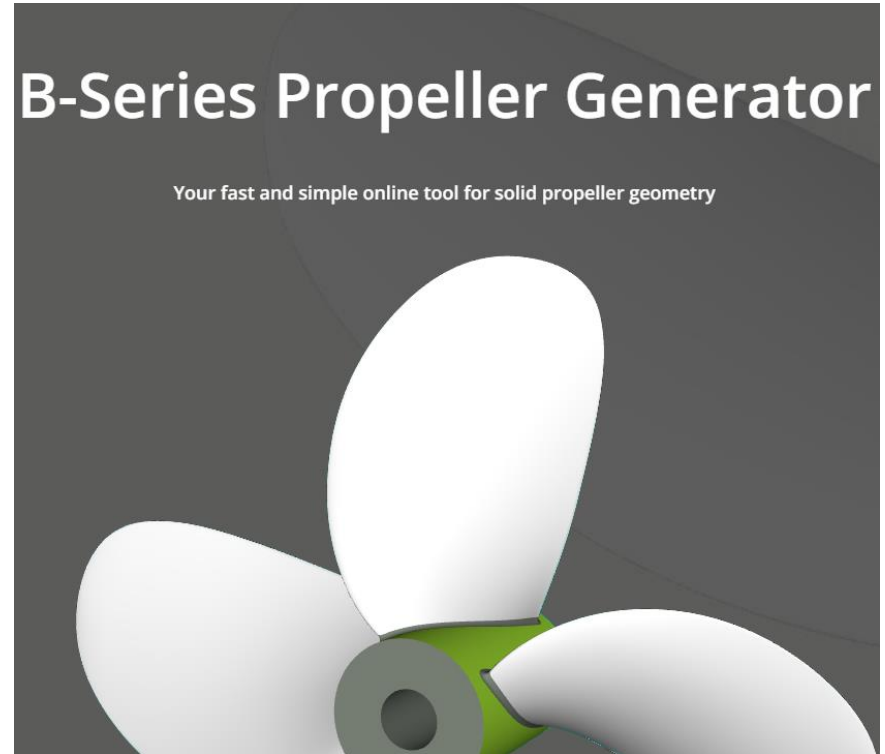
Use the Forum

Students with free non-commercial licenses should also check out the CAESES Forum. Go ahead and put your questions in there!

Roadmap

Roadmap

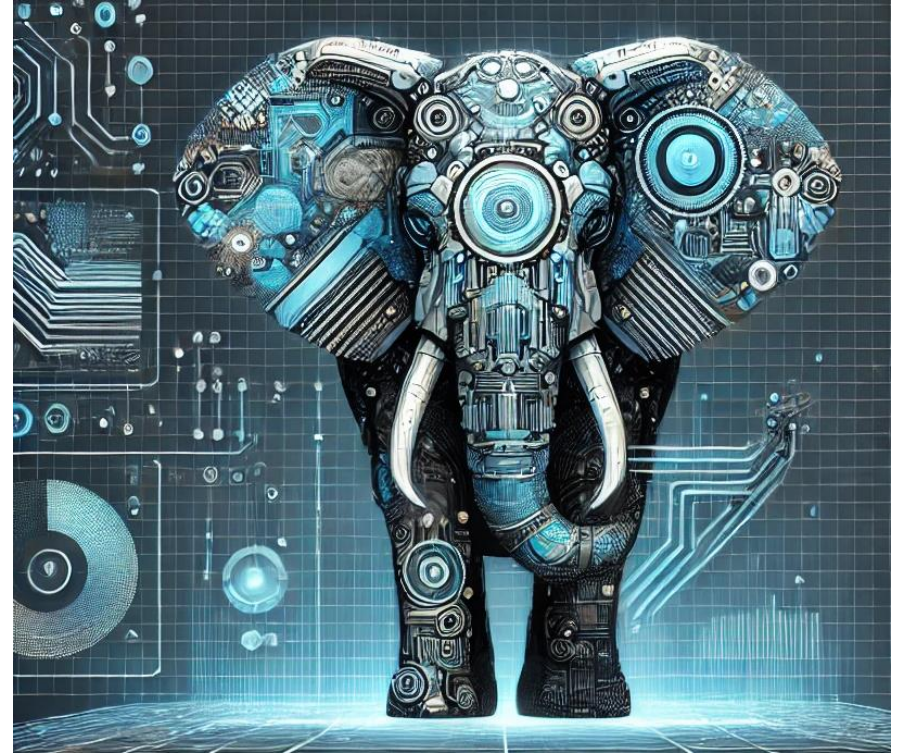
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- Web Applications



Roadmap

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- Web Applications
- **Data Driven Design**



www.friendship-systems.com

Heinrich von Zadow on behalf of the whole team of
FRIENDSHIP SYSTEMS
von.zadow@friendship-systems.com

