



CARSOE SIMULATION



CHALLENGES

- Limited accessibility to the production system on-board of the trawler.
- Validation of operating performance of self-supplied products in collaboration with machineries from third parties
- A lack of visualization of the full production system before it is installed.

SOLUTION

Customized simulation models that can visualize and analyze the interaction between processes in a 3D virtual environment.

KEY RESULTS

The model gives Carsoe the ability to validate their operating performance through visualization and simulation. Furthermore, the visualization provides the opportunity to fully visualize solutions before implementation.

POWERED BY



“Having the simulation model, provides us with the possibility to perform consequence and capacity analysis of different scenarios and parameters, which would could not have done without the simulation model.”

- Kenneth Larsen, Product Manager

Carsoe designs and produces stainless steel machinery for the food processing industry. One of their core business areas is the development and production of machinery for seafood processing on-board of fishing trawlers.

Challenges

Seafood caught on a trawler undergoes several processes before it is frozen, packed, and stored on the ship until the course is set to a harbor. This setup and output-driven environment of the fishing industry leaves limited possibilities to perform stress-tests on the actual system. To cope with this challenge Carsoe has partnered with simulation experts from Integrate, who used several customized simulation models programmed in the simulation software Enterprise Dynamics to imitate the behavior of the machinery on-board of the trawler.

Solution

The virtual model of the production processes has enabled Carsoe to gain

detailed insights into the functionality and interaction of the machinery throughout the entire production line. As input for the simulation model several years of data about the haul of seafood from multiple trawlers was provided and transformed into distribution functions to imitate the behavior of the production system over time. The input data was especially crucial, since the amount of seafood and species caught depends highly on the season of the year. The simulation models enabled the modelling of the behavior of the processes with a large variety of amount of seafood and species caught as input.

Results

Integrate developed the simulation models and performed multiple tests of different scenarios of concepts to clarify KPI's and performance criteria of various processes. The simulation models have aided in the improvement of processes and control logic on several trawlers by supporting the decision-making process for relevant stakeholders.

Perspectives

The range of potential uses for the simulation models is broad and can be used beyond the optimization of machinery. Bearing this in mind, Carsoe currently uses the visual aspect of these in sales pitches and presentations for customers to create a common understanding of how the production system will perform in an environment where space is limited.

Additional cases where Carsoe utilizes simulation are:

- Training of crew members in the usage of the machinery,
- bottleneck analysis and visualization
- validation of future production concepts to provide an enhanced degree of certainty in the design phase of projects

“It was of great benefit to us to be able to present a simulation model on exhibitions. By using simulation models, we could attract potential customers and it provided us with the possibility to communicate a complex technical solution in an efficient way.”

- Jeppe Christensen, Sales and Business Manager – Seafood Processing

CARSOE

Carsoe designs and produces products for the food processing industry.

The range of products offered in this business area goes from single machineries such as industrial freezing units to turn-key solutions of the entire production setup on a trawler.

FACTS

Head office Aalborg

Established 1976

Employees > 200

Website www.carsoe.com

