

Reintrieb GmbH

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Industrial HPC Course



EURO

SUCCESS STORY IN PROPULSION SYSTEMS

Reintrieb GmbH

Reintrieb GmbH is a clean-tech R&D company, specializing in mechanical engineering of clean gear and propulsion systems in the marine/ inland water ways sector. Reintrieb wants to bring two patented products on the market. An oil-free water-lubricated high performance gearbox and the side-by-side (SBS [EP 2613999]) drive relevant for this project.

THE PROBLEM

Demand of a innovative propulsion system due to declining water levels.

SUCCESS STORY DETAILS

HPC provider: VSC
Domain Expert: Bernhard Semlitsch
Country: Austria

THE HPC PROBLEM DOMAIN

Complex compute intensive CFD calculation was needed to reduce costs for test loops on prototypes. Rheintrieb GmbH lacked the experience and know-how on working with highly parallelised code. In addition, the SME needed funding to make use of the most powerful supercomputer in Austria.

THE SOLUTION

Rheintrieb approached EuroCC Austria, who were able to provide support for a succesful SHAPE programme application, facilitate access to the Vienna Scientific Cluster and link the company with CFD experts from TU Wien.

THE BENEFITS

- Much finer mesh and therefore more accurate model
- Reduction of costs by shorter prototype testing phase
- Faster time to market

SUCCESS STORY IN PROPULSION SYSTEMS

THE PROBLEM

The low water phenomenon has become a systematic issue for inland navigation companies, threatening to interrupt logistics chains and cause significant economic losses. After a particularly continuous decline of water levels on the Rhine in 2018 (132 days) the need to make ships adaptable became even more pressing. Reintrieb GmbH thinks it has found a solution with a innovative propulsion system.

THE HPC PROBLEM DOMAIN

Reintrieb's optimised side-by-side (SBS) propulsion system promises to be the solution to the persisting and worsening issue of declining water levels. Both the mainland European logistics chains and the company itself depend greatly on bringing the SBS to market as soon as possible. While open water basin tests had already shown great results for the side-by-side drive, the further development of the prototype demanded going beyond conventional calculation methods based on fixed parameters. This is why the team had to carry out Computational Fluid Dynamics (CFD) simulations on a supercomputer to fundamentally model the effect of the various variables on the drive's efficiency and to calculate an optimal arrangement and shape of its components.

THE SOLUTION

Reintrieb GmbH teamed up with EuroCC Austria, who facilitated the access to the Vienna Scientific Cluster (VSC), Austria's most performant supercomputer. In addition, EuroCC Austria also supported Reintrieb GmbH in the successful application to the SHAPE programme and found relevant and reliable experts at TU Wien to help with the CFD simulation and the needed highly parallelised simulation software.

THE BENEFITS

Rheintrieb GmbH received funds through a successful application to the SHAPE programme, which enabled the company to gain access to a state of the art cluster to perform the necessary CFD computations. This shortened time to market dramatically and also reduced the need for otherwise customary test loops in open water basin tests. Reintrieb GmbH has already built a prototype of the SBS and is currently performing further tests on the physical model. "Without the help of EuroCC Austria and the SHAPE programme we would not have been able to optimise our side-by-side drive so detailed, quickly and cost-efficiently", says Dominik Cofalka, CEO of Reintrieb.