



Menatech Limited is an industrial Research & Development engineering consultancy supporting the development of emerging innovative technologies. Ideally based at the University of Chester Thornton Science Park - a major research and innovation hub, Menatech Limited provides a range of advanced R&D consultancy services at pivotal points in the development process, from the initial conceptual idea through to prototype demonstration and has specialist experience in the energy, environment and maritime industries.

www.menatech.co.uk



Menatech uses enCORE services for innovative technology development

Business Impact Summary

Challenge:

Menatech Limited's in-house and client technology development programmes frequently require the use of cutting edge simulation and analysis methods applied to complex and very large models. Menatech Limited needed a high speed and efficient solution with low cost and rapid turnaround.

Solution:

Menatech Limited conducted several benchmark trials of the enCORE service using the latest release of the OpenFOAM Computational Fluid Dynamics package running with 100's and 1000's of CPUs. They quickly confirmed the excellent performance of the cluster with significantly reduced costs.

Result:

Menatech Limited's trial of the enCORE service delivered high performance and was immediately extended to full commercial use. It allows Menatech Limited to address the significant challenges of efficiently solving big data numerical simulations and significantly enhances their competitive edge.

Innovative technology development demands high performance computing

Innovative technology development is extremely fast paced, risky and often highly expensive. As such, a successful engineering research and development programme employs a different mind-set to that used in typical engineering design and requires a combination of advanced cutting edge technology and highly specialised experts to produce results. Businesses providing these services also seek to develop a competitive edge by working more quickly and delivering projects to meet challenging budgets.

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They have recently worked on tidal and hydro turbine development, high capacity filtration systems, fluid structure interaction (FSI) analysis of solar towers and large scale preliminary simulations of the Chester Hydro project in collaboration with the University of Chester and Applied Computing & Engineering Limited who used FieldView from Intelligent Light for visualisation.

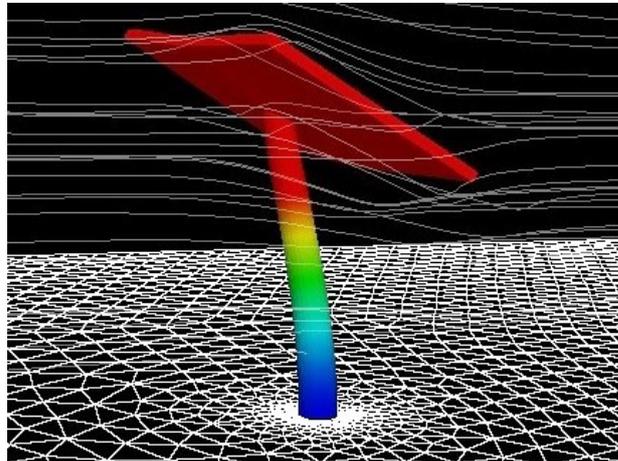


Figure 1: Fluid structure interaction of a solar tower

“The enCORE service is second to none. Access to this service has allowed Menatech Limited to compete at high speed and low cost and we are able to run simulation projects of massive size and scale in a fraction of the previous time”

Dr Jason Dale, Managing Director, Menatech Limited

Menatech Limited uses an advanced engineering software suite utilising tools such as OpenFOAM for analysing and predicting the performance of a range of products in several industries with simulations in the 10's of millions of elements. They approached OCF to discuss how the enCORE service could address their need to run these large scale big data simulations in the most optimal way. OCF installed the required OpenFOAM environment and advised Menatech Limited on cluster use. An in-depth trial of the service by Menatech Limited quickly confirmed the excellent performance with significantly reduced costs and was immediately extended to full scale use.

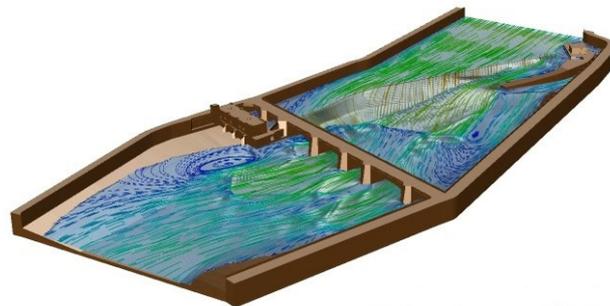


Figure 2: Large scale preliminary simulation of the Chester Hydro project



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With the help of OCF, Menatech Limited is now an established enCORE user, and the on-going use of the service underpins their engineering research and development simulation services, allowing them to deliver high quality design solutions to clients in a challenging and fast paced market.