

Quicker simulations = better competitiveness



Hartree Centre
Science & Technology Facilities Council



Access to the STFC Hartree Centre's on demand high performance computing (HPC) infrastructure service meant engineering consultancy QED Naval could run complex simulations four times faster than using in-house systems.

Challenge

Edinburgh-based QED Naval is an SME, which specialises in supporting design and deployment of 'green' electricity generation installations that harness wind, tidal and wave energy.

Sophisticated simulations are a key tool and typically have to be completed within challenging budget and time envelopes. As part of its Subhub project, aiming to cut the cost of deploying tidal turbines, QED Naval needed to carry out simulations using ANSYS FLUENT computational fluid dynamics (CFD) software. The company's own computing infrastructure, however, was unable to achieve runtimes that would meet the required timescales, whilst the capital investment required to establish in-house HPC systems was prohibitively high.

Solution

QED Naval decided to trial enCORE, the 'platform as a service' HPC offering delivered on behalf of the Hartree Centre by channel partner OCF. Utilising exactly the amount of central processing unit (CPU) core time required for the task, this trial resulted in simulation runtimes 4.2 times faster than those achievable in-house; furthermore, it produced a much wider range of outcomes. QED Naval had no previous HPC experience, so input and advice from OCF experts played a vital role in enabling the company to acquire the understanding essential to an efficient workflow. Following the successful trial, QED Naval opted to engage enCORE on a fully commercial basis.

Benefits

Thanks to the speed, efficiency and ability to secure results conveniently, enCORE's affordable HPC solution allows SMEs like QED Naval to compete with much larger rivals in the delivery of high quality technical solutions. enCORE has now become a key component of the engineering simulation services provided by the company and the ability to aid cost control – with users only paying for what they need, when they need it – is a vital benefit in an extremely challenging and fast developing market. Harnessing readily accessible, world class computing power means QED Naval is now in a stronger position than ever to defend and extend its market share.

"Engaging the enCORE service has allowed us to compete with enterprise-level capabilities by enabling us to increase the size of models we use and run projects more quickly and efficiently, without increasing our overheads. That all adds up to improved learn rates and better value for money for our clients."

– Jeremy Smith, Director, QED Naval Ltd

Work with us

We collaborate with industrial clients and research partners on projects that create insights and value using high performance computing, big data analytics, simulation and modelling.

By combining our world-class facilities with access to our specialists and computational scientists, we can enable your organisation to produce better outcomes, products and services more quickly and cost-effectively than through conventional R&D workflows.

With our partners we are developing the next generation of supercomputing architectures and software, combining existing best practice with innovation to deliver faster, cooler and more sustainable solutions capable of meeting the challenges of data intensive computing.

For more information:

- +44 (0)1925 603708
- hartreecomms@stfc.ac.uk
- @hartreecentre
- /company/stfc-hartree-centre