# Remote visualisation brings 'HPC for all' within reach
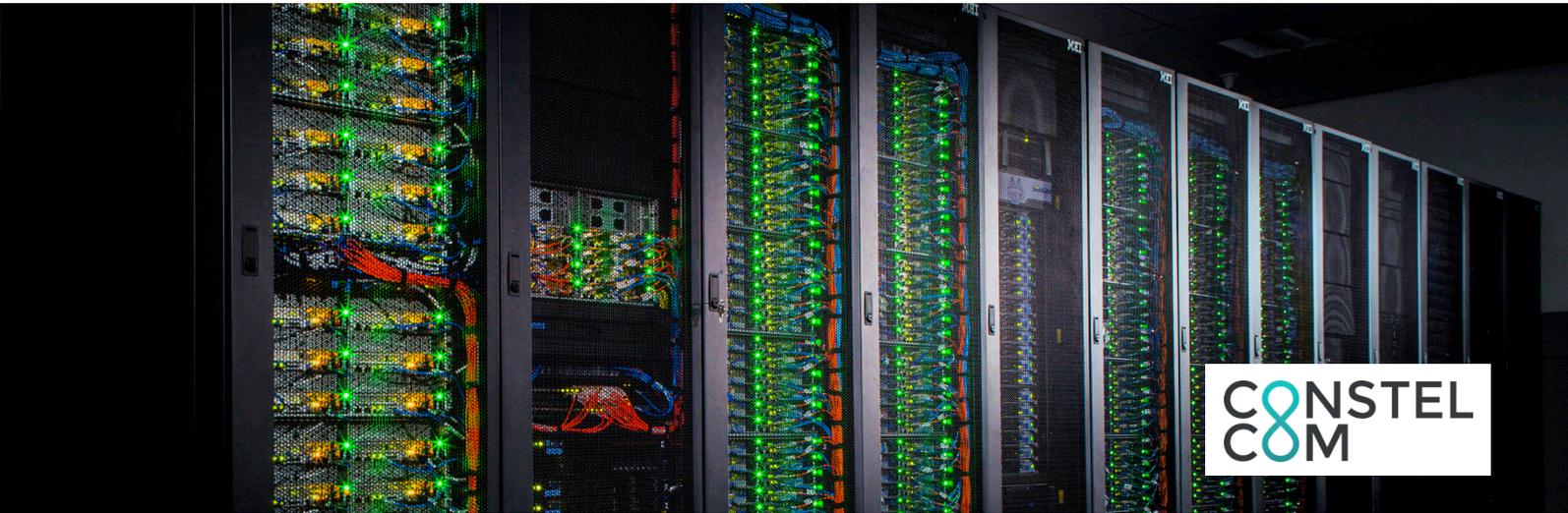


**Working with the Hartree Centre, Constelcom has proved the feasibility of a cost-cutting innovation that makes it more attractive and affordable for businesses to harness formerly elusive high performance computing (HPC) services.**

## Challenge

Utilising HPC to generate valuable insights from large, complex datasets is increasingly critical to business competitiveness. But just as vital as the analysis and interrogation of big data is the ability to see results in an easy to understand visual format. Exploring large datasets which have been remotely generated, however, may require heavy file transfers and memory-rich visualisation nodes costing several thousand pounds – a major barrier for many smaller companies in particular. With Innovate UK funding, Constelcom set out to explore the feasibility of a web-supported visualisation platform that would eliminate these requirements by enabling users of third-party HPC resources to visualise data in situ over commercially available internet connections, without the need for data export.

## Solution

As part of the project, Constelcom engaged with the Hartree Centre to help test in a real HPC setting the different possibilities identified, as the Hartree's leading edge hardware was ideal for developing and testing solutions capable of handling gigabytes of data. The Centre also offered a wealth of expertise and experience in software development/optimisation and state of the art data visualisation techniques. With Graphics Processing Unit (GPU) visualisation nodes playing a key role, the physical trialling of protocols and configurations led to the identification of solutions that met the requirements and provided potential for further development and inclusion in Constelcom's Constellation™ 'HPC as a service' offering.

## Benefits

For Constelcom, the key outcome was the ability to meet the technical challenge of remote data visualisation in situ. Moreover, working closely with the Hartree Centre has given the company the confidence that it can develop a solution which is commercially viable. Such ground-breaking remote visualisation capability could further enhance market adoption of Constellation™ and benefit Constelcom's customers by enabling them to speed up access to results while minimising local capital outlay – typically saving £5,000-6,000 in hardware costs.

> *"The Hartree Centre combines remarkable practical expertise alongside in-depth theoretical understanding, meaning that the outcomes it delivers have genuine real-world potential and direct commercial relevance."*
>
> **– Dr Nicolas Tonello, Director, Constelcom**

## 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

in /company/stfc-hartree-centre

# www.stfc.ac.uk/hartree