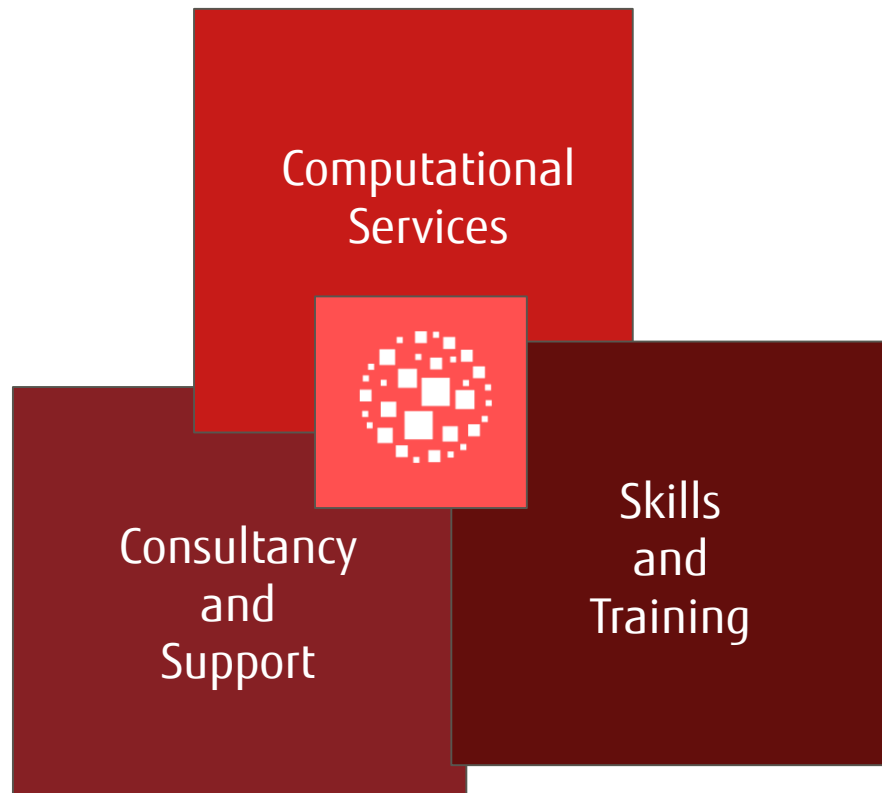


High Performance Computing (HPC) Wales

Supercomputing for SMEs and Academics

■ Simple and Remote access to:

- High Performance Computing technology
- Scientific and commercial consultancy
- Application and optimisation training and support



On-demand Processing Power

Ready to use parallel
computational
processor power

On demand from
small scale to large
scale using own
applications

1

Rendering

Creation of high
definition images
using masses of
computational
capability

Faster time to market,
higher resolutions,
increased creativity

2

Computer Associated Engineering as a Service

Simulation
modelling for
design,
development and
prototyping

Reduced cost of
entry, ROI proof
point, scale on
demand

3

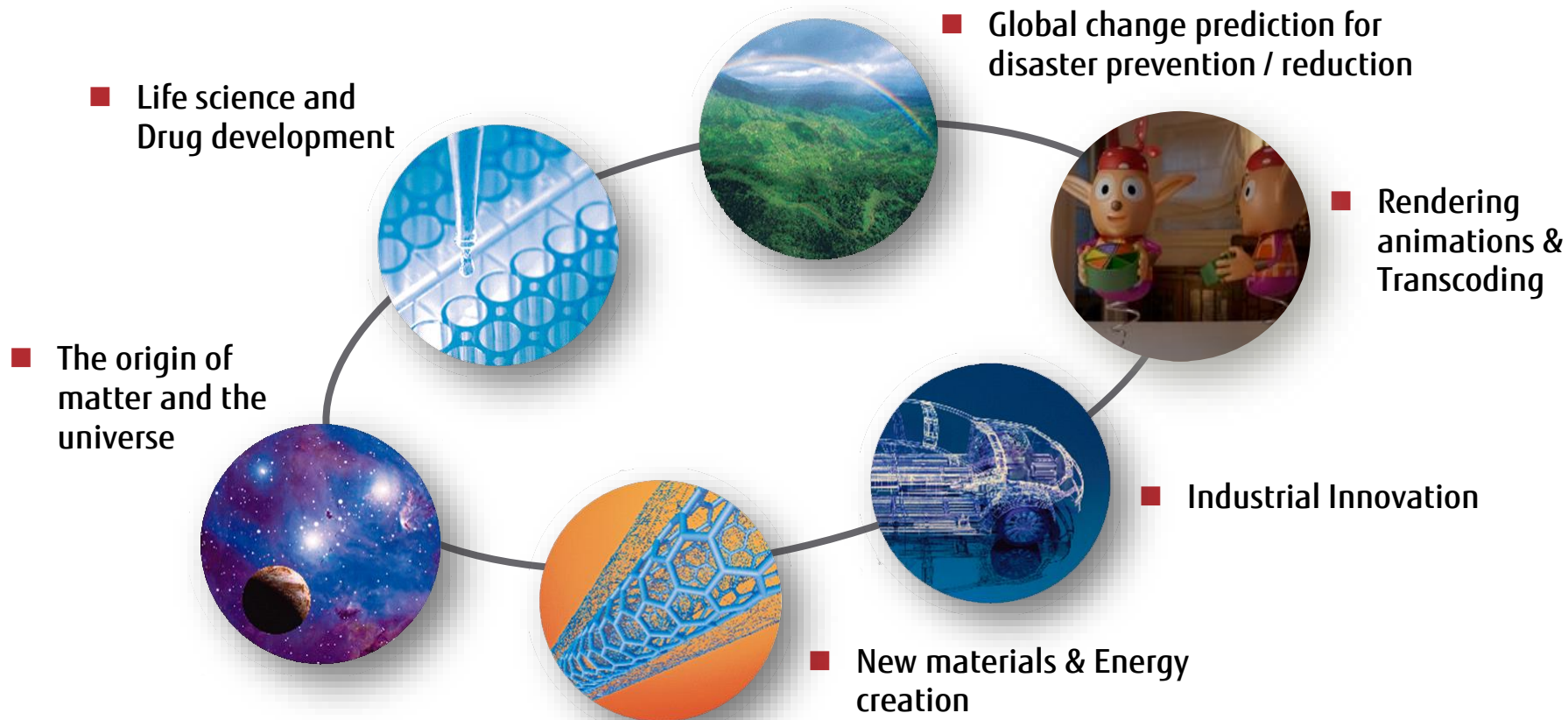
Training Services

Skills training and
education to
understand and
apply HPC
technologies

Developing skills
that match
industry demand

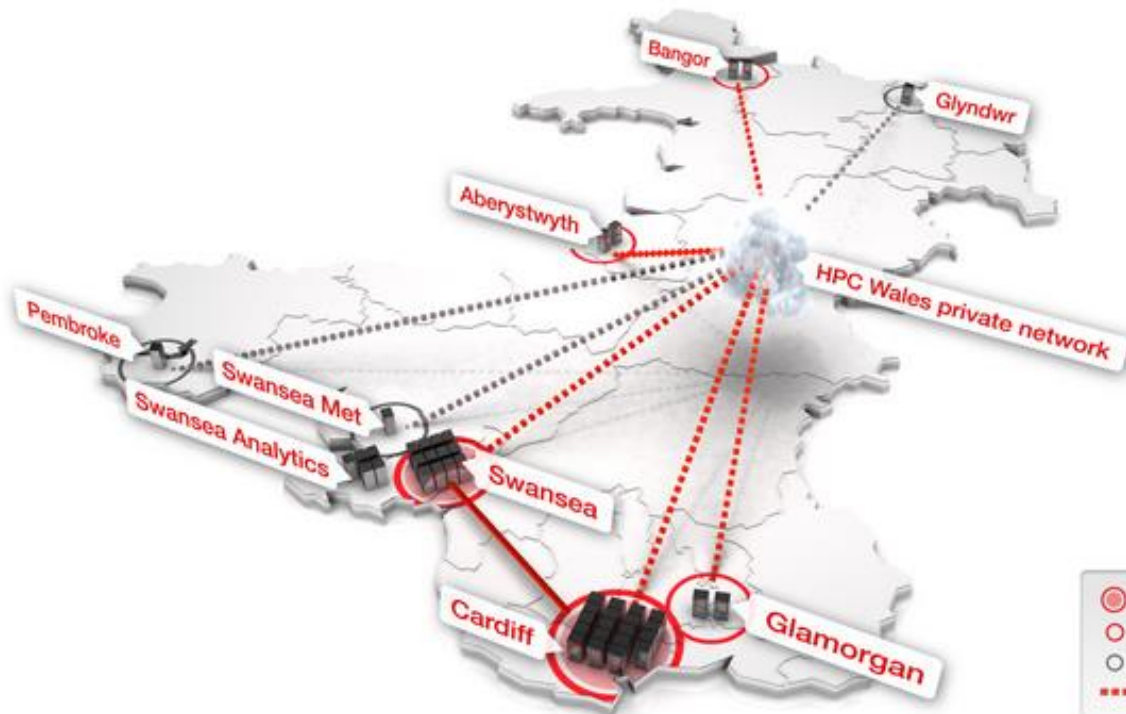
4

Where Is HPC Being Applied?



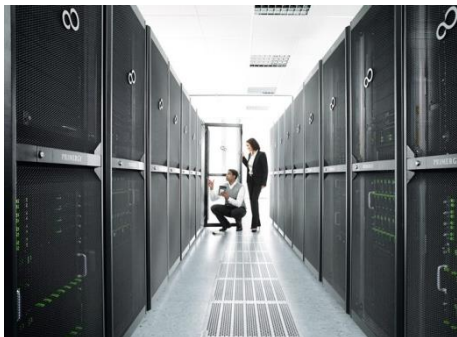
The UK's Largest Distributed Supercomputing Network

- Simple remote access from anywhere in the world (with an internet connection!)
- Rapid processing capabilities with a network of 17,000 Cores linked together with high speed interconnects

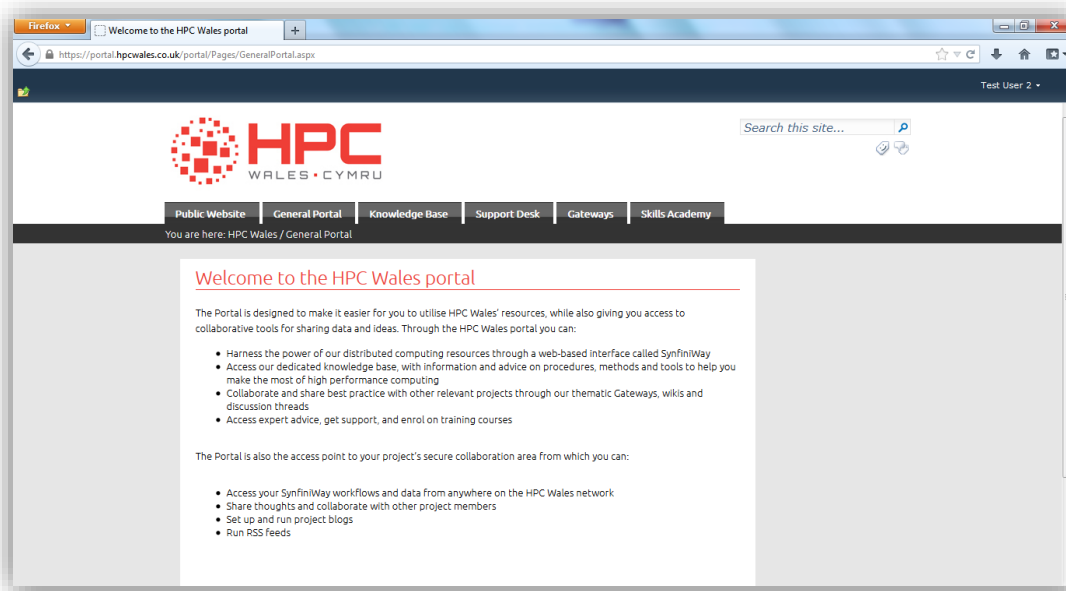


■ Technology, Consultancy and Training

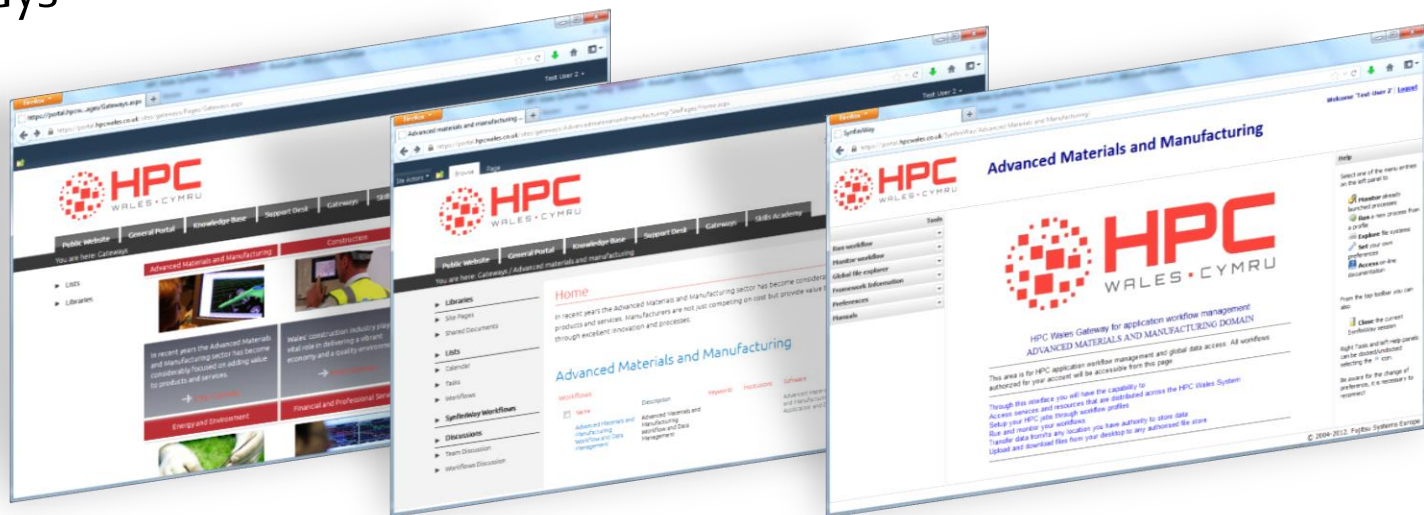
- Fujitsu has supplied and installed HPC Wales' supercomputing infrastructure
- Fujitsu provide on-site and remote assistance in the on-boarding process
- Fujitsu manage and support a help desk for users of the HPC Wales system
- As part of HPC Wales phase 2, Fujitsu are looking to offer benchmarking support, 'code tuning' and remote & on-site training



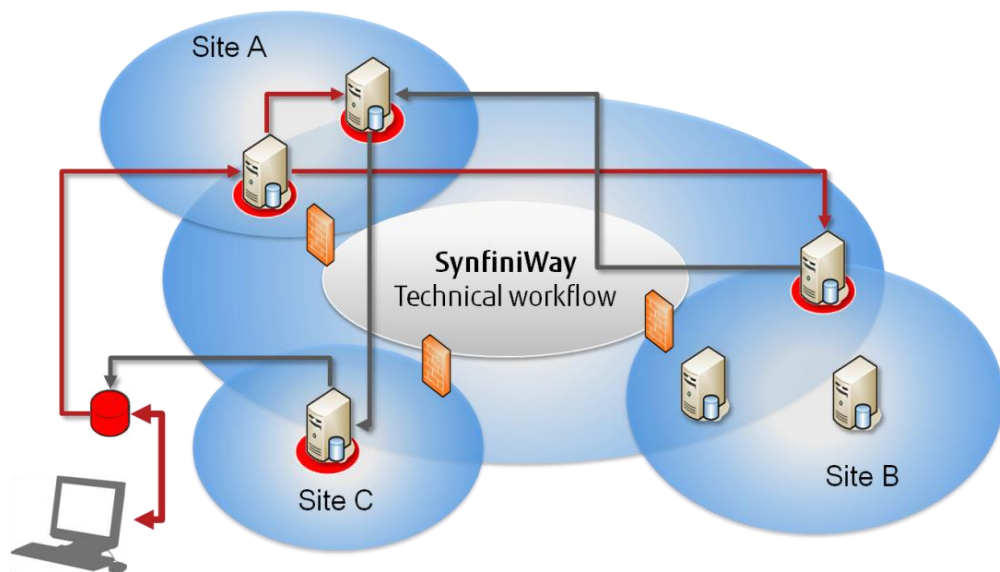
- Simplified HPC access through web-based gateways
 - Point and click interface, no prior knowledge required



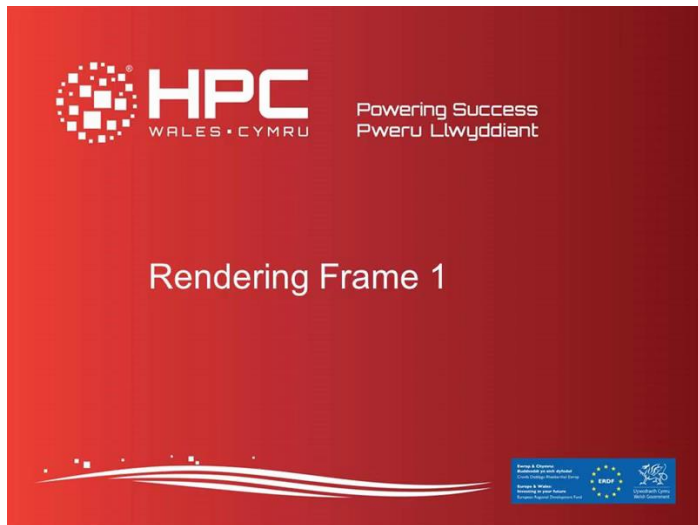
- Accelerate processing; Automated and optimised workflows
- Access an ever increasing range of software
- Access thematic online knowledge base and discussion forums via intuitive gateways



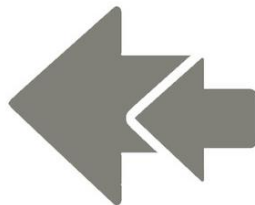
- HPC Wales' system runs a Fujitsu SynfiniWay workflow, an active and intelligent system moving and balancing workload to optimise the performance resulting in reduced time and cost and increased efficiency and reliability of results



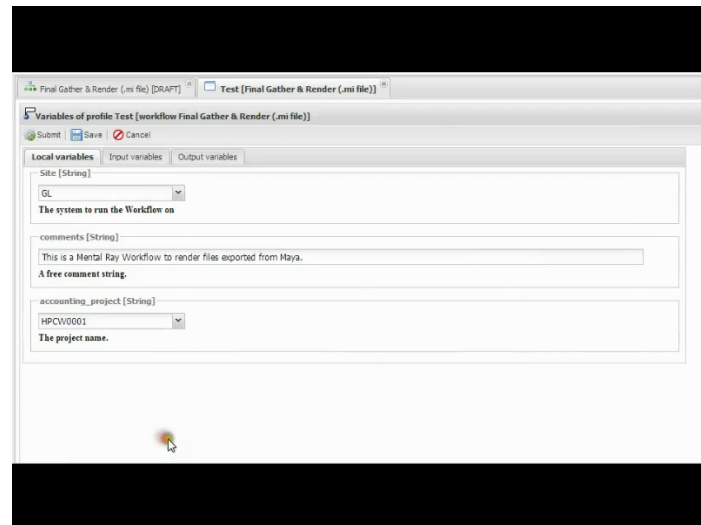
Desktop Render (Maya 2014)



Rendering
100x faster



HPC Render (MR Standalone)



In the above example the desktop computer renders a few frames of the 125 frame animation in the same time it takes the HPC system to render the entire animation (125 frames). The HPC Wales system also encodes the frames into a movie.

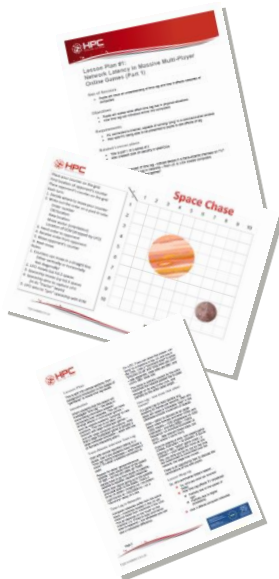


Schools



Y Pant Comprehensive School
Image credit: Lucy Bunce

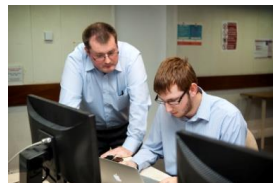
Further Ed.



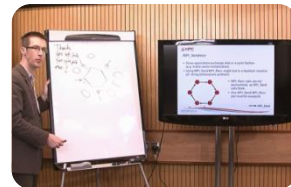
Higher Ed.



Swansea University Lab Class
Image credit: Prof. John Tucker



Research & Business



Partnership Benefits Koenigsegg

- “Koenigsegg has embarked on an ambitious challenge to develop a **market-leading hyper car in just six months** with a small advanced-engineering team”



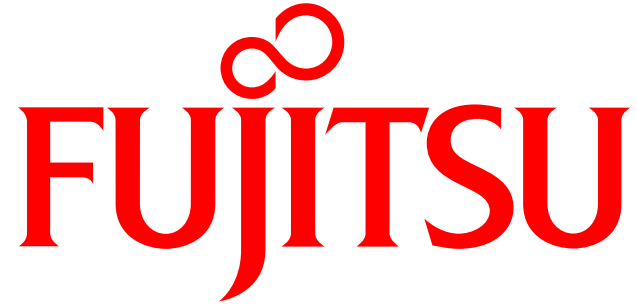
- To achieve this ambitious goal, Koenigsegg have partnered with HPC Wales, ICON and Fujitsu
- The partnership worked to resolve unique and specific problems and outcompete larger competition

- Fujitsu, in collaboration with HPC Wales have provided 20 Funded PHD Studentships across a variety of sectors within Welsh Universities including Environment, Physics, Manufacturing, Life Sciences and creative industries



"On a desktop PC, just one of the ice simulations would take a year to run, whereas on HPC Wales' systems I can carry out several hundred of them."

Sophie Wilmes, School of Ocean Sciences, Bangor University



shaping tomorrow with you