

# Collaborative Orthopaedics Research Environment

## The CORE approach to Virtual Research Environment

### What is CORE?

CORE is a Virtual Research Environment (VRE) which is designed based on the concept of Service-Oriented Architecture (SOA) and Grid/Web services. It aims to provide an infrastructure that combines clinical, educational and research in one working environment.

### Why do we need a VRE?

Firstly, as the number of biomedical investigators increases, it becomes difficult to track their work. Secondly, bio-informatics tools rarely interoperate. Finally, there is a need for collaborative researches to overcome expensive cost.

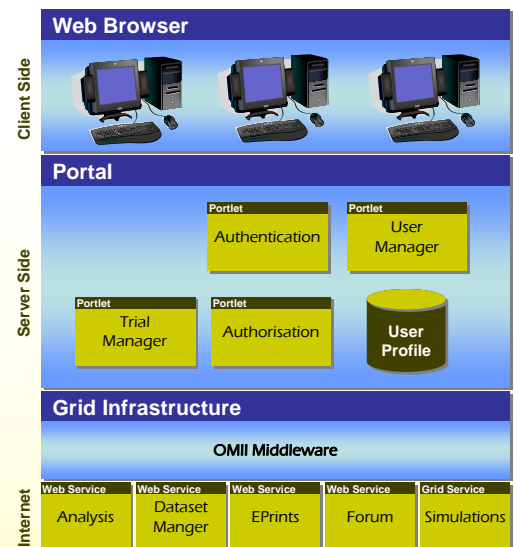
### What are the user requirements?

VRE toolkits should be made easy to use for those who may not be computer literate. There are also requirements for contextualising resources within a research framework that is relevant to the subject discipline, running simulations with large scale data and secure access to resources.

### What is the main benefit?

The loosely coupled architecture allows services to be easily added or removed when user requirements change.

### The CORE architecture



A portal is used as a presentation layer which aggregates, integrates, personalises and presents information, transactions and applications to user. Grid/Web services will be used as the underlying implementation technologies.

### Future work

Building a CORE VRE demonstrator and investigating the use of semantic Grid/Web services in the VRE.