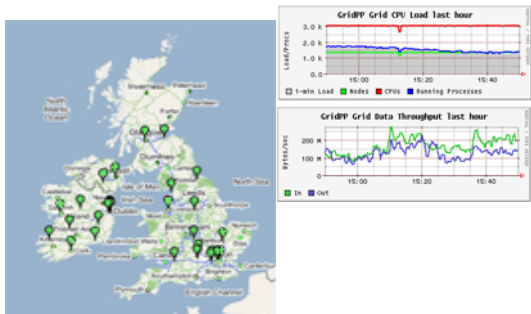


# What Is GridPP?

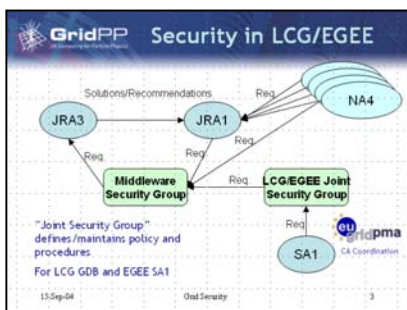
Data from CERN's Large Hadron Collider will be analysed by more than 100,000 PCs in 100 institutions. GridPP is the UK's contribution. It is a six year project, and it is part of the Particle Physics and Astronomy Research Council's e-Science Programme.

GridPP has built a fully functional grid, with more than 3,000 computers across 17 UK institutions. This allows scientists to access data and processing power seamlessly, wherever they are. Over the next three years, this will be extended to the equivalent of 10,000 CPUs.

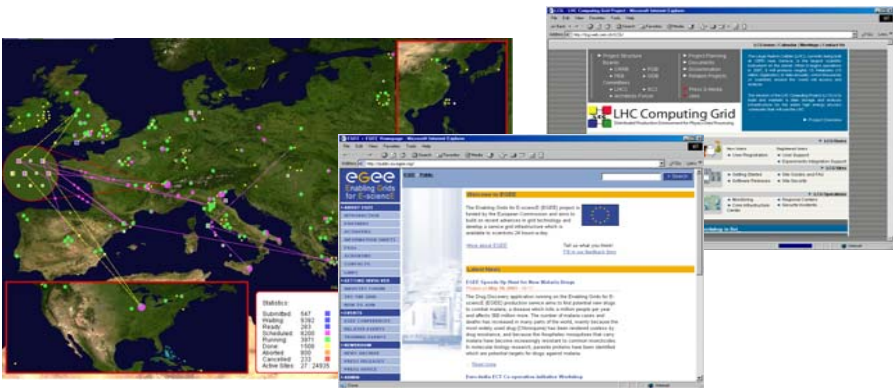


## Middleware:

Middleware is the key to a successful Grid. Middleware allows the software being used by the scientists to talk to the Grid's hardware, distributing computing jobs efficiently around the network. It also deals with issues such as security, ensuring that only authorised users can access the Grid. GridPP has written over 3,000 lines of Middleware code.

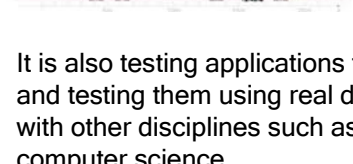
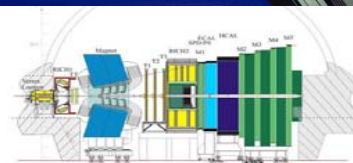
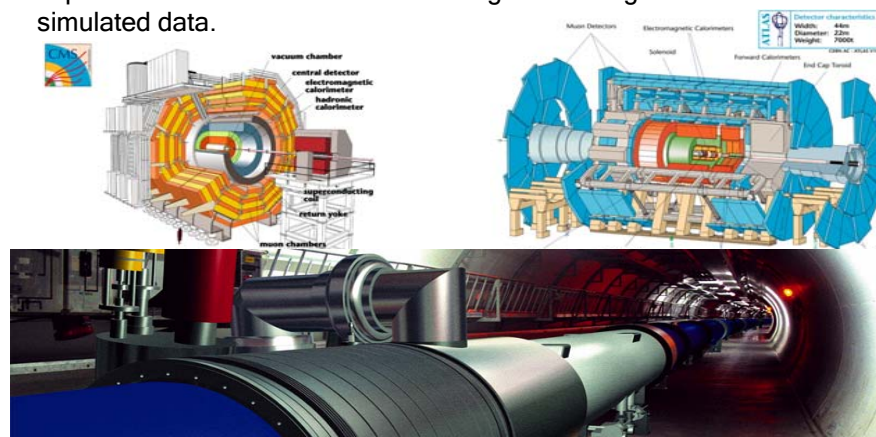


GridPP is part of **international projects** such as Enabling Grids for e-Science and the Global Grid



# Applications for the Grid

GridPP is developing applications to allow the four future LHC experiments to use the Grid. It is testing them using Monte Carlo simulated data.

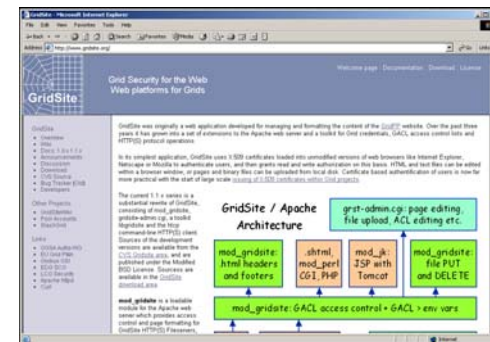


It is also testing applications for US experiments and testing them using real data, and working with other disciplines such as bio-informatics and computer science.



## GridSite

GridPP has developed the open source GridSite tool ([www.gridsite.org](http://www.gridsite.org)). This lets grid users to identify themselves to websites using their personal e-science certificate, rather than needing to remember lots of passwords. Users can then edit and upload webpages and images. GridSite is available for any website to use.



# Members of the GridPP collaboration



Resources:  
[www.gridpp.ac.uk](http://www.gridpp.ac.uk)

[www.cern.ch](http://www.cern.ch)

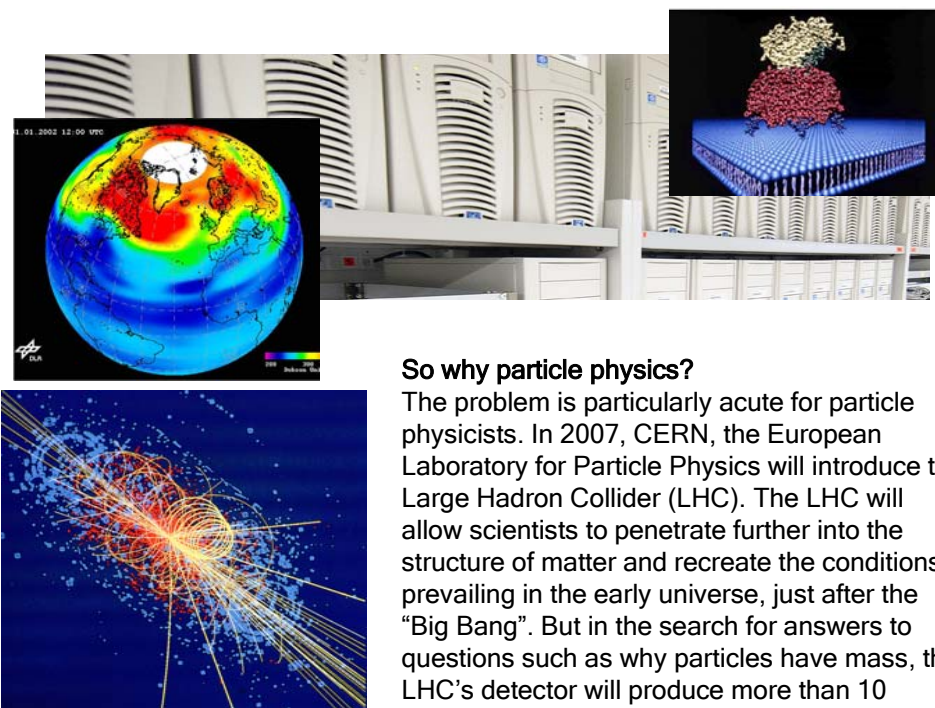
[www.eu-egee.org](http://www.eu-egee.org)



GridPP is a collaboration of 20 UK universities, research centres and CERN. It is building a UK computing grid for particle physics

## What is the Grid?

Experiments everywhere, from biology to earth observation, are producing billions of bytes of data every day. Dealing with such huge amounts of data needs a new type of computing. It's not possible for one single institution to store and analyse all this data, so scientists have to share computer storage and processing power around the world at hundreds of different locations. This is called Grid computing



## So why particle physics?

The problem is particularly acute for particle physicists. In 2007, CERN, the European Laboratory for Particle Physics will introduce the Large Hadron Collider (LHC). The LHC will allow scientists to penetrate further into the structure of matter and recreate the conditions prevailing in the early universe, just after the "Big Bang". But in the search for answers to questions such as why particles have mass, the LHC's detector will produce more than 10 Petabytes (10 Million Billion Bytes) of data each year - equivalent to a stack of CDs twice the height of Mount Everest.