



# The Grid Beyond Physics

Bob Jones, CERN

EGEE project director



LHC Grid Fest

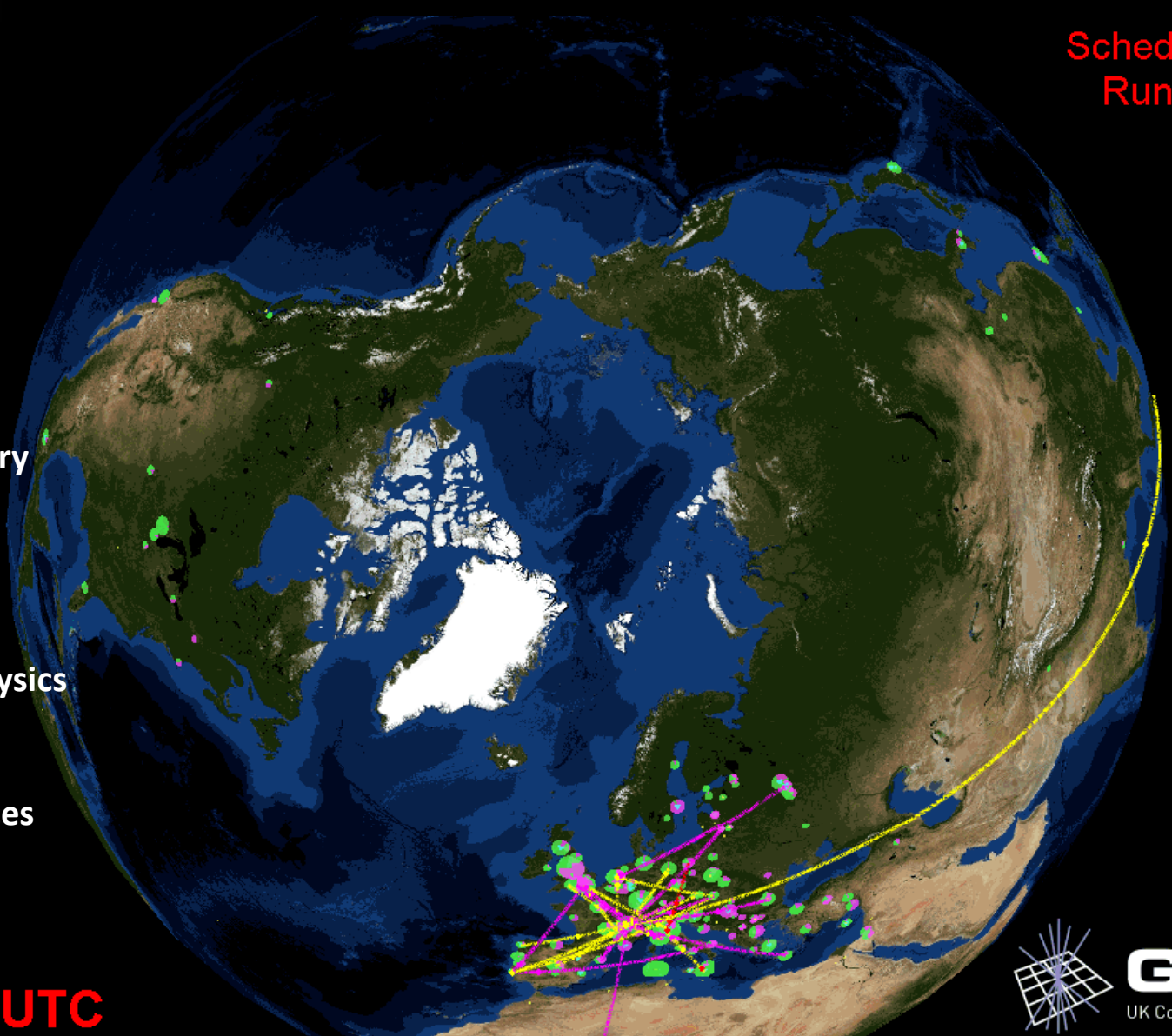
EGEE

Enabling Grids  
for E-science

Scheduled = 21539  
Running = 25374

- Archeology
- Astronomy
- Astrophysics
- Civil Protection
- Comp. Chemistry
- Earth Sciences
- Finance
- Fusion
- Geophysics
- High Energy Physics
- Life Sciences
- Multimedia
- Material Sciences
- ...

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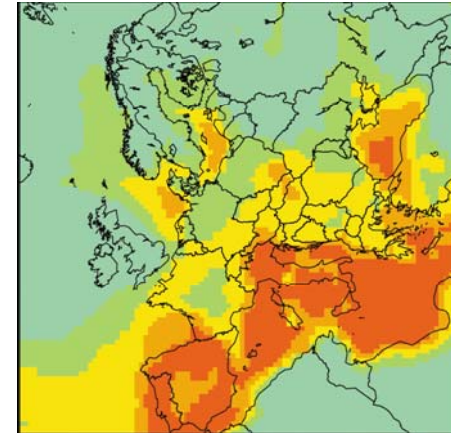


GridPP

UK Computing for Particle Physics

# Earth Sciences

- Seismology
- Atmospheric modeling
- Meteorology
- Flood forecasting
- Pollution
- ...



**EGEODE** the “Expanding GEosciences On-DEmand” Open Virtual Organization provides a suite of Grid computing services designed to meet the needs of Oil & Gas research

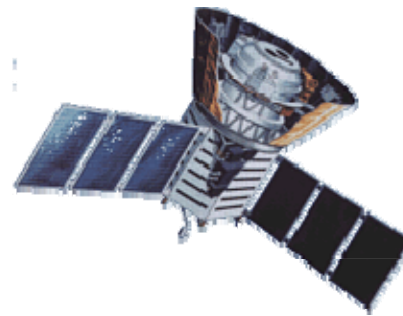


**FOOTPRINT (EU project):** identify the dominant pathways and sources of pesticide contamination in the agricultural landscape.

# Astronomy & Astrophysics

LOFAR large distributed radio telescope

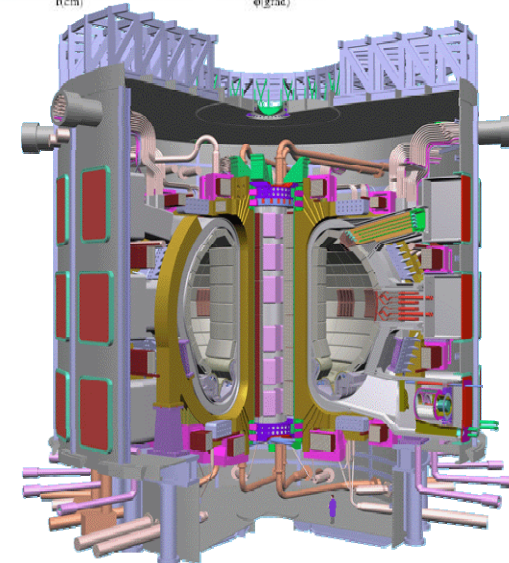
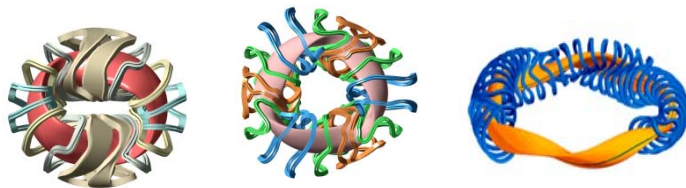
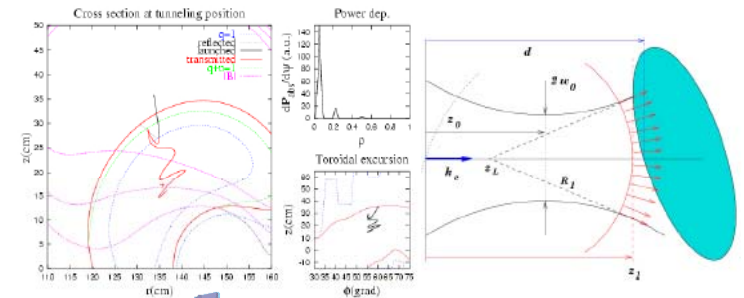
AUGER & ARGO Cosmic Ray Observatories



# Fusion

Commercial exploitation of fusion energy still needs to solve several outstanding problems requiring exceptional computing facilities including supercomputers and cluster-based grids

- Ion Kinetic Transport
- Massive Ray Tracing
- Stellarator Optimization





# In silico drug discovery

- Diseases such as HIV/AIDS, SRAS, Bird Flu, Malaria etc. are a threat to public health due to world wide exchanges and circulation of persons
- Grids open new perspectives to *in silico* drug discovery
  - Reduced cost and adding an accelerating factor in the search for new drugs

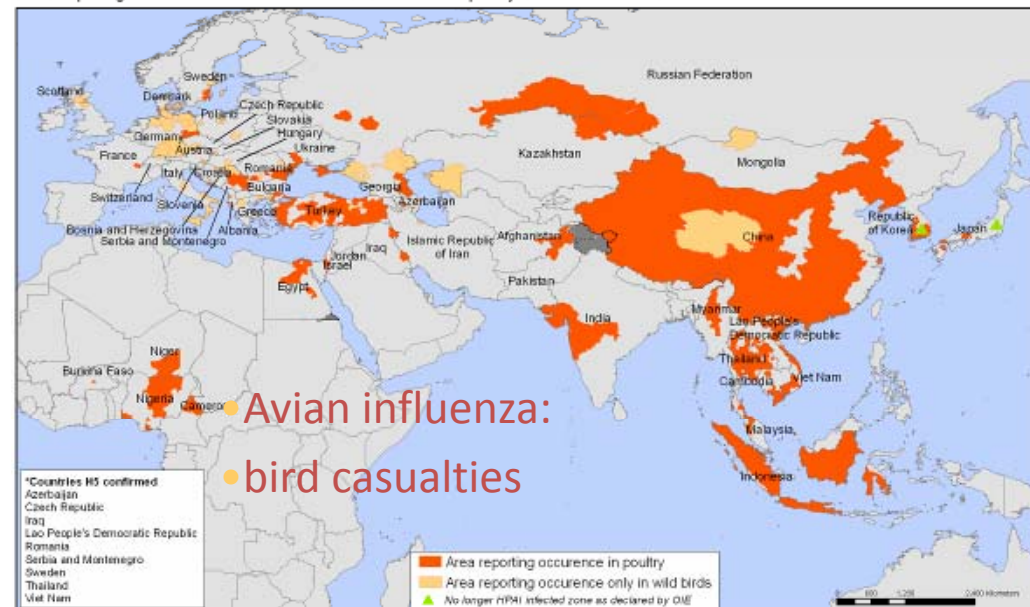
International collaboration is required for:

- Early detection
- Epidemiological watch
- Prevention
- Search for new drugs
- Search for vaccines



Areas reporting confirmed occurrence of H5N1\* avian influenza in poultry and wild birds since 2003

Status as of 07 April 2005



# Collaborating e-Infrastructures



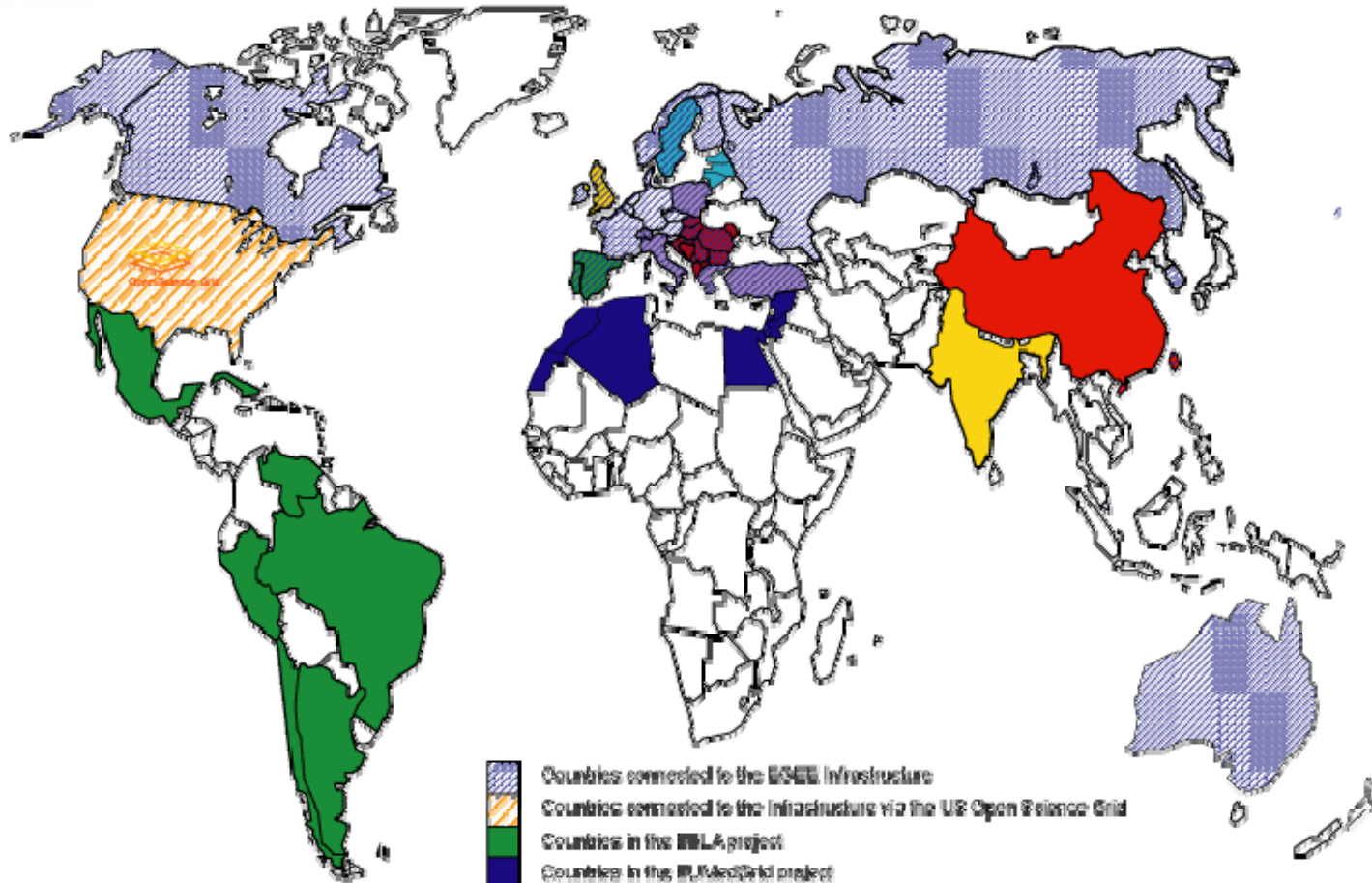
LHC Grid Fest



Open Science Grid



FeraGrid



-  Countries connected to the EGEE infrastructure
-  Countries connected to the infrastructure via the US Open Science Grid
-  Countries in the EELA project
-  Countries in the EUMedGrid project
-  Countries in the EulGrid project
-  Countries in the EUS-GRID project
-  Countries in the EUMindGrid project
-  Countries in the EUMChinaGrid project
-  Countries in several regional projects





# European Grid Initiative

## **Goal:**

- Long-term sustainability of grid infrastructures in Europe

## **Approach:**

- Establishment of a new federated model bringing together National Grid Initiatives to build the EGI Organisation

## **EGI Organisation:**

- Coordination and operation of a common multi-national, multi-disciplinary Grid infrastructure
  - To enable and support international Grid-based collaboration
  - To provide support and added value to NGIs
  - To liaise with corresponding infrastructures outside Europe