

The 3rd International Summer School on Grid Computing

Final Exercise

Group 9

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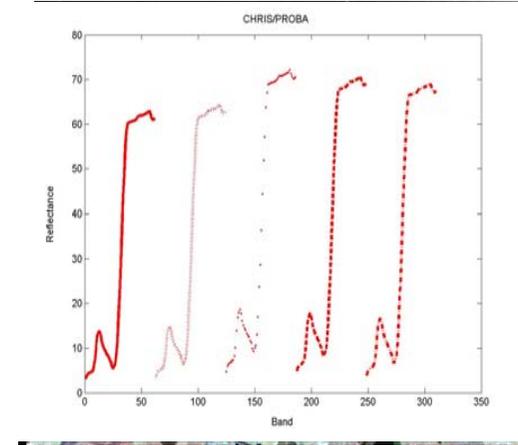
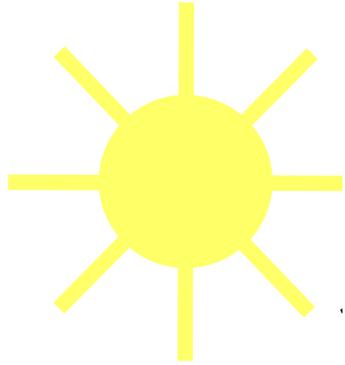
Luigi Dini

Oisín Curran

Eleana Asimakopoulou

Vico Equense 22 July 2005

Earth Observation

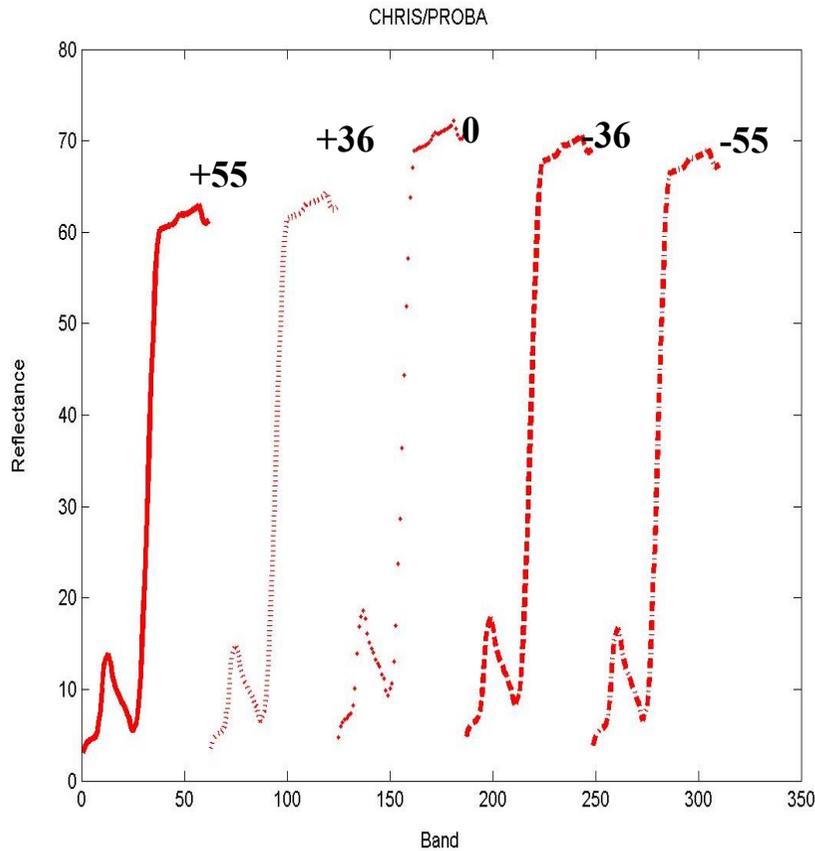


$$y = f(x_1, x_2, x_3, \dots, x_{11})$$

Parameters estimation

Inversion Algorithm-2C

- LUT (look-up table) using RRMSE (relative mean square error)



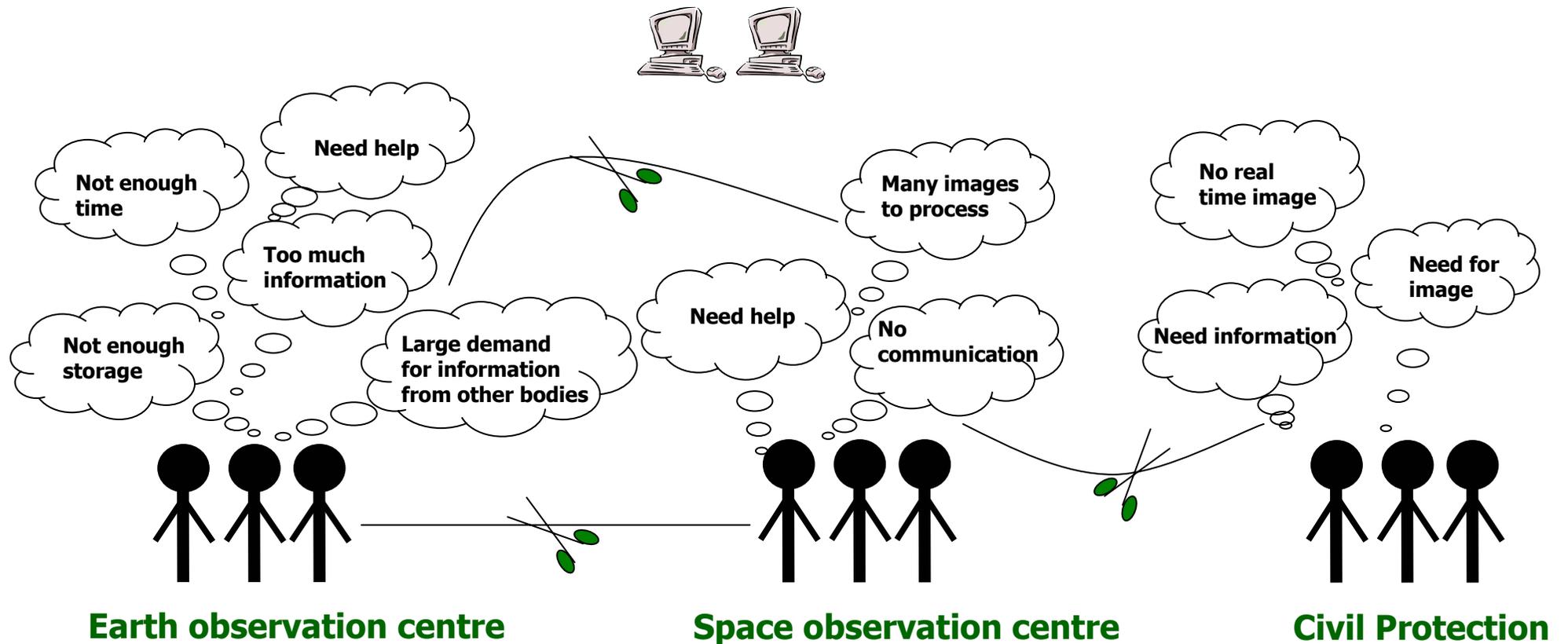
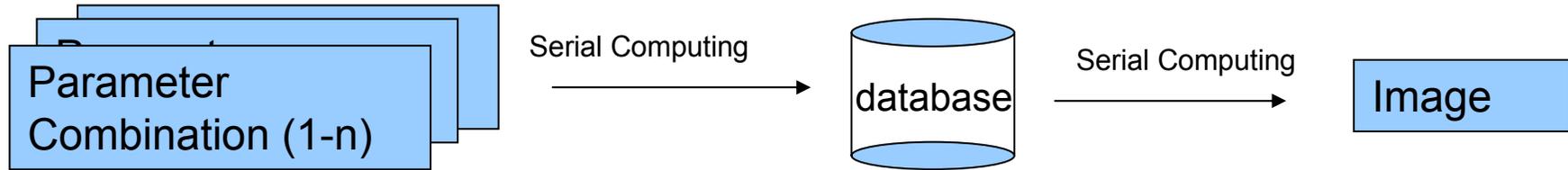
$$RRMSE = \sqrt{\frac{\sum_{j=1}^5 \sum_{i=1}^{62} [\rho_{meas}(j,i) - \rho_{est}(j,i)]^2}{\sum_{j=1}^5 \sum_{i=1}^{62} [\rho_{meas}(j,i)]^2}}$$

(Privette, 1994)

Vegetation
Parameters
Estimate

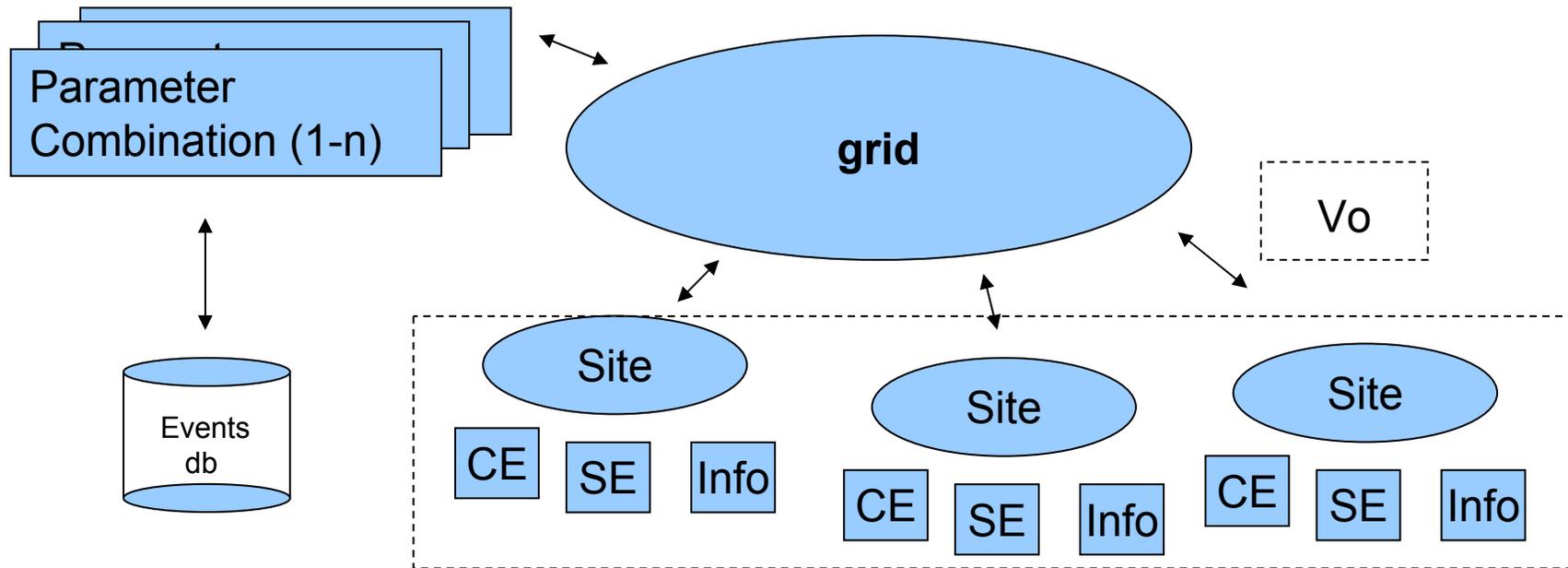
The Current Approach

Abstraction of the problem:



The Proposed Solution

How to use grid to solve our problem:



- Not necessary to define a Web-Service architecture since other technologies provide all our needs
- Condor – meant just for computing. No solution for Storage
- Ogsa-dai – Our atomic instance is a file. Too much overhead. Relational DBMS not needed
- Globus would be also useful but we need more functionality

gLite

What g-lite is providing us:

Job management Services

Workload Management
Computing Element
Logging and Bookkeeping

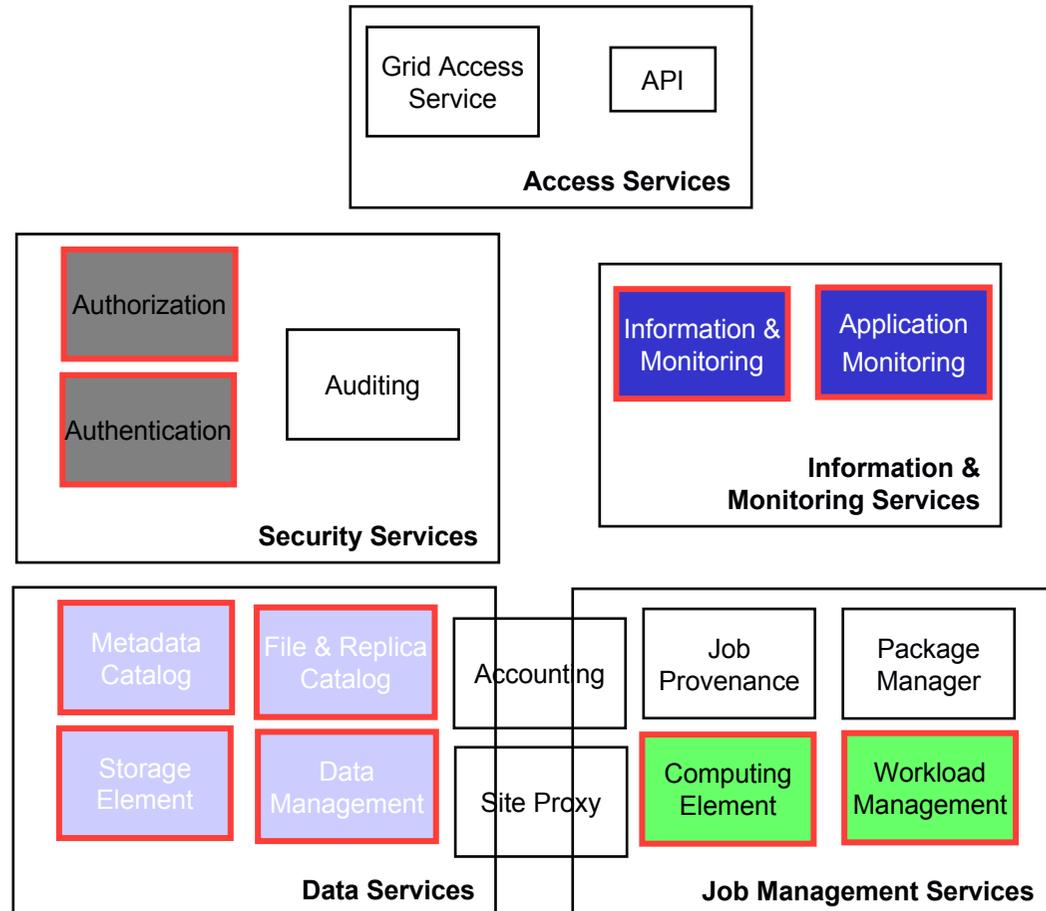
Data management Services

File and Replica catalog
File Transfer and
Placement Services
gLite I/O

Information Services

R-GMA
Service Discovery

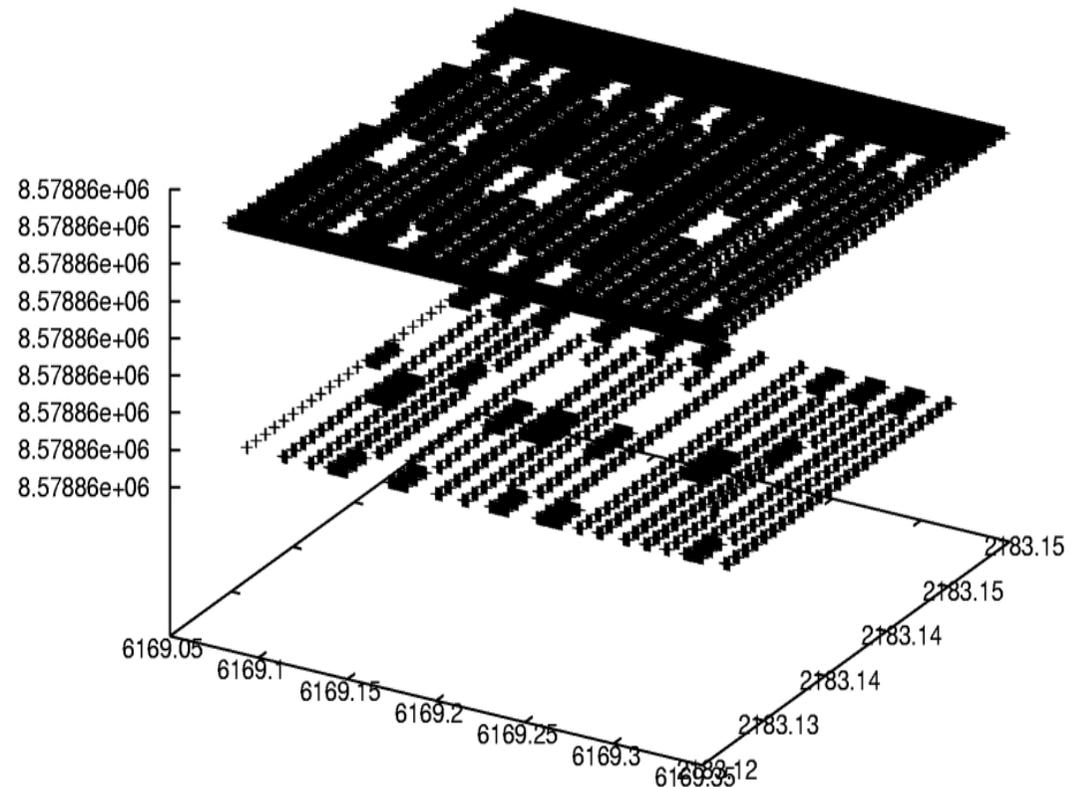
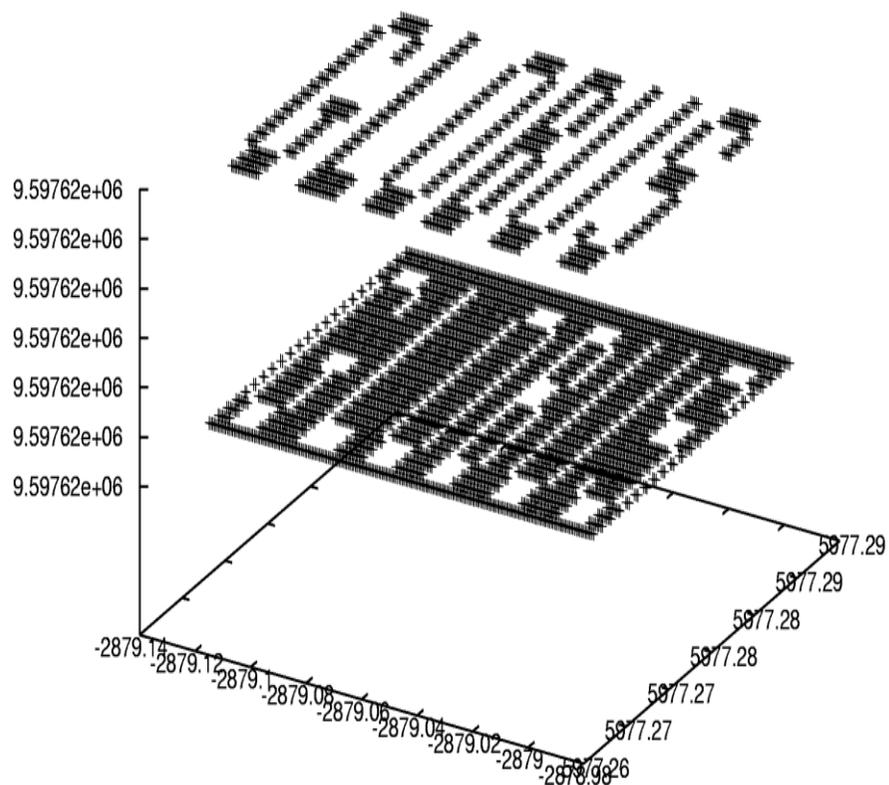
Security



The Progressive Exercise

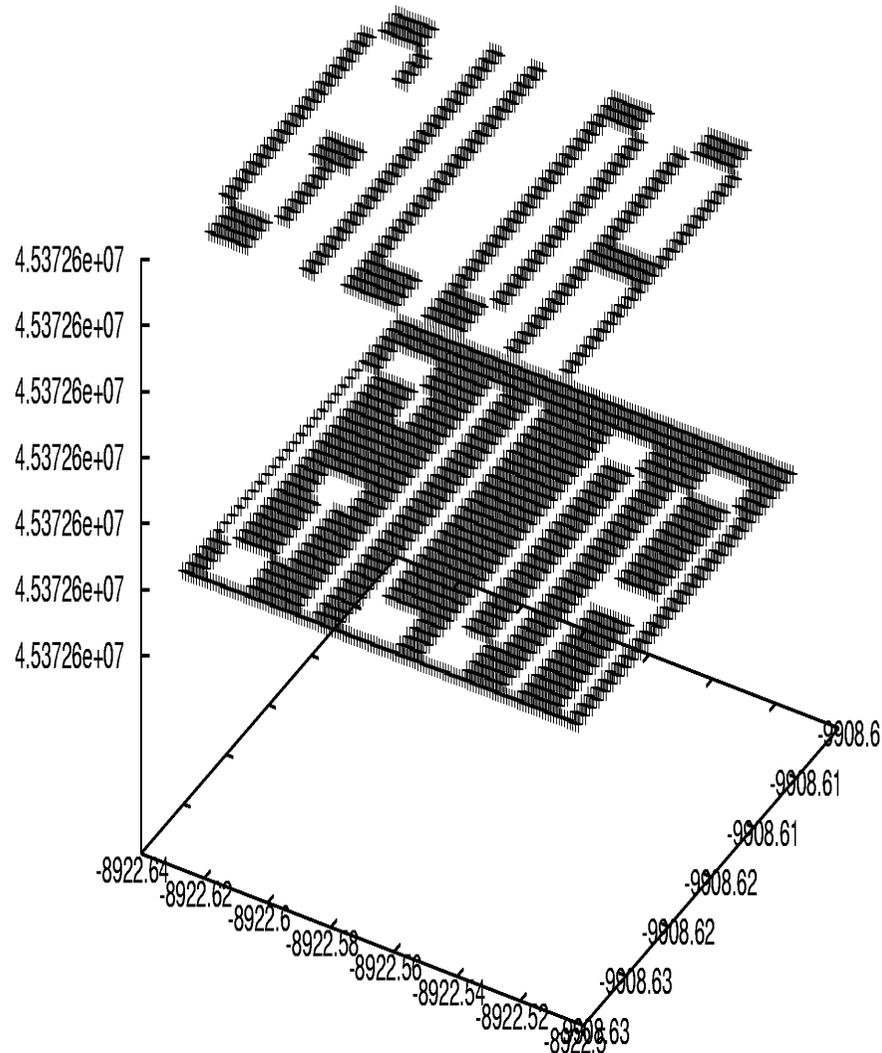
“Search for Knowledge”

- Three pillars found (Gilda, Globus & Fab Gagliardi)
- Based on the provided started points
- Reading off co-ordinates from output EPS files
- Adjusting arguments to the program to produce next EPS file



The Progressive Exercise

Progress of discovery and... if



regaining the task:

- Rewrite Scanner client - it was not producing results even when used at points where there was a pillar
- Automate using Scanner's program output as Regular program's input:
 - less time at the command line
 - simply starting the process running and coming back later to review a bunch of graphs in the EPS files
- Investigate using UNICORE to look at the surface
- Try the surface provided by the UNICORE system. Especially since it was not limited to 20 results per query

Team Contribution

- **Project coordinator**
 - Eleana Asimakopoulou
- **gLite experts**
 - Daniel Tiggemann, Carlos Borrego
- **Master of Pillars!**
 - Shiv Kaushal
- **Description of “real-world” reseach problem**
 - Luigi Dini
- **This’n’t that**
 - Oisín Curran

Feedback on the School

- We missed more security talks!
- Practical exercise was a bit chaotic!
- Talks get too much into the detail and less general information
- Good social networking!
- Good logistical organisation (...excellent food!)

Grazie!