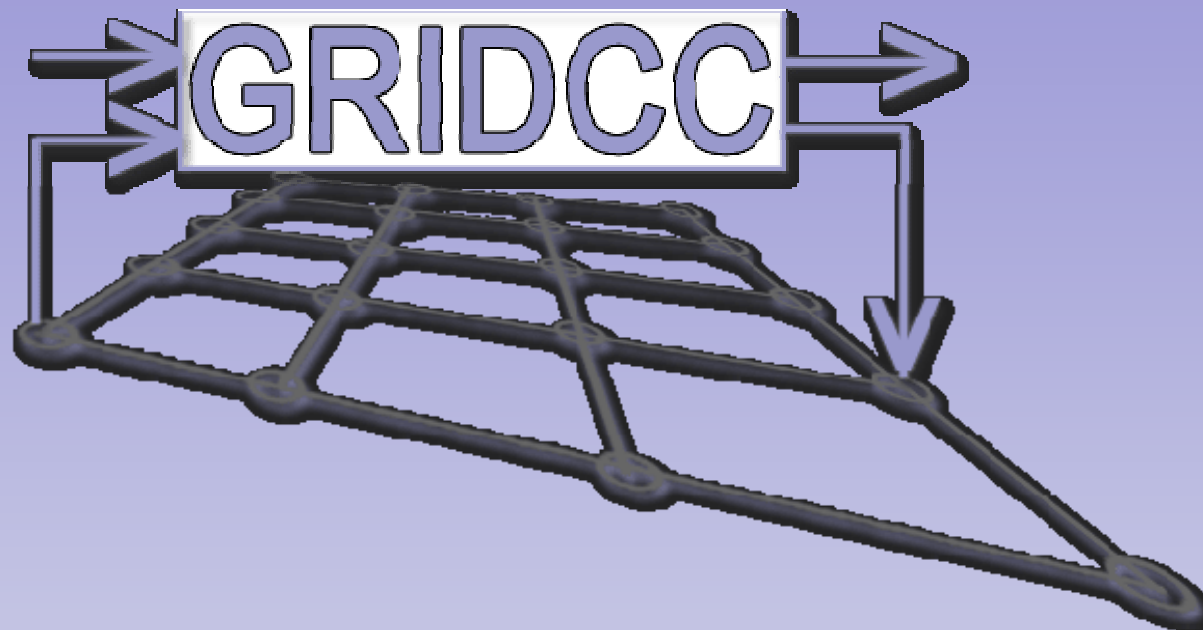


# The GRIDCC project



Luke Dickens  
Imperial College / LeSC  
On behalf of the GRIDCC collaboration



# GRIDCC overview



- It is a 3 years project. Started the 1st September 04
- Funded by EU in the 6<sup>th</sup> Framework Programme
- 10 Partners from 3 EU Countries + Israel
- About 40 people engaged
- [www.gridcc.org](http://www.gridcc.org)

Participant name	Country
Istituto Nazionale di Fisica Nucleare	Italy
Institute Of Accelerating Systems and Applications	Greece
Brunel University	UK
Consorzio Interuniversitario per Telecomunicazioni	Italy
Sincrotrone Trieste S.C.P.A	Italy
IBM (Haifa Research Lab)	Israel
Imperial College of Science, Technology & Medicine	UK
Istituto di Metodologie per l'Analisi ambientale – Consiglio Nazionale delle Ricerche	Italy
Universita degli Studi di Udine	Italy
Greek Research and Technology Network S.A.	Greece



# Project Aims



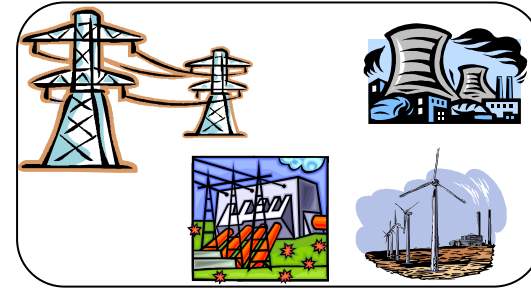
- To access and control scientific instrumentation on the Grid
  - *Secure Grid interface to instrumentation*
  - *Online collaborative Grid portal*
  - *Workflow support*
  - *Leverage existing Grid framework and infrastructure*



# Applications



CMS detector - CERN



Power Grid - Brunel

Intrusion Detection System – NTUA/IASA



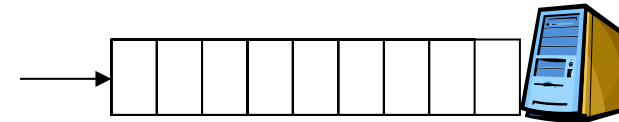
Far remote control of  
accelerator - Elettra



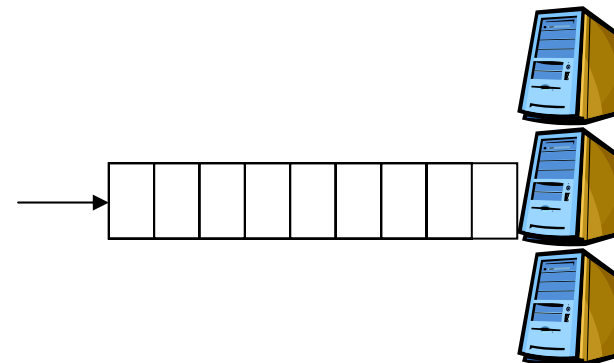
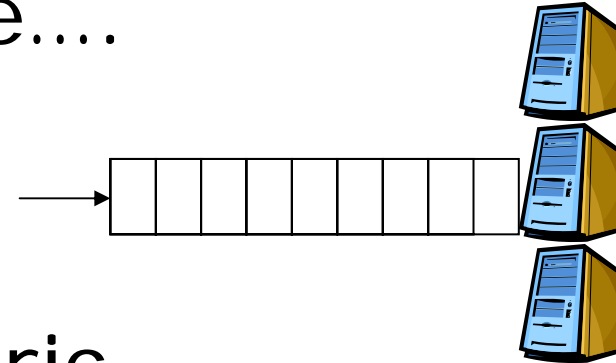
# Current State of the Grid



Mostly Batch Systems  
Condor, Globus, gLite....

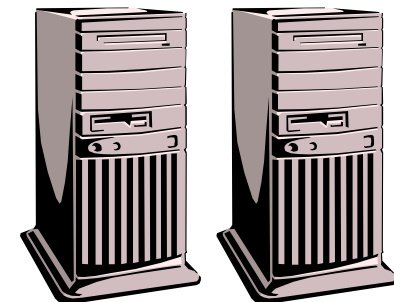
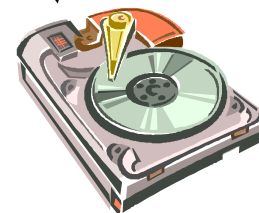
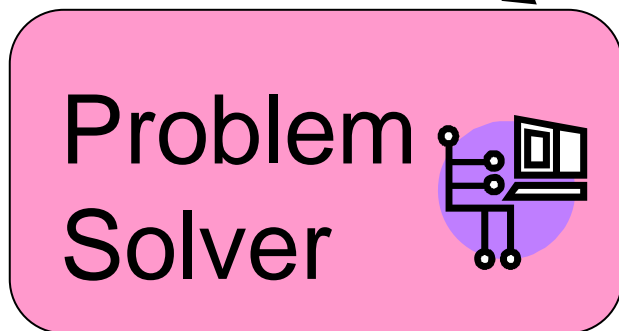
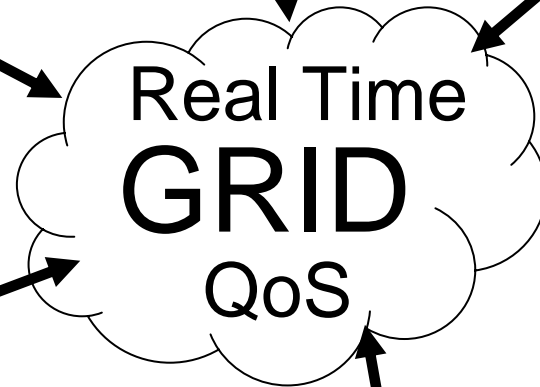
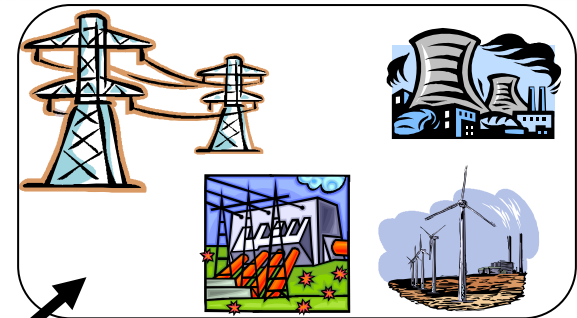


Computation Job Centric  
Running Binary code





# Beyond Batch Submission





# Common Basis



- GRIDCC and gLite both support the following
  - *Web-Service technology*
  - *Basic SLA infrastructure*
  - *X.509 security model (GRIDCC adds Kerberos for strictly time bounded interactions)*



# gLite components of interest



- AS
- CE (with CREAM)
- WMS (with WMSProxy)
- SE (with SRM)
- LB (with LBProxy)
- Other information services



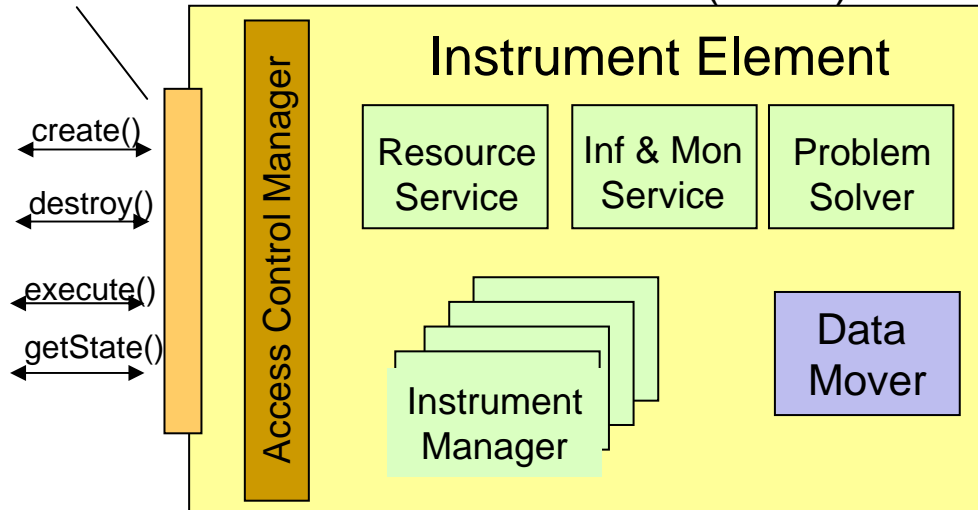


# Central GRIDCC components

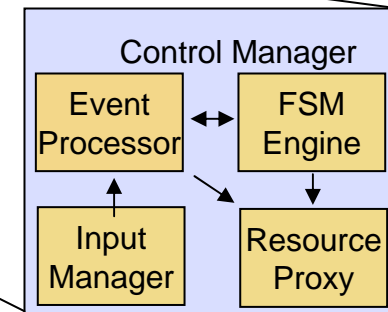
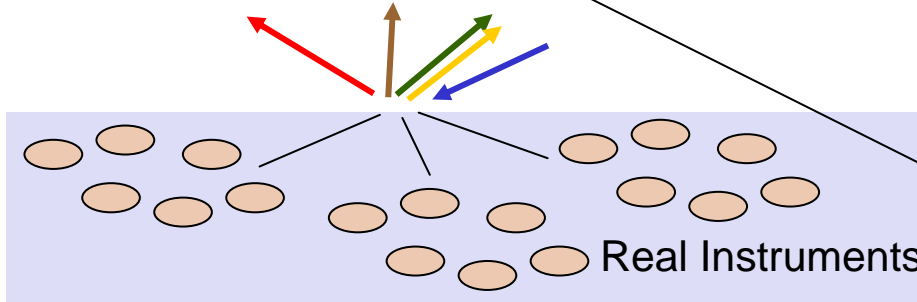
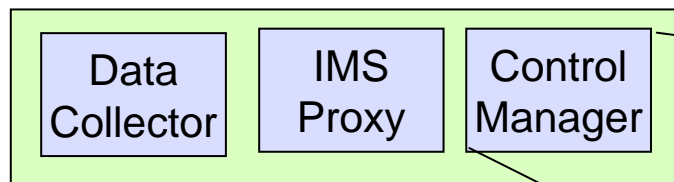
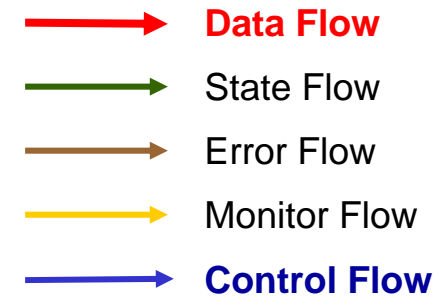


- Instrument Element (IE)
  - *Grid representation of physical instrument*
- Virtual Control Room (VCR)
  - *Multi –user collaborative environment and grid interface*
- Workflow Management System (WfMS)
  - *To allow grid-level choreography.*

## Virtual Instrument Grid Service (VIGS)

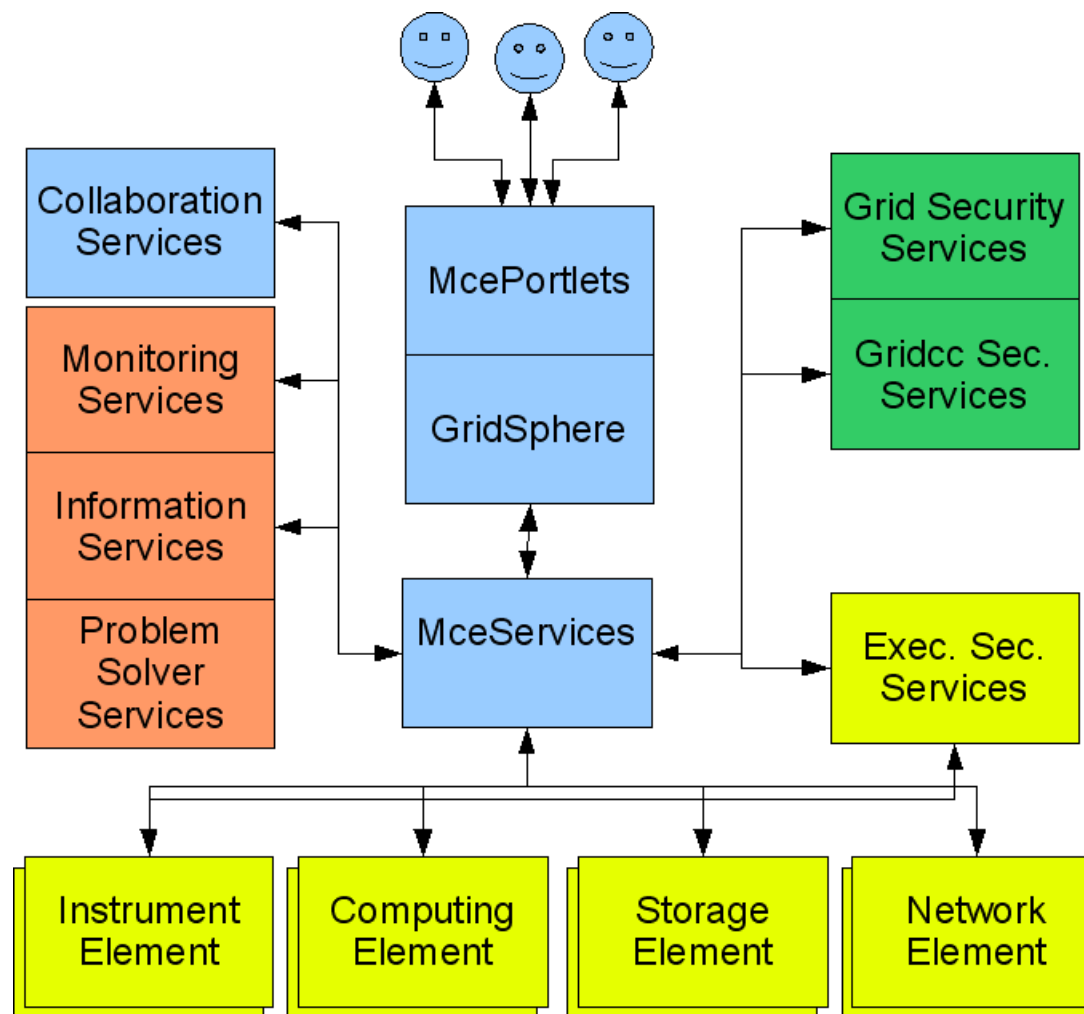


- The term Instrument Element describes a set of services, that provide the needed interface and implementation, to enable the remote control and monitoring of physical instruments.



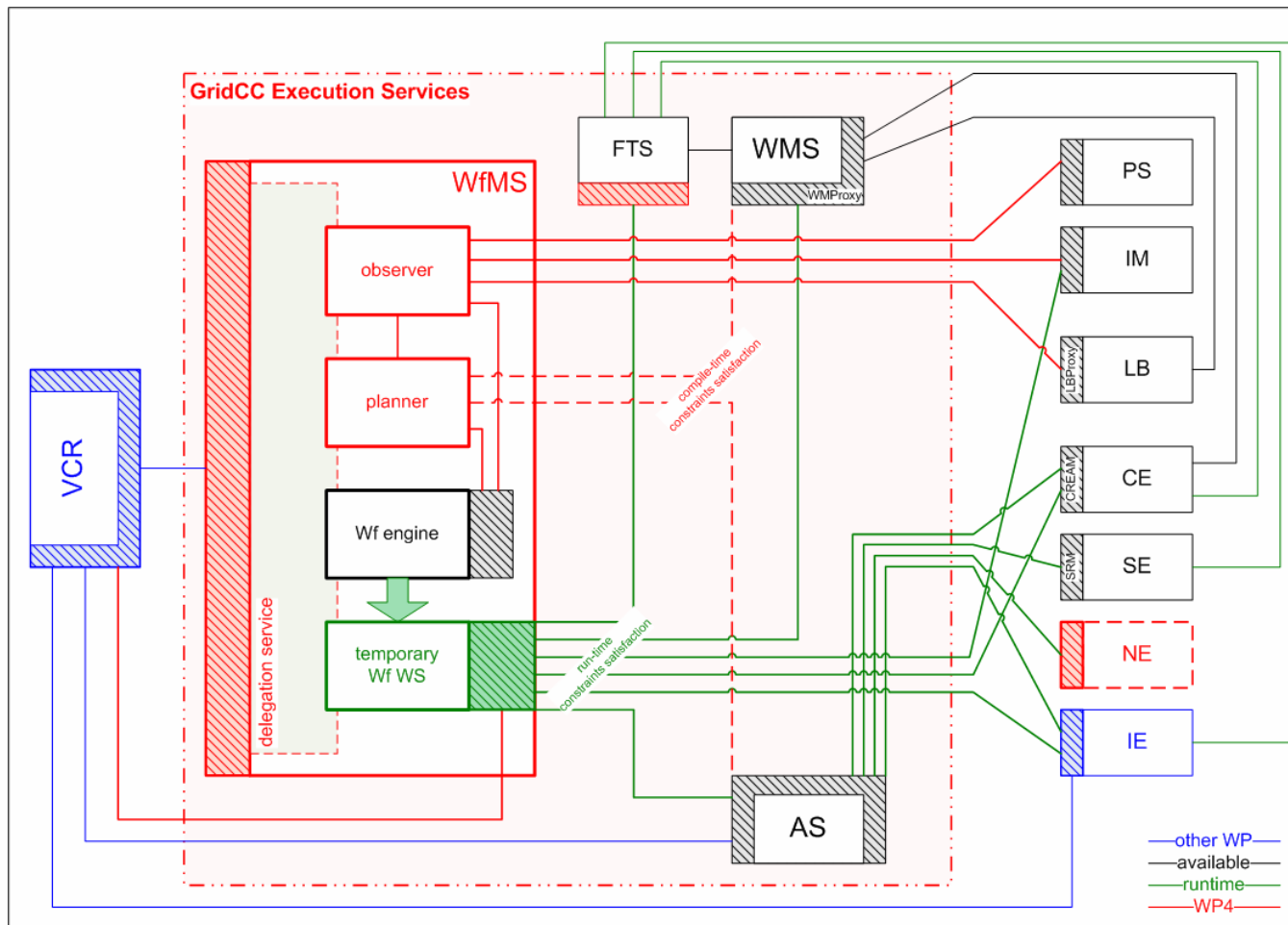


# VCR architecture



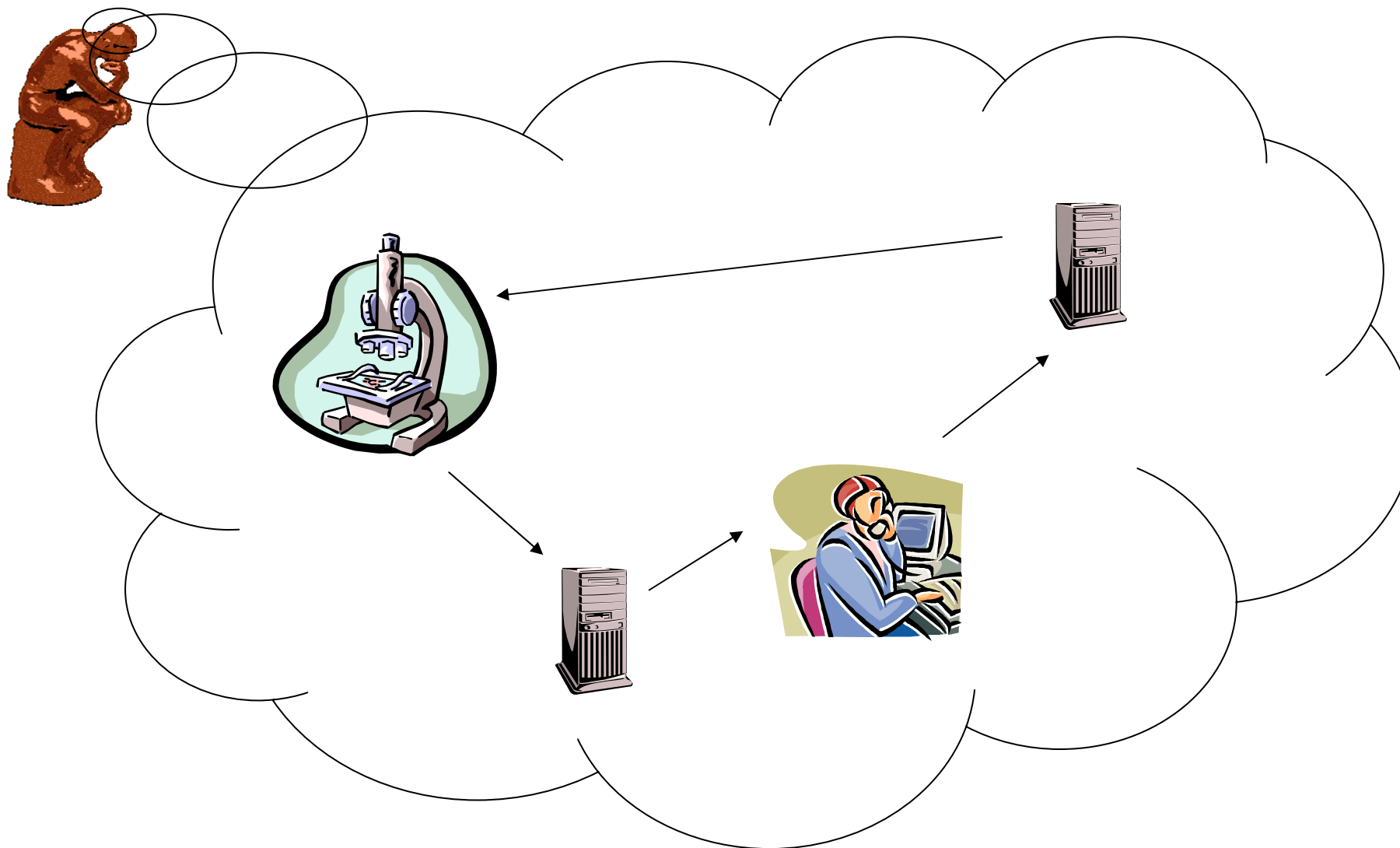


# WfMS in grid context



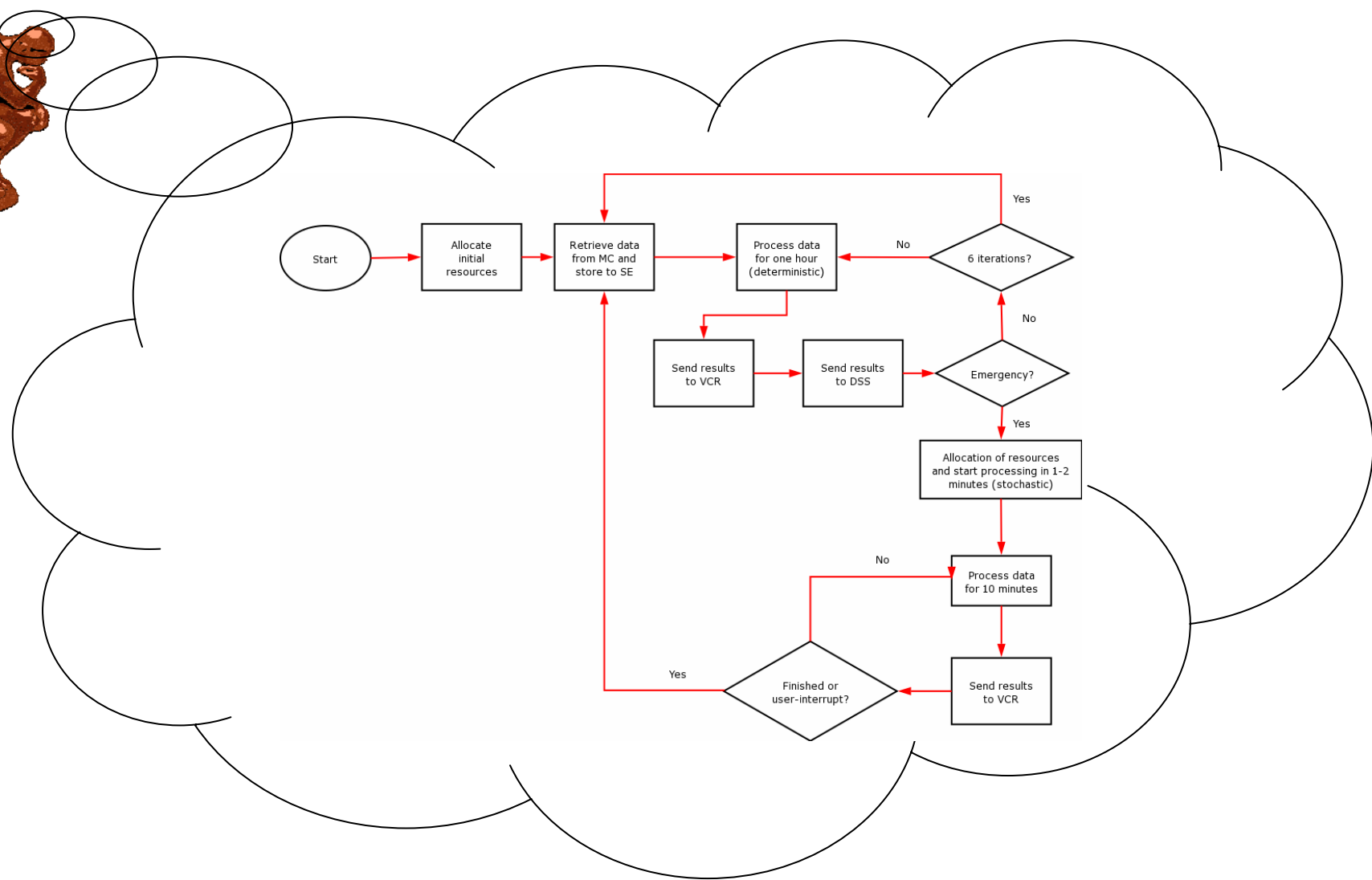


# The Scientific Workflow





# The Scientific Workflow

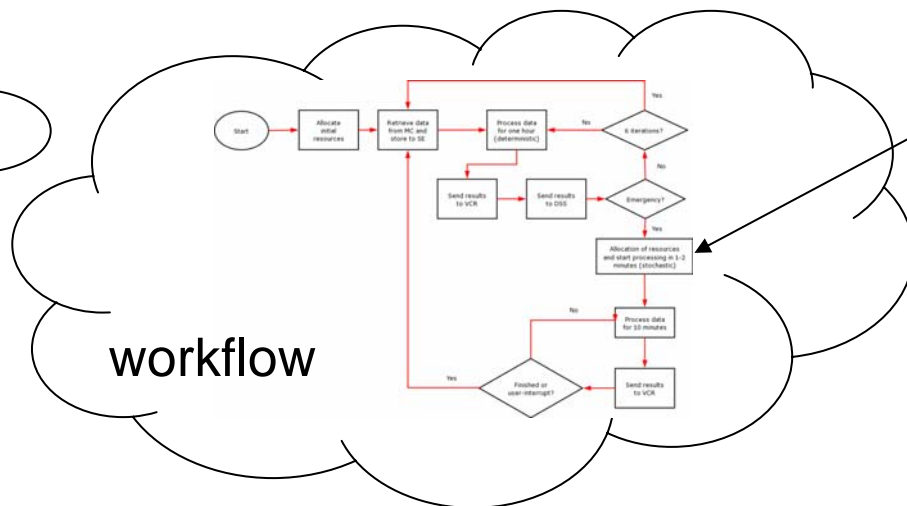




# Mapping workflow to the Grid

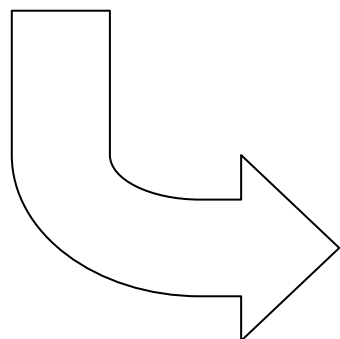


user



workflow

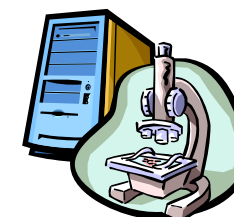
components



&



controls





# Filling the Functionality Gap



Extensions to gLite are desirable, these are:

- *Include IE relevant details within information service*
- *Extend CREAM to support Advance Reservation*
- *Enhance the interaction between the gLite WMS and the GRIDCC QoS-enabled WfMS*



# Questions...

