

A PPARC funded project

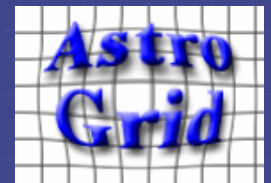


# AstroGrid Framework

Consortium meeting,  
Dec 14-15, 2004  
Edinburgh

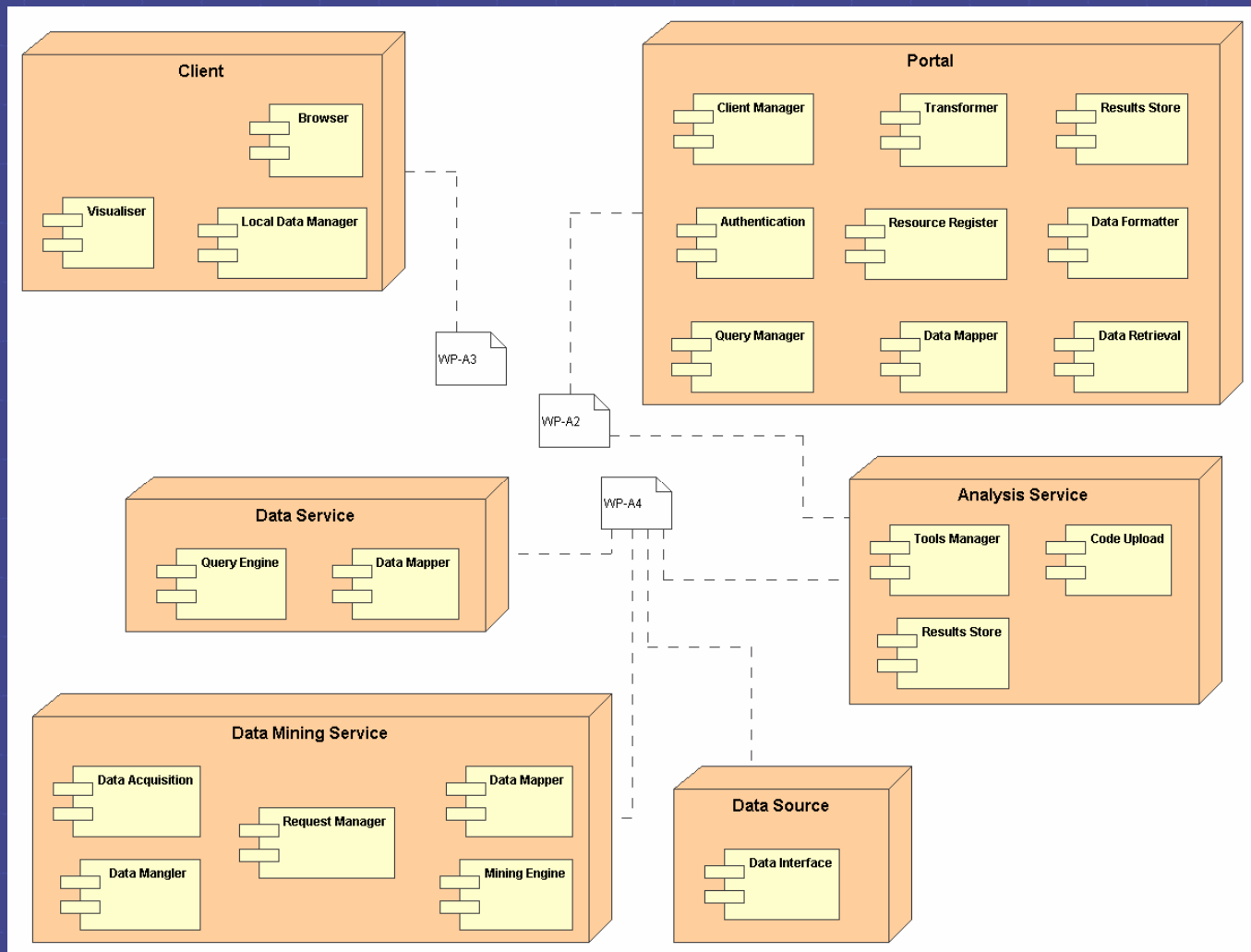
*Tony Linde  
Programme Manager*



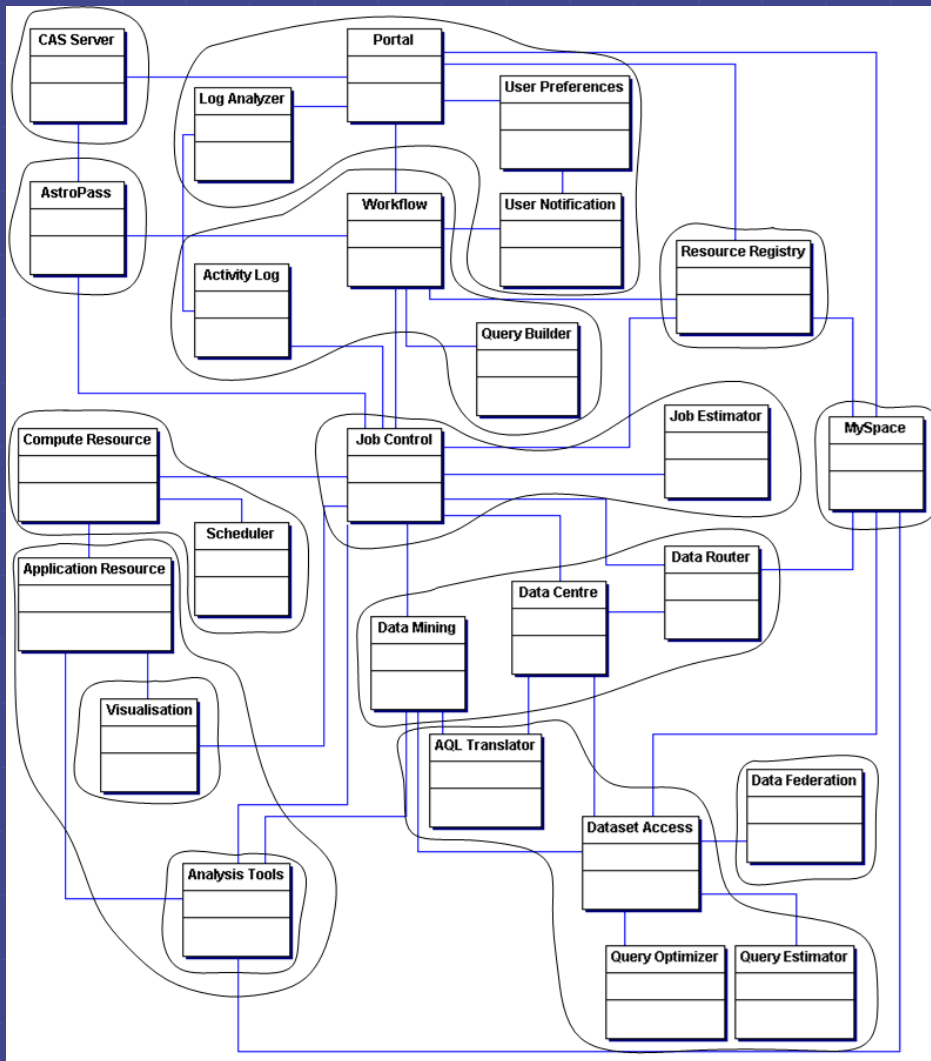


# A little bit of history...

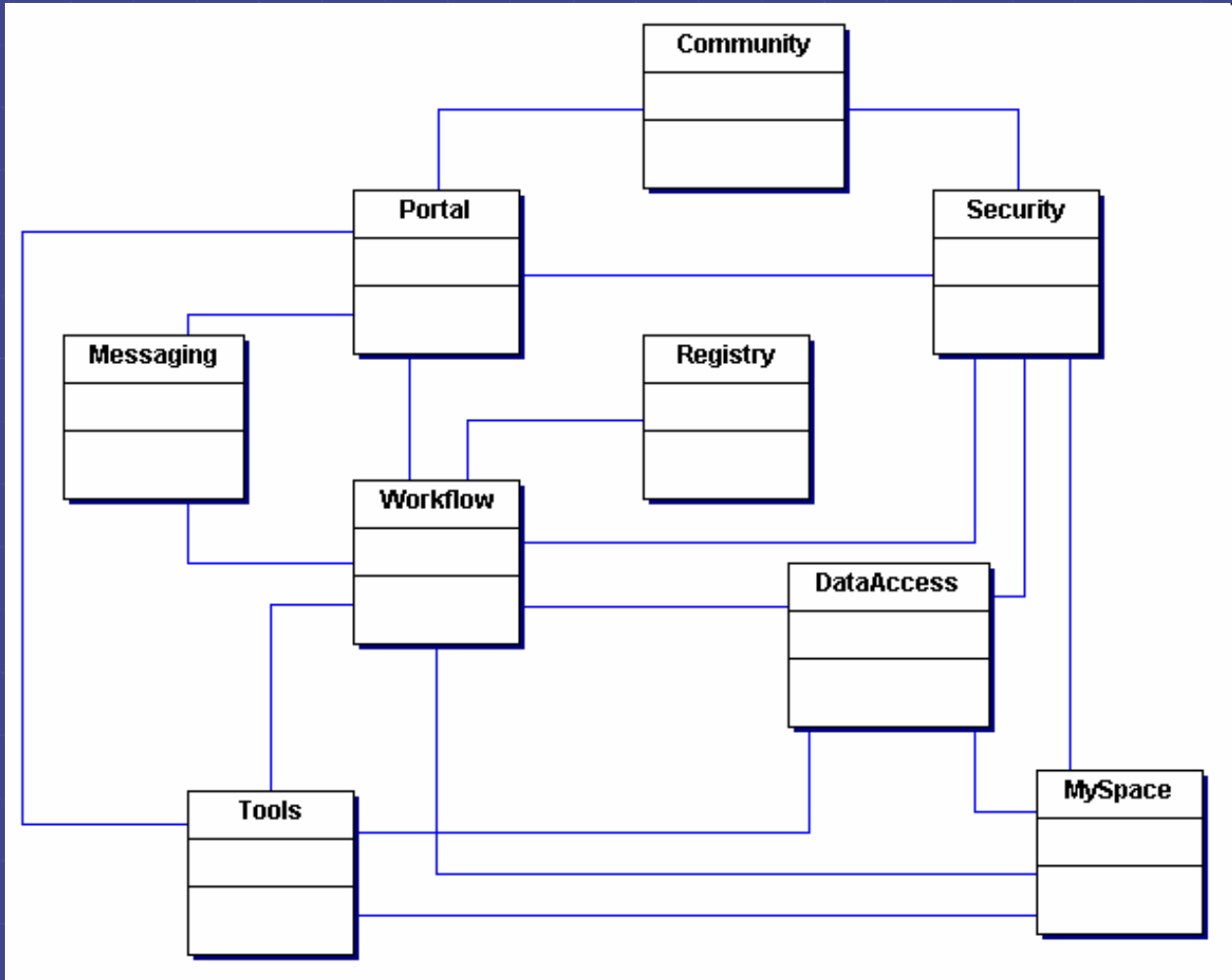
# Dec 2001



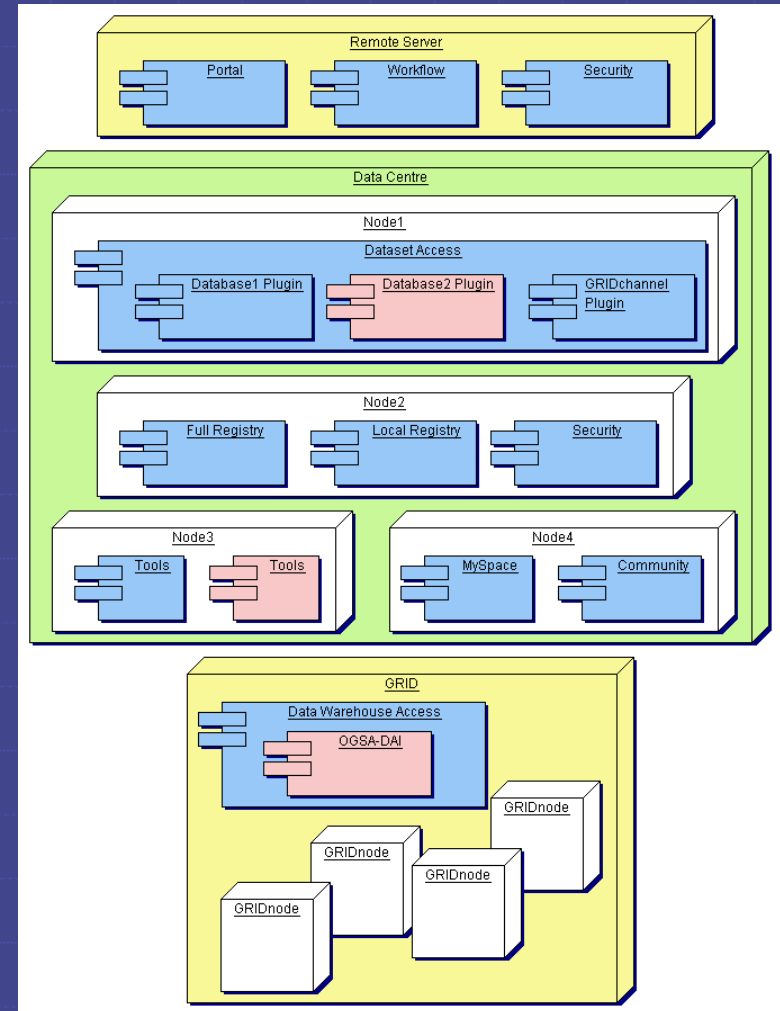
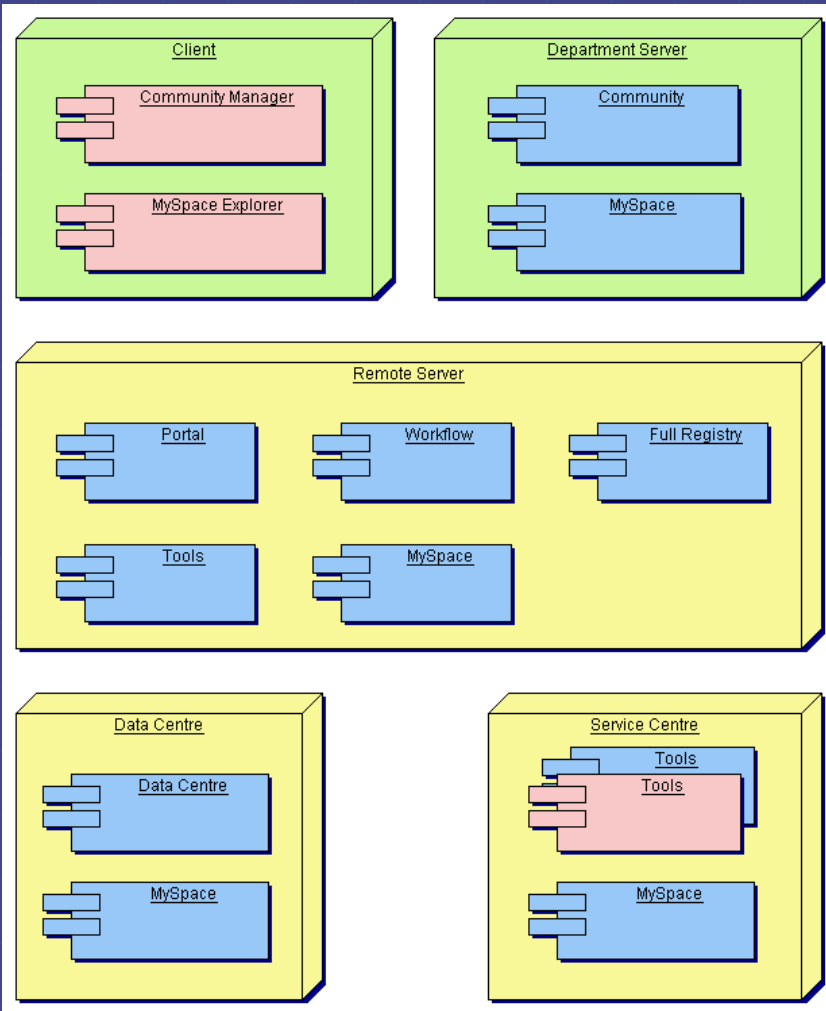
# Jan 2003



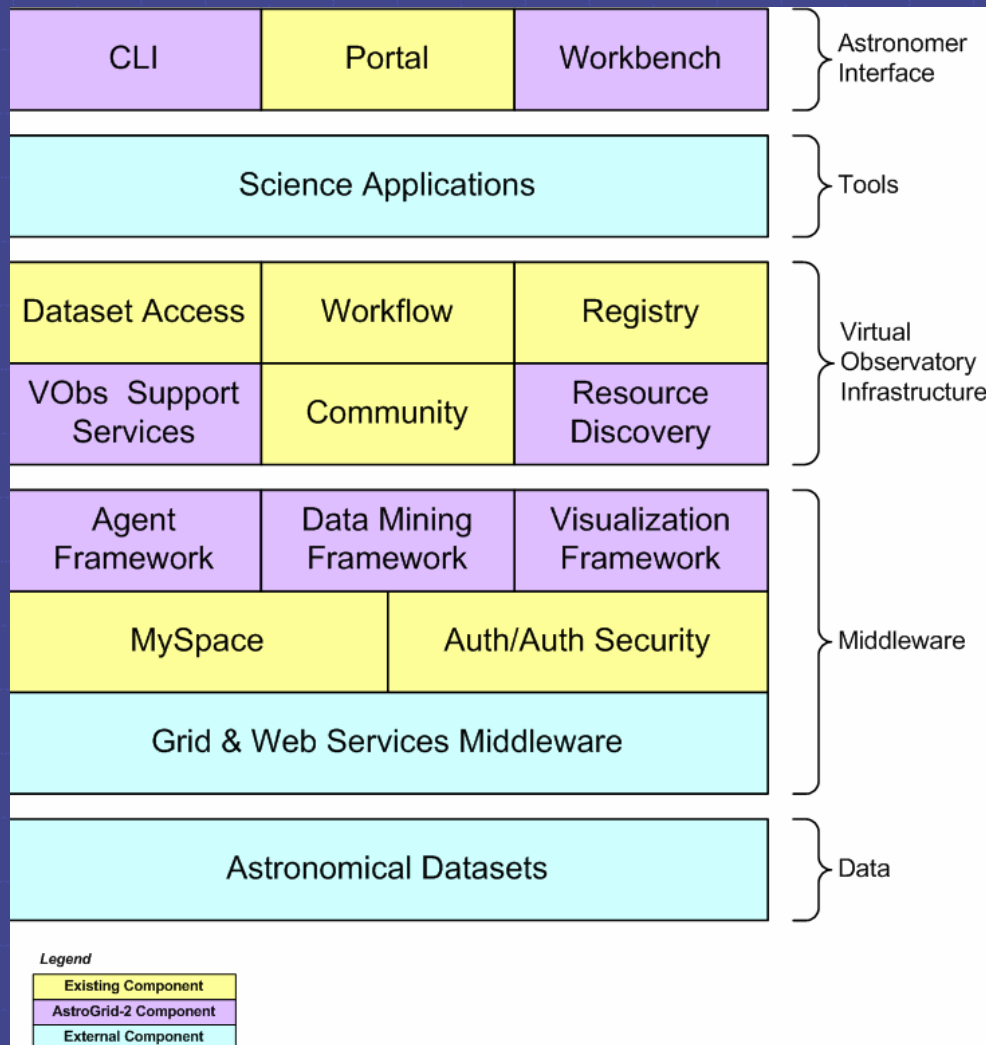
# Jul 2003



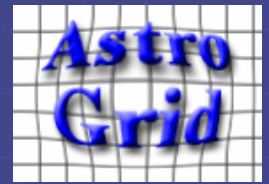
# Nov 2003

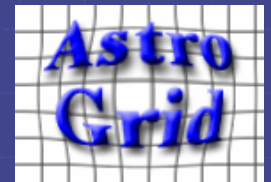


# May 2004: Planning for AG2



# Now for some component reuse...





# AstroGrid Posters at ADASS

- ◆ Portal and Workflow
- ◆ AstroGrid and the Registry: Enabling Resource Discovery
- ◆ Access Control in AstroGrid software
- ◆ The AstroGrid Common Execution Architecture
- ◆ The Publisher's AstroGrid Library

# Portal and Workflow

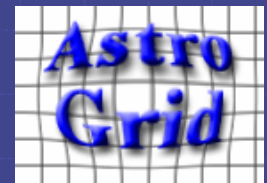
- ◆ Supports workflow paradigm (from the simple to the complex)
- ◆ Queries and workflows are designed using the portal
- ◆ Work is run remotely and asynchronously
- ◆ Archives searched and results manipulated
- ◆ Results are stored in a virtual file system
- ◆ Queries and workflows can be re-used and shared

# Enabling Resource Discovery

- ◆ Types of Registries:– Full, Publish, Special
- ◆ Registry is the main focal point for all Astrogrid components
- ◆ Agreed Standards with IVOA
  - Search and harvest interface
  - OAI standard for harvest interface
- ◆ Adheres to the Astrogrid CEA standard
- ◆ Types of resource
  - Generic services, web services, applications, ...
  - Data collections
  - AstroGrid-specific resources (e.g. MySpace servers)
- ◆ Use of XQuery language with eXist XML database.
- ◆ Harvesting
  - US NVO
  - Vizier

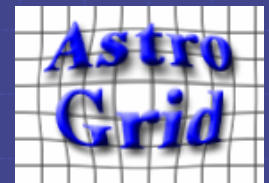
# Access Control

- ◆ AstroGrid has taken the lead in AAA because our system is based on writable storage
- ◆ Implement single-sign-on (SSO) authentication
  - Using a community service (so, account can be used with a number of portals or other UIs)
- ◆ Programme-to-programme authentication based on message security with SOAP headers and WS-Security
- ◆ Facade API to hide details from implementations
  - Underneath, use JAX-RPC/Axis handlers to secure messages.
- ◆ Little authorization support in 2004, more in 2005
  - groups, quotas, community authorization, file sharing
- ◆ Currently specific to AstroGrid
  - Working with IVOA to design and adopt a common standard



# Common Execution Architecture

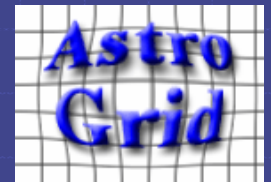
- ◆ Uniform interface for running applications in VObs
- ◆ Set of WSDL and schema
  - Define the interactions in language independent way
- ◆ Adapters (ExecutionControllers) implemented
  - Using Java Web services
  - To run legacy command-line applications
  - To run legacy HTTP GET/POST apps within the framework
- ◆ ExecutionControllers
  - Allow asynchronous operation of the applications
  - Callback and polling mechanisms for delivery of results
- ◆ Tightly integrated with JES (Job Execution System)
  - Allows programmable workflows



# Publisher's AstroGrid Library

- ◆ Task: What's involved in publishing data to the VO?
- ◆ Library of components
  - Make a data owners life a (relatively) straight-forward transition to a data owner/publisher
- ◆ Variety of 'plugins'
  - Cope with different collections of data (modes of storage)
    - ◆ To make life easier for installers
    - ◆ and test how they might be presented to the VO
- ◆ Ready-made web UI
  - Suitable for astronomers to use,
  - Includes useful configuration & monitoring features
- ◆ VO-compatible interfaces for tools to access the data
- ◆ Features to communicate with other VO services
  - E.g. Registries

# If you want to know more about...



- ◆ Portal and Workflow
- ◆ AstroGrid and the Registry: Enabling Resource Discovery
- ◆ Access Control in AstroGrid software
- ◆ The AstroGrid Common Execution Architecture
- ◆ The Publisher's AstroGrid Library
- ◆ Jeff Lusted
- ◆ Kevin Benson
- ◆ Guy Rixon
- ◆ Paul Harrison
- ◆ Martin Hill