



# **UK e-Science Report on OGSA, OGSi & OGSA-DAI**

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[www.nesc.ac.uk](http://www.nesc.ac.uk)**

**28<sup>th</sup> October 2002**

**Meeting of the UK e-Science  
Technical Advisory Group  
Renaissance Hotel  
Heathrow, London**

# Overview

- **OGSA, OGSi @ GGF6**
  - ▶ Powerful force & progress
- **DAIS-WG @ GGF6**
  - ▶ International, strong UK lead, making good progress
  - ▶ Influencing OGSi
- **OGSA-DAI**
  - ▶ Phase 1: Complete and successful
    - But worrying structural issues
  - ▶ Phase 2: Energetic and effective development collaboration
    - But unresolved structural issues
- **Take home message**
  - ▶ Address these structural issues

# OGSA & OGSi prognosis

- Powerful rallying cry
- Well organised
  - OGSi, OGSA, ...
- Responsive to DAI
- Substantial industrial investment
- Multi-national intensely active working groups
- IBM announcement of contribution of its OGS code to public source
- Technical Previews
- Alpha 15<sup>th</sup> January '03
- Major engineering effort
  - Complex & large code
- More demanding of software environment
  - Web services
  - Messaging
- Depends on planned extensions to standards
- First APIs for Java

**Still gets my vote**

**Sustain your investment**



# GGF DAIS WG

- **Chairs**

- Norman Paton (Manchester Uni.)
- Leanne Guy (CERN) ... **dropped out**
- Dave Pearson (Oracle UK)

- **Activity**

- BoF GGF4 Toronto
- WG Meeting GGF5 Edinburgh
- Papers for GGF6
- Workshops & Mail lists

Norman Paton,  
Inderpal Narang,  
Susan Maliaka,  
Greg Ricardi, ...

- **Goals**

- Agree Standards for Database Access & Integration
- Freely available reference implementations
  - ▶ OGSA-DAI one source & focus for discussions

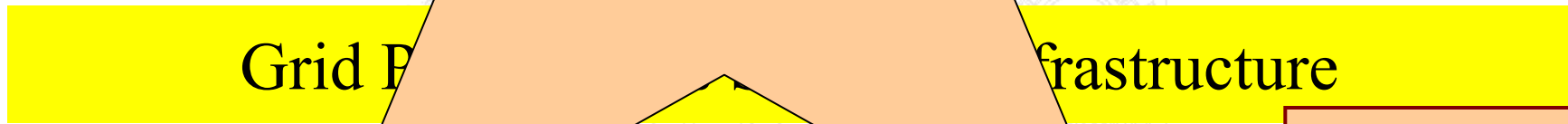
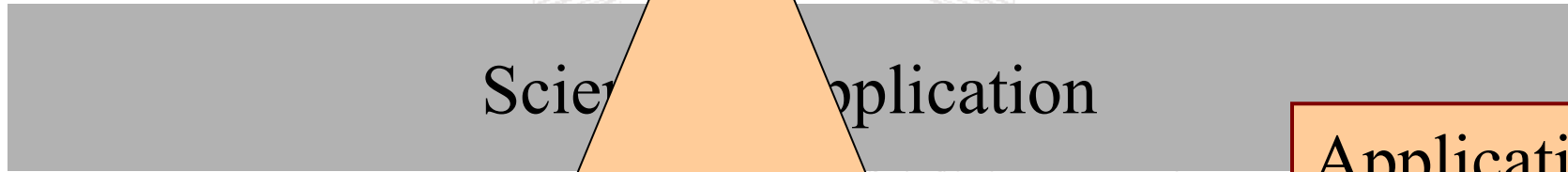
- **Data Provenance and Derivation Workshop**

- Significant UK contribution

<http://www.cs.man.ac.uk/grid-db/>

# The OGSA stake holders

Scientific Users

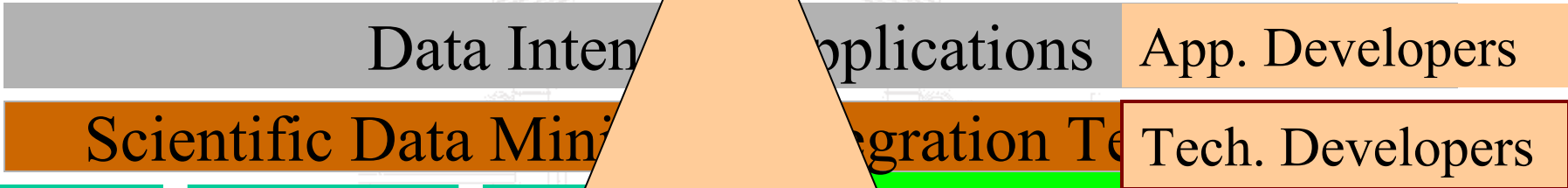
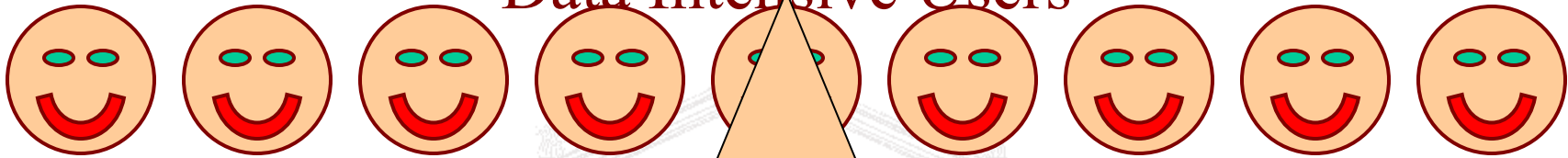


**Keep all the  
stake holder groups  
satisfied**

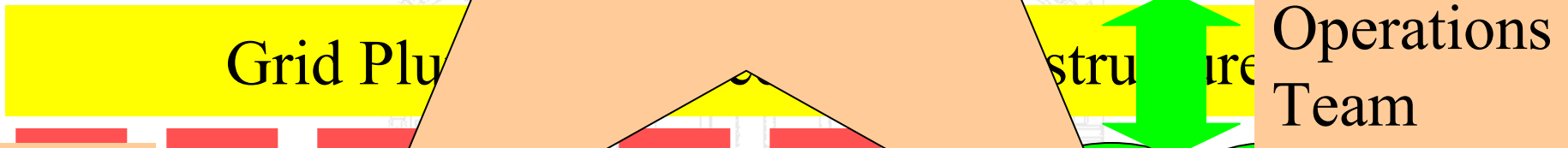


# OGSA-DAI Stake Holders

Data Intensive Users



**Keep all the stake holder groups satisfied**





# Data Access & Integration



- **Central to e-Science**  
**Astronomy, Earth Sciences, Ecology, Biology, Medicine, ...**
  - **Collaboration**
    - ▶ Shared Databases
    - ▶ Curated Knowledge
    - ▶ Accumulated Observations
    - ▶ Accumulated Simulations
  - **Computation**
    - ▶ Data mining
    - ▶ Input to models
    - ▶ Calibration of models
  - **Presentation**
    - ▶ Publication of results
    - ▶ Visualisation



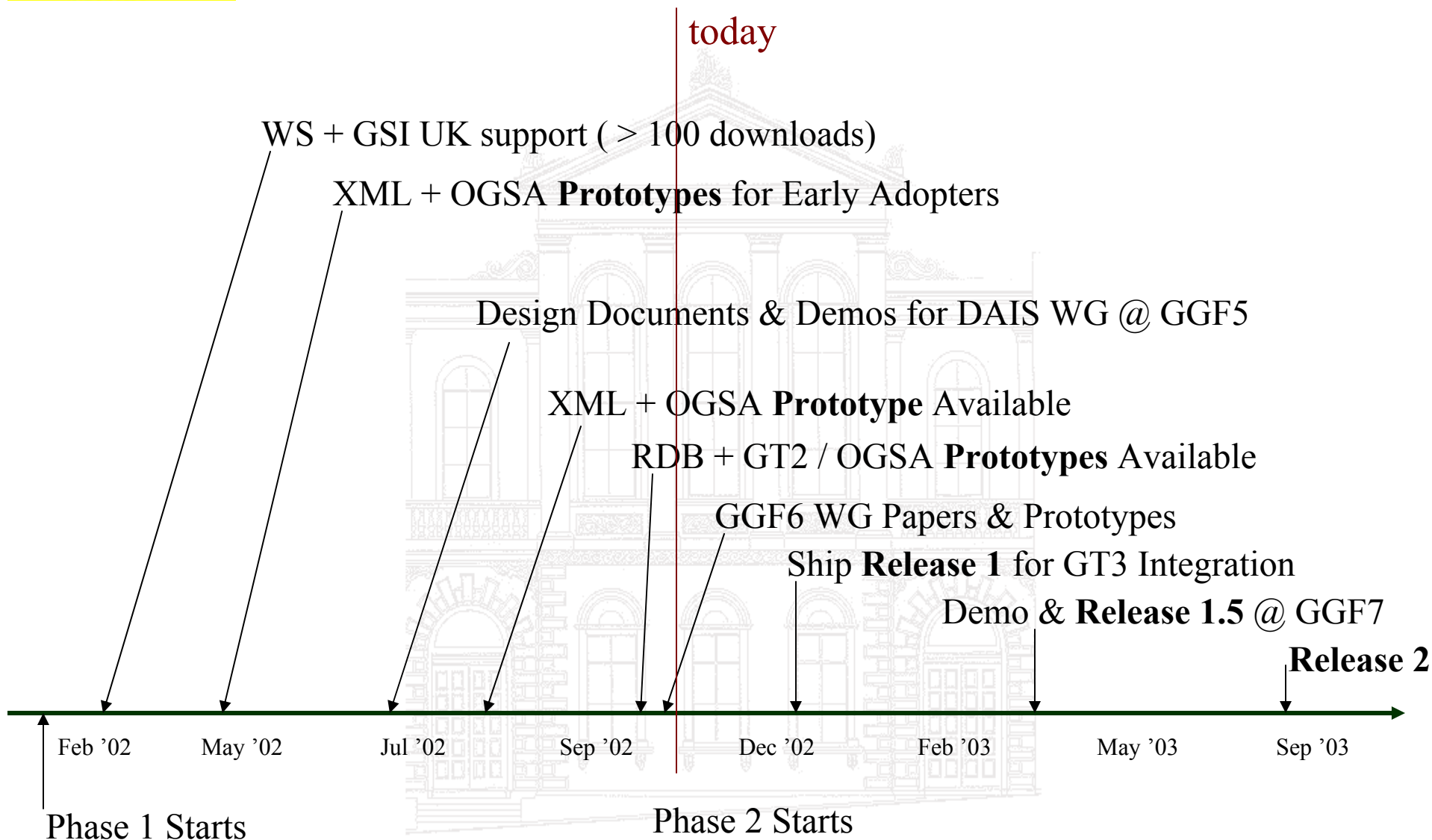
# OGSA-DAI project



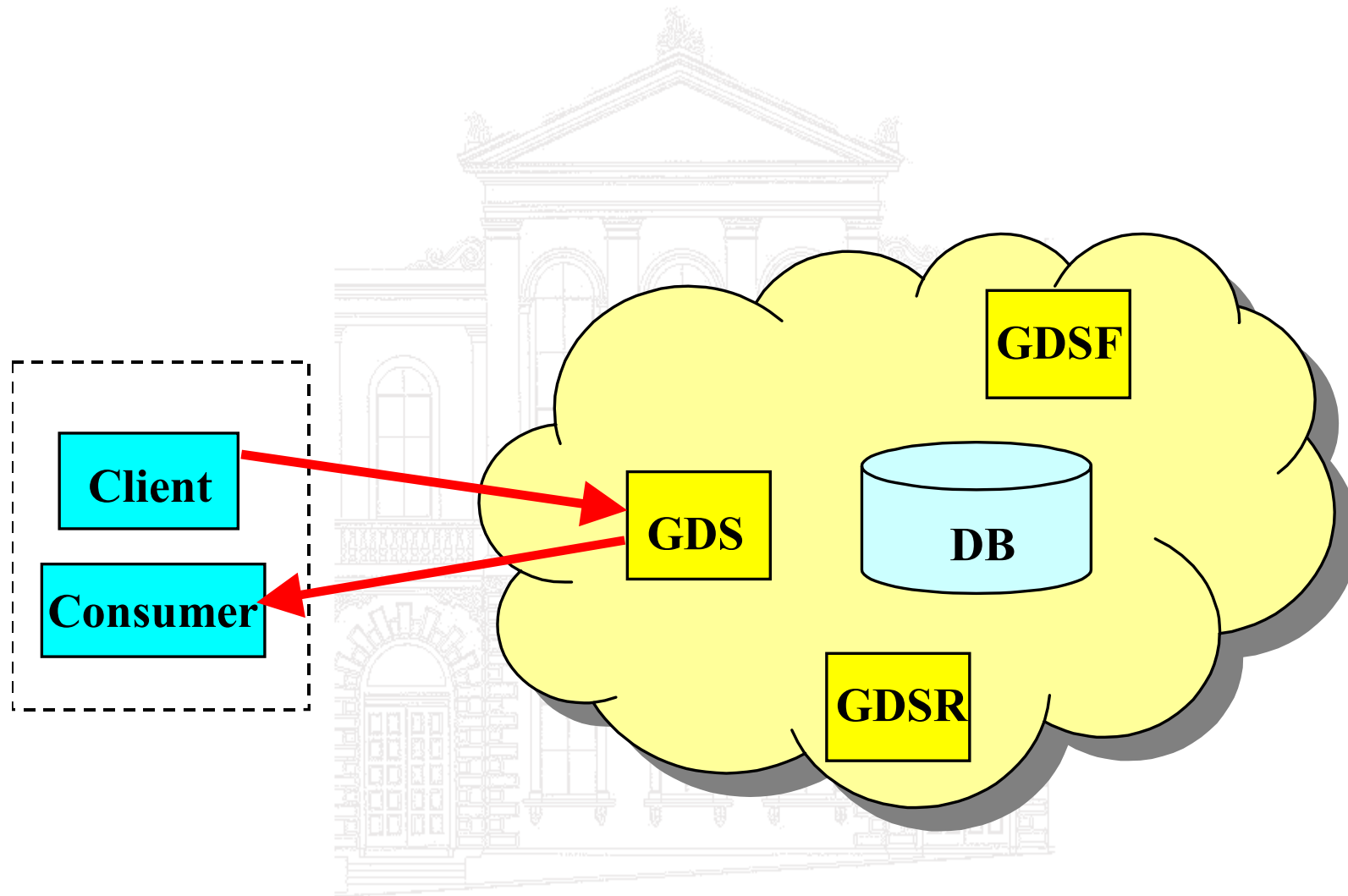
- **Lego kit for Data Access & Integration**
  - Components for e-Science Applications
  - Accelerated Application Development
  - Multiple Data Models
  - Distributed Data
  - Access via Grid & Proxies
  - Integration, Translation & Transformation
- **Open Source Reference Implementation**
  - For DAIS-WG standard
- **Trigger for DAI Component Construction**
  - Stimulate a community

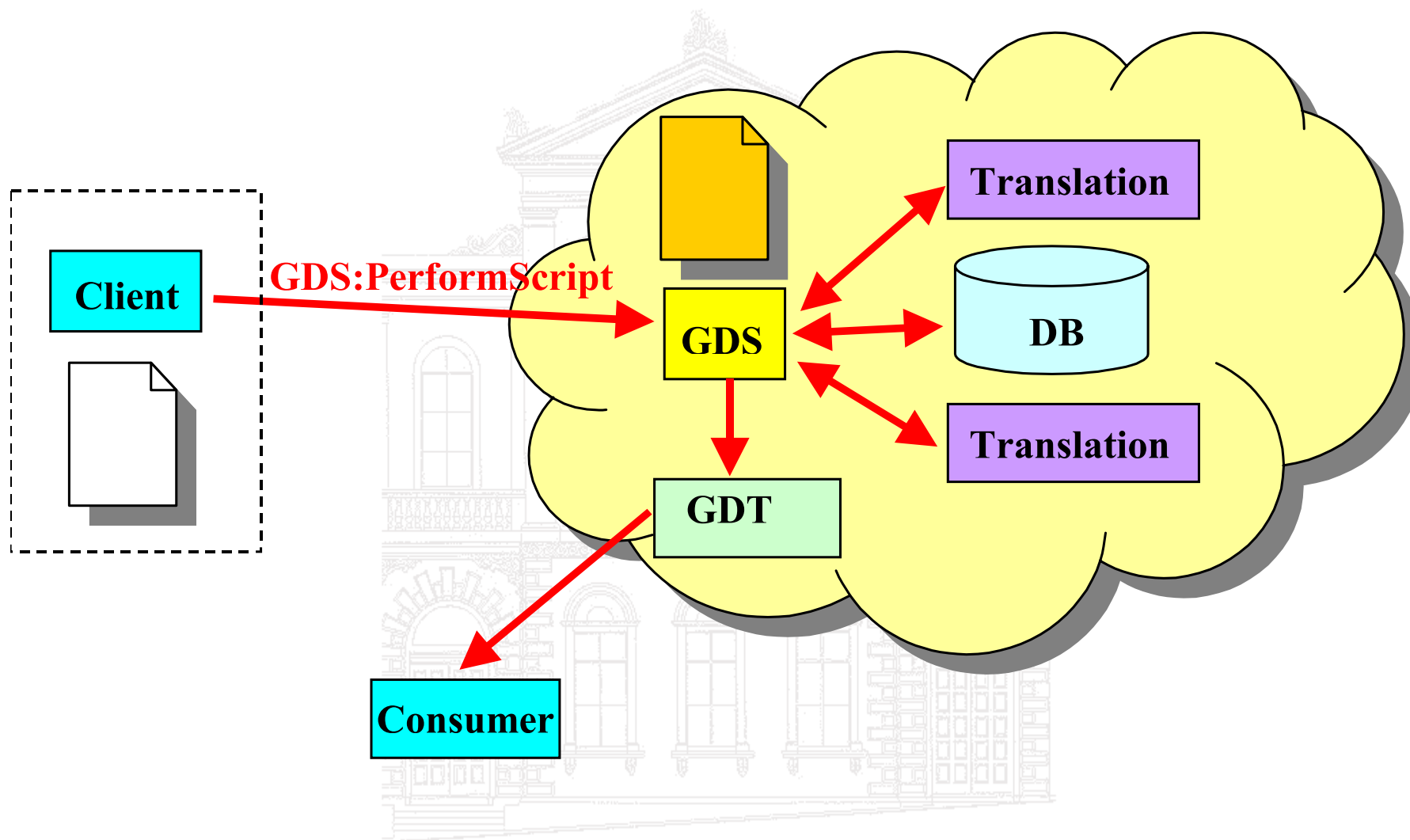


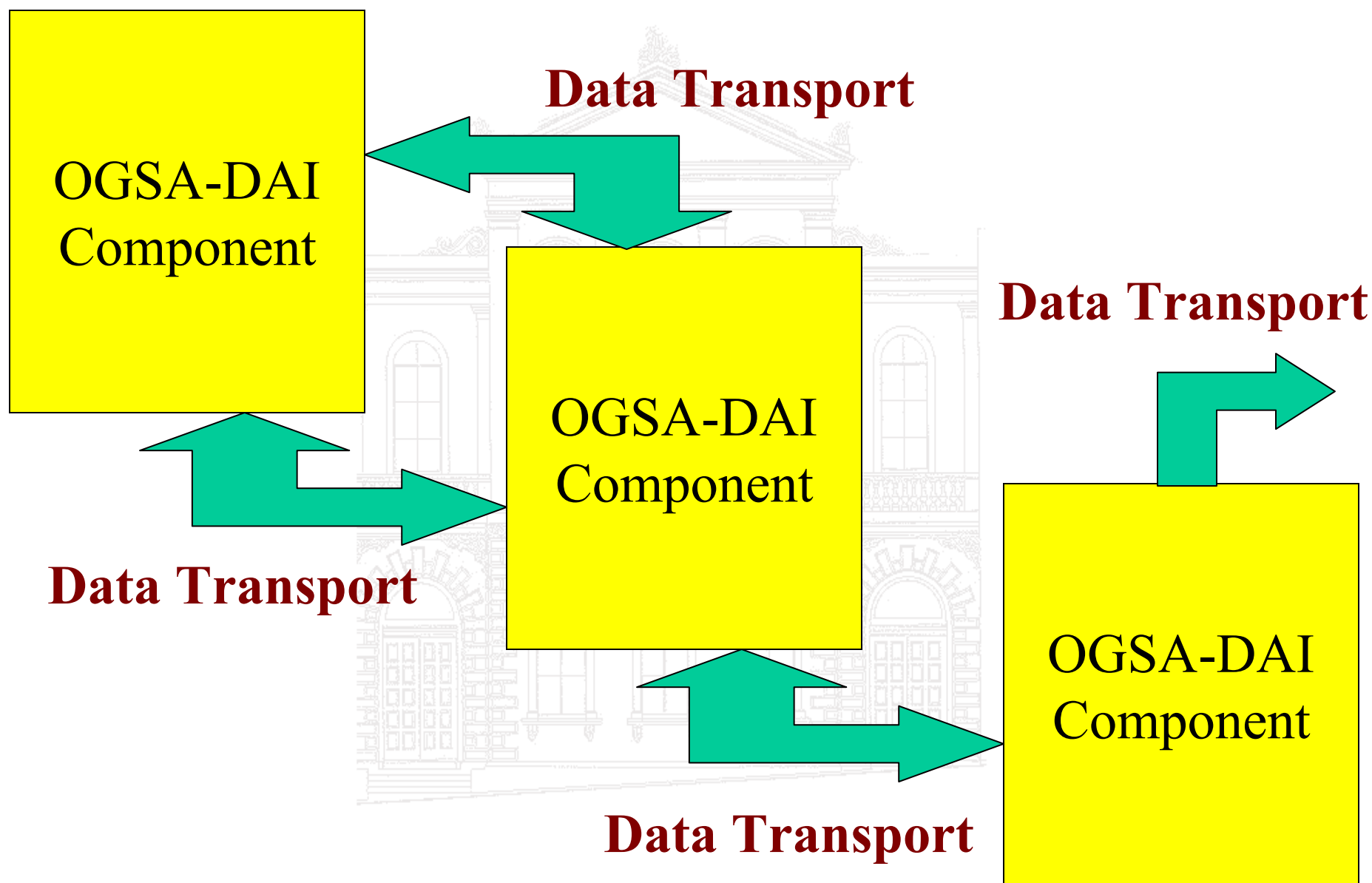
# OGSA-DAI Time Line



# Primary Components









# Today we have

- **A well-developed architecture**
  - **Issues identified and prioritised**
- **An emerging standard spec.**
- **A high level design**
- **Active cross-site development teams**
- **A functional spec for release 1**
- **A plan for the remainder of the project**
- **Effective operational arrangements for development**
- **Architecture needs rewriting**
  - **Doc. Structure**
  - **Emerging ideas**
- **Standard needs negotiation and to be led from reference implementation**
- **High-level design still being “polished”**
- **Resources not fully committed by managers**
- **Development resources still being set up**

# Today we need

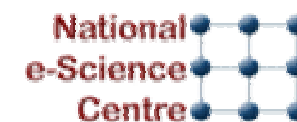
- **Commitment of and by Managers**
  - Members of teams allocated for an agreed period
  - Managers' and leaders' time and schedule committed
- **Completion of collaboration agreement**
  - Sign off source licence
  - IPR and liability agreement
- **Agreed strategy for Globus copyright**
  - General issue for many UK projects
- **Agreed plan for UK hand over and support**

# Take Home Message

- **Developers working hard and well**
  - Quality of input and work very good
  - Good quality team
- **Plans, designs, proto-products emerging**
- **Committed to release to GTS Alpha**

## **Requires Project Board Action**

- **Unresolved high-level issues are major risk**
  - **Could block release**
  - **Could disrupt effective teams**
  - **Could leave users without support**

A faint, light-colored architectural drawing of a classical building facade is centered in the background. It features a pedimented roof, a portico with columns, and several arched windows and doorways.

**End of Presentation**

**Questions Please**



# OGSA-DAI Summary



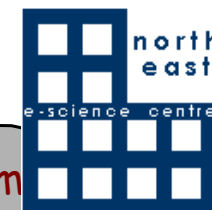
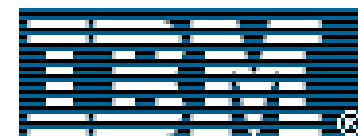
- **On Schedule & Going Well**
- **Contributions via DAIS-WG @ GGF5 & 6**
- **Releases with GT3 Releases scheduled**
- **Status: Early Days**
  - Released prototypes
  - Tested Architectural Design
  - Using OGSA
  - Working with Early Adopter Pilot Projects
    - ▶ AstroGrid & MyGrid
  - First PRODUCT release Dec '02
- **Influence OGSA-DAI direction**
  - Via DAIS-WG & Direct messages to us



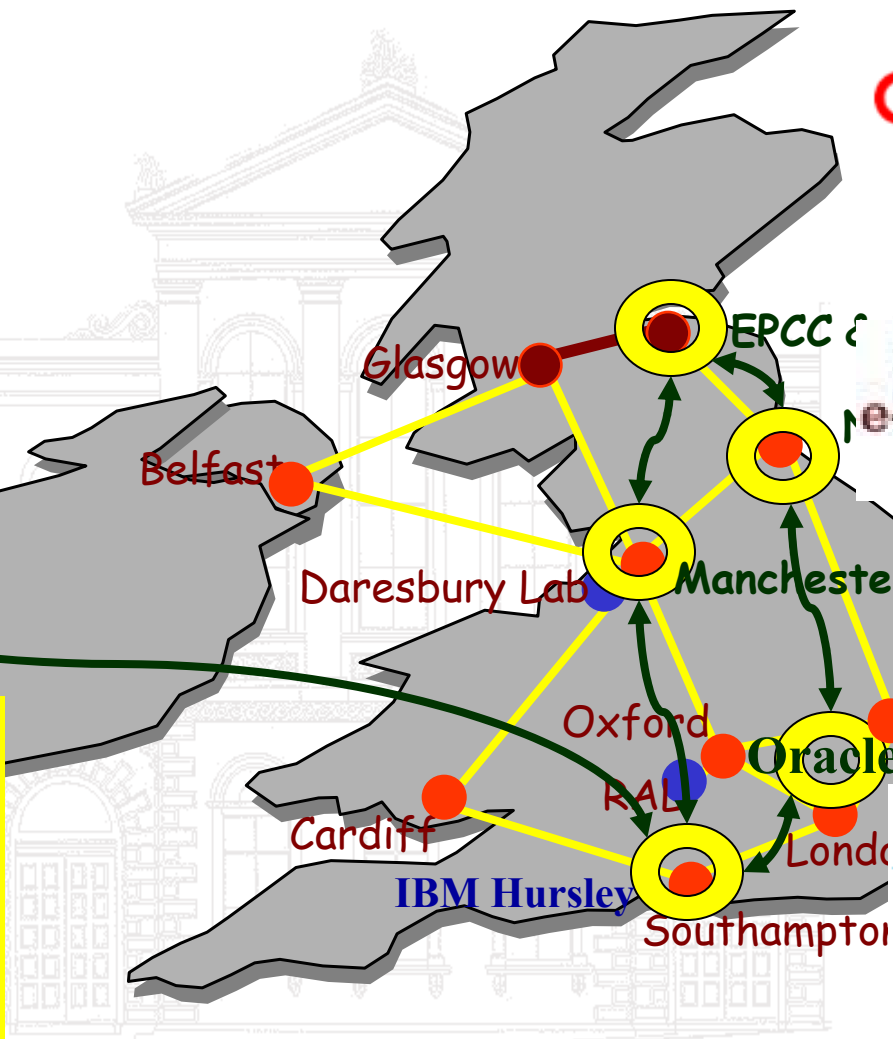
# OGSA-DAI Partners



ORACLE®

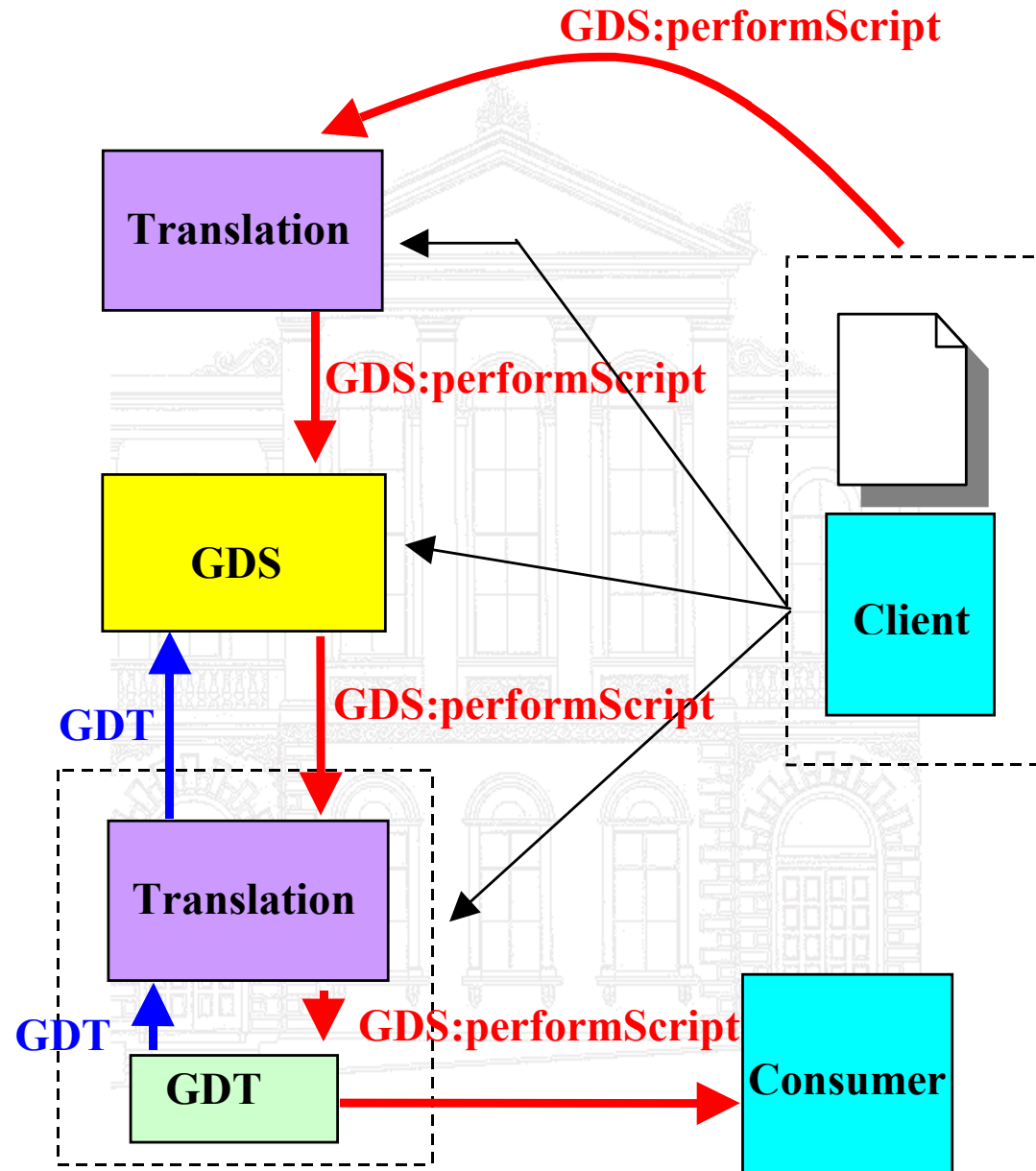


EPCC & NeSC  
IBM UK  
IBM USA  
Manchester e-SC  
Newcastle e-SC  
Oracle



£3 million, 18 months, started February 2002

# Composed Components





# DAI Key Components



GridDataService GDS Access to data & DB operations

GridDataServiceFactory GDSF Makes GDS & GDSF

GridDataServiceRegistry GDSR Discovery of GDS(F) & Data

GridDataTranslationService Translates or Transforms Data

GridDataTransportDepot GDTD Data transport with persistence

**Relational & XML models supported**

**Role-based Authorisation**

**Binary structured files**



# OGSA Relationship



Class	GridService	Registry	NotificationConsumer	NotificationProducer
GDS	Mandatory		Optional	Normal
GDSF	Mandatory		Optional	Normal
GDSR	Mandatory	Mandatory		Normal
GDTS	Mandatory			
GDTD	Mandatory		Optional	Normal



# DAI portType Usage



Class	GridDataService	DataTransport	Factory
GDS	Mandatory	Normal	
GDSF	Optional	Normal	Mandatory
GDSR	Optional		
GDTS	Optional	Mandatory	
GDTD	Optional	Mandatory	