

GRIDCC-ARGUGRID

**Network Management & Optimal Design Lab.
NTUA**

Athens, 13 March 2006

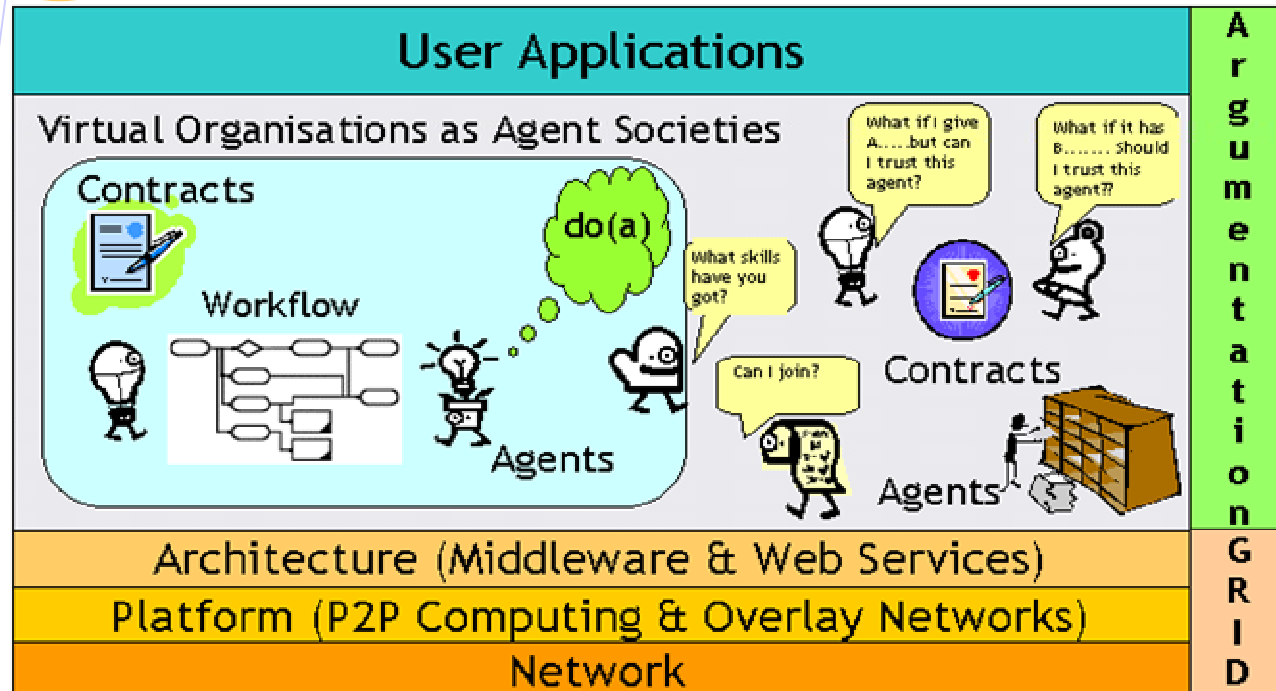
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NETMODE

Grid Projects

- **Argugrid: ARGUmentation as a foundation for the semantic GRID, FP6, 06-03-2006**

Overview of Argugrid



Imperial College
London

CITY City University
London



Institute of Communication
and Computer Systems

InforSense
The Integrative Analytics Company



Goals

- Develop argumentation-based foundations for the GRID, populated by rational decision-making agents.
- Incorporate argumentation models into service-centric architecture.
- Develop underlying platform using P2P computing and overlay networks.
- Validate ArguGRID by way of industrial application scenarios.

Participants

- **IMPERIAL**
- **RHUL**
- **DIPISA**
- **ICCS**
- **AIT**
- **InforSense**
- **GMV**
- **CosmoONE**

**Imperial College
London**

CITY City University
London



InforSense
The Integrative Analytics Company



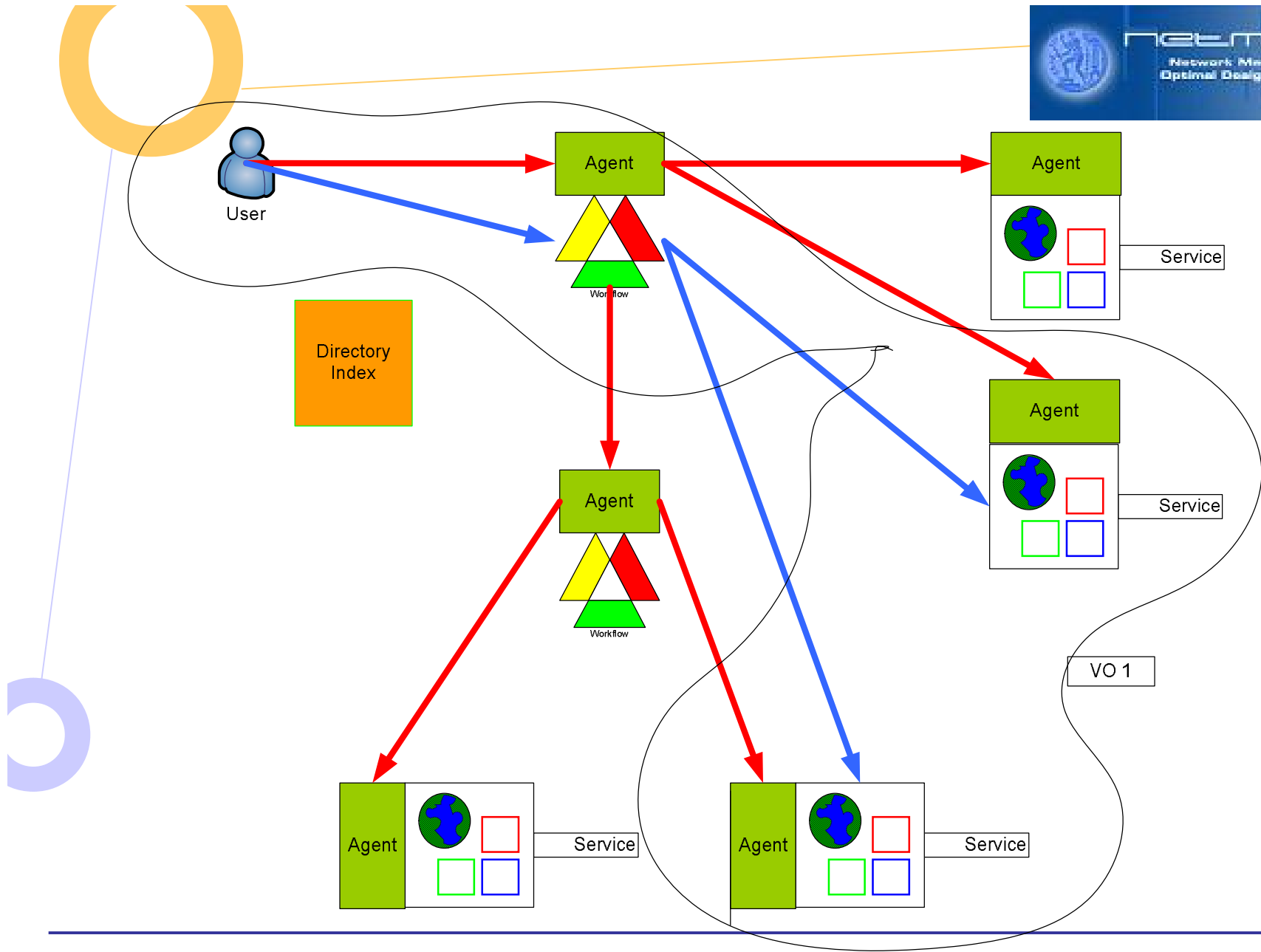
Main Objectives



- **To identify concrete e-business scenarios for the grid**
 - **To specify format of the state of agents populating the grid, by specifying agents'**
 - **knowledge, including internal representation of workflows**
 - **goals**
 - **plans**
 - **preferences**
 - **utilities/benefits assigned to world situations**
 - **To define and implement the automated reasoning of agents**
 - **To define and implement the methods for the identification of needs, formation, operation and dissolution phases in a VO.**
 - **To define and implement an argumentation-based contract negotiation process**
 - **To define methods and implementation for dispute resolution in contract violation.**
 - **To provide a comprehensive evaluation of the ARGUGRID approach and its possible future commercial exploitation**
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Argugrid Goals

- **Grid Computing**
 - ◌ Sharing Resources and Services
 - ◌ Interoperability
 - **Agent Computing**
 - ◌ Autonomous Problem Solving
 - ◌ Collaboration in dynamic environments
 - **ArguGrid**
 - ◌ Argumentative agents
 - ◌ Dynamic Composition of resources to meet User Requirements
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GridCC

- **GridCC : GRID ENABLED REMOTE INSTRUMENTATION WITH DISTRIBUTED CONTROL AND COMPUTATION, FP6, 03-05-2004**

GridCC Project

- The GRIDCC project is a 3 year project funded by the European Union which started in September 2004.
 - The first complete release of the software will be during the second year of the project.
 - The goal of GRIDCC is to build a widely distributed system that is able to remotely control and monitor complex instrumentation that ranges from a set of sensors used by geophysical stations monitoring the state of the earth to a network of small power generators supplying the European power grid.
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The main goals

- *the GRIDCC project extends the state of the art of computing Grid technologies, by introducing the handling of real-time constraints and interactive response into the existing Grid middleware*
 - *Our goal is to build a widely distributed system that is able to remotely control and monitor complex instrumentation ... These new applications introduce requirements for real-time and highly interactive operation of GRID resources.*
 - *One of the main objectives of the project is to verify the feasibility of a Grid-based remote control of systems requiring real-time response with real applications running on existing Grid test beds over both national and international network infrastructures (e.g. GEANT).*
 - *GRIDCC integrates a “grid of instrumentation” into existing Grid infrastructures that provide the computational power and storage needed for the applications*
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Participants

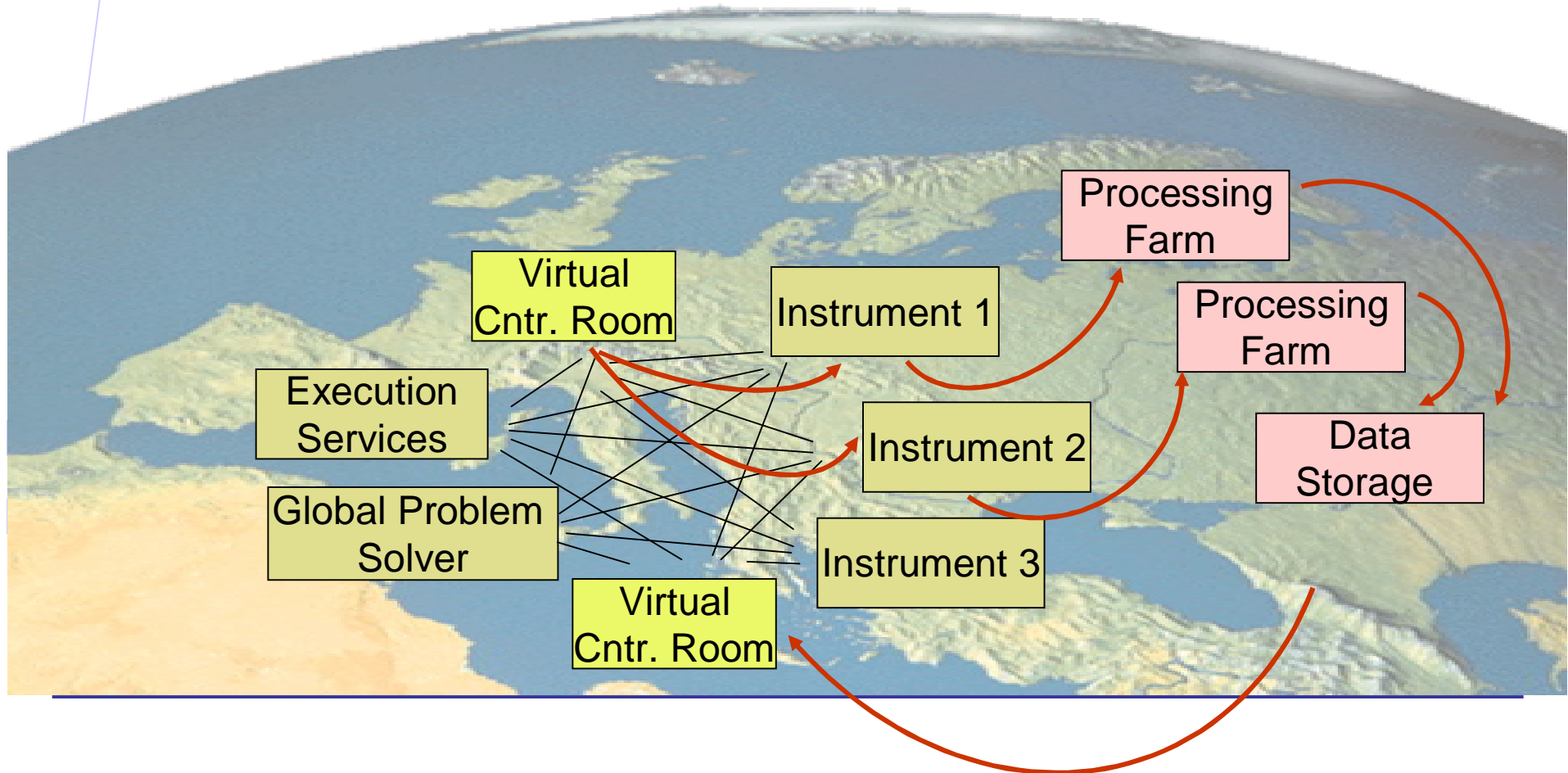


| Participant name | Country |
|--|----------------|
| Istituto Nazionale di Fisica Nucleare | Italy |
| Institute Of Accelerating Systems and Applications | Greece |
| Brunel University | UK |
| Consorzio Interuniversitario per Telecomunicazioni | Italy |
| Sincrotrone Trieste S.C.P.A | Italy |
| IBM (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 |
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the GRIDCC project



Use of the Grid technology, as extension of the Web Service Technologies, to develop a widely distributed control system with access to grid enabled computing and data storage facilities



GridCC - Applications

- The main objectives from our applications are (1) to offer good ground for stress-testing the GridCC middleware and (2) to offer different “use cases” or “user requirements” to the real time grid and used as “proof-of principle” of the applicability and completeness of the GridCC middleware. The applications are:
 - “Run Control”/INFN (high number of instruments and users, high-rate of incoming data)
 - “*Far remote operation of an accelerator facility*”/Elettra (high number of instruments/sensors , smaller-rate of incoming data)
 - “Power Grid”/Brunel (tests the benefit of computing Grid)
 - “Intrusion Detection System”/NETMODE-IASA (an anomaly-based IDS)
 - “Meteorology”/IASA (the need for high performance computing and the continuous update of output result)
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