

GRIDCC-ARGUGRID

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

Athens, 13 March 2006

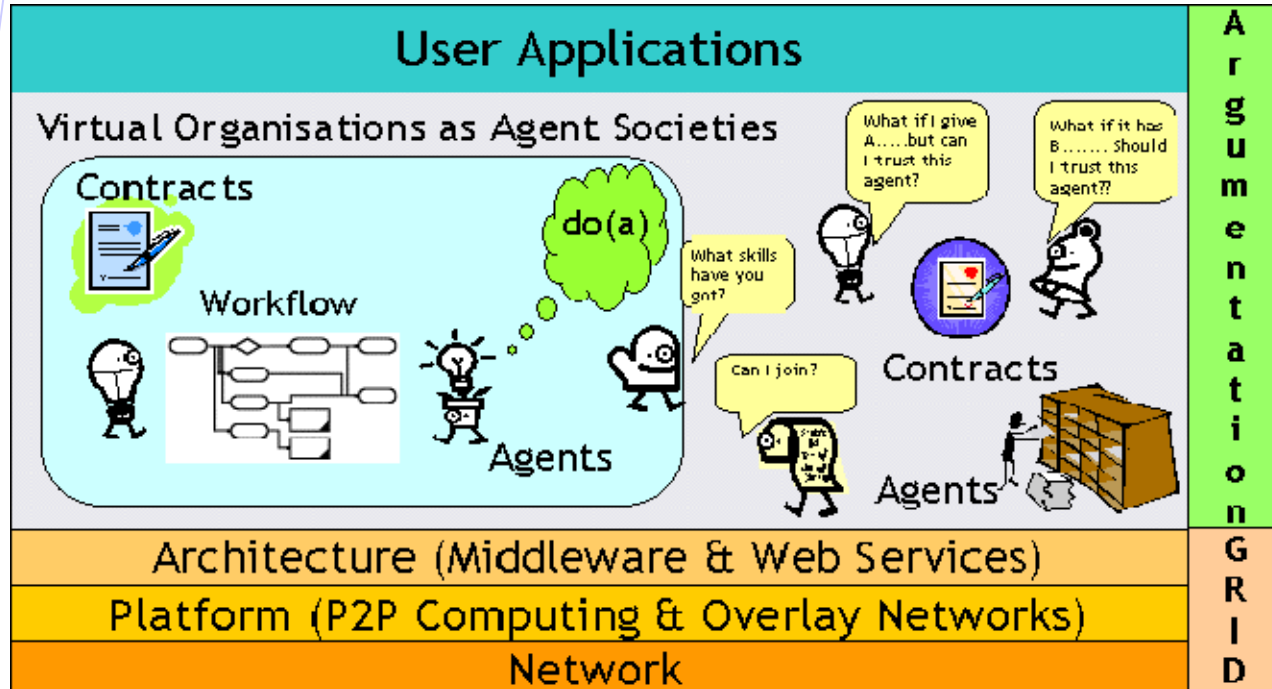
Maria Grammatikou

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



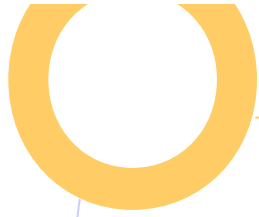
Goals

- ⇒ 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**





Main Objectives

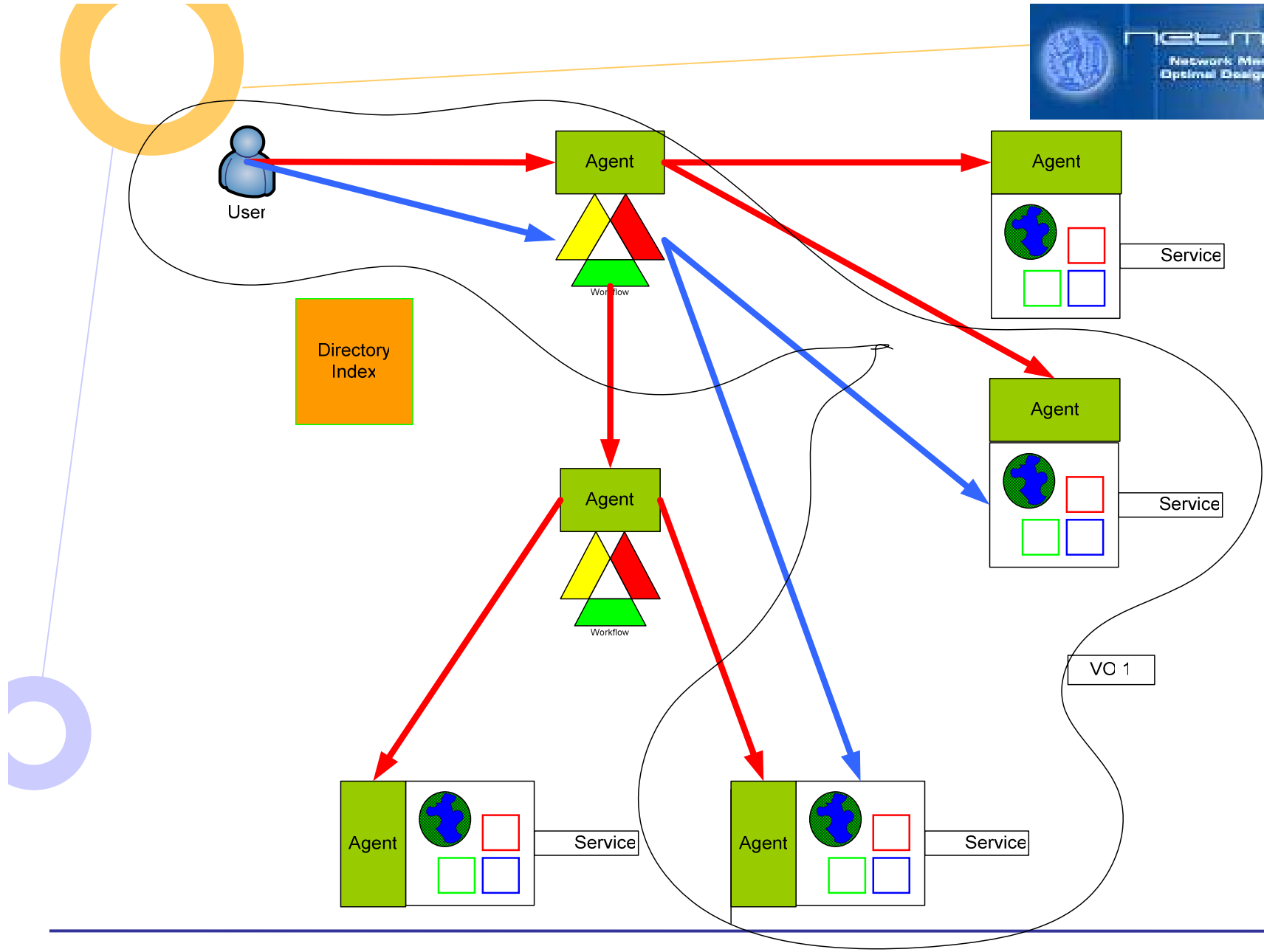


- **To identify concrete e-business scenarios for the grid**
 - **To specify format of the state of agents populating the grid, by specifying agents'**
 - ⇒ **knowledge, including internal representation of workflows**
 - ⇒ **goals**
 - ⇒ **plans**
 - ⇒ **preferences**
 - ⇒ **utilities/benefits assigned 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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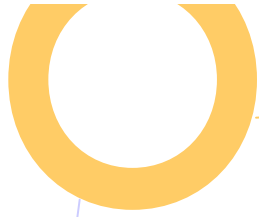
Argugrid Goals

- **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.



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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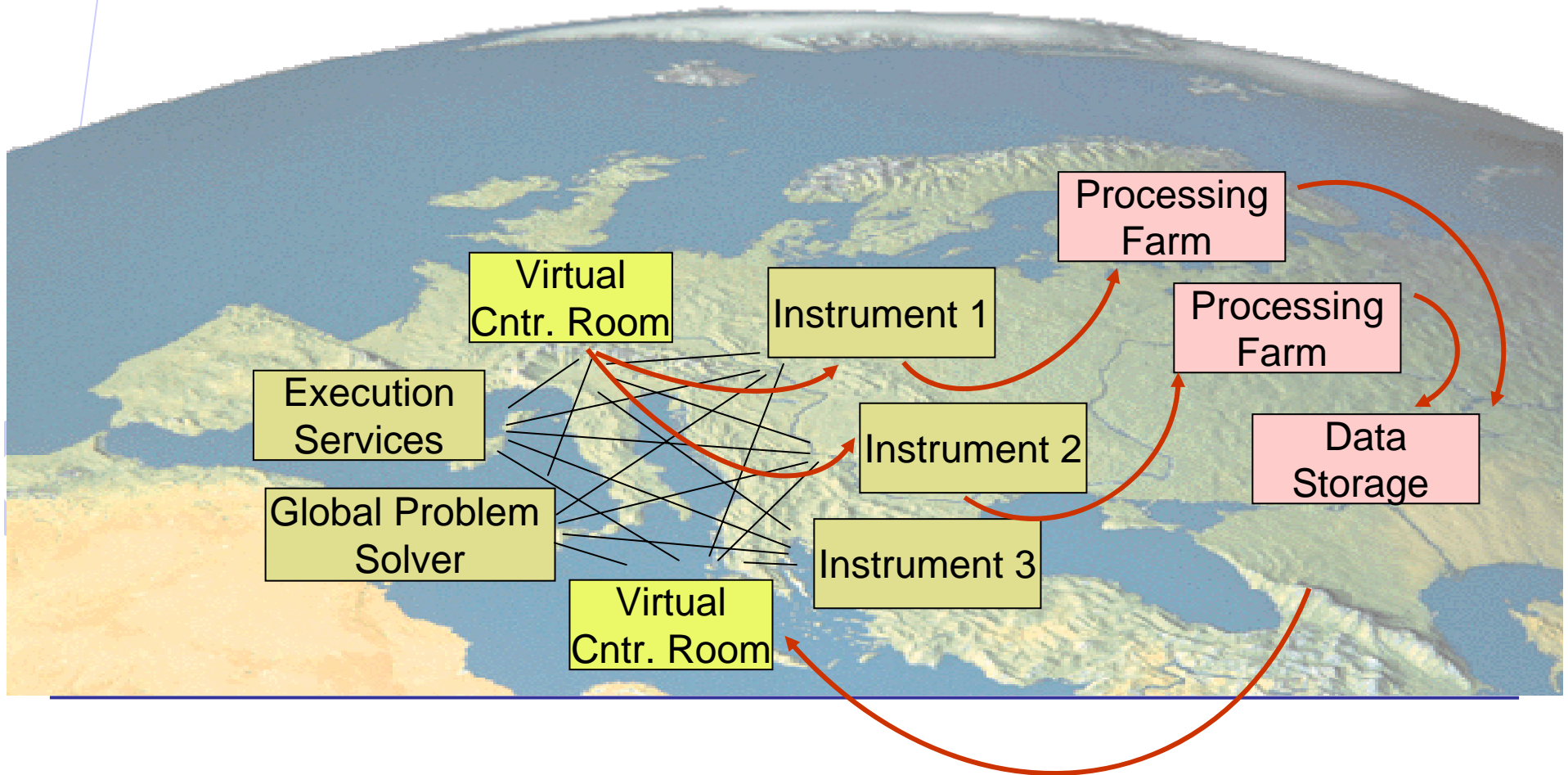
Participants



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

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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