



EGTD

Brussels, 19 September 2006

ARGUGRID

(ARGUmentation as a foundation for the semantic GRID)

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Innovation Aspects:

New model for Programming the Semantic Grid based upon Argumentative Agents

- **Argumentation: logic-based process for the interaction of arguments for/ against conclusions (AI)**
- **Argumentation to support:**
 - ⇒ **the reasoning of agents over resources/ services:**
 - ⇒ Objective/Goal Oriented service description
 - ⇒ Capability/preference specification
 - ⇒ **the inter-agent negotiation process:**
 - ⇒ Conflict resolution/Convincing
 - ⇒ Preference and benefit analysis
 - ⇒ Collaborative decision making
 - ⇒ **the dynamics of VOs:**
 - ⇒ the formation phases in the life of a VO,
 - ⇒ the definition of workflows and contracts in VOs,
 - ⇒ the resolution of disputes amongst agents and VOs
 - ⇒ the identification of trust level of agents and VOs.



End Results

- **Semantic service composition environment**
 - ⇒ relate resources/semantic grid-services, workflows, contracts, and agents.
- **Agent-based Grid platform**
 - ⇒ combine P2P computing and overlay networks;
 - ⇒ build upon GRIA
- **Agent and Virtual Organisation models**
 - ⇒ support **agent** reasoning and decision making;
 - ⇒ support dynamic **VO** formation
 - ⇒ support (semi-)autonomous dynamic **workflow** agreement and **contract negotiation** processes;
 - ⇒ facilitate **dispute resolution** in contract violation;
 - ⇒ model **trust** and its role in agent reasoning and VO operation.
- **Classes of practical applications**
 - ⇒ e-market places
 - ⇒ e-business for earth observation



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