Cooperative Systems in Heterogeneous Environments (COSYS)

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Scope

The deployment of many applications in distributed systems is often underpinned by cooperative schemes. These are required to address the pressing need to harness and marshal resources across dynamic and heterogeneous environments. Cooperative systems create spaces where entities can interact with each other and their environments, and provide services in order to help achieve specific goals. They are characterised by their level of distribution, the underlying mode of interaction and the degree of autonomy of the entities. Client-server architectures, P2P systems, GRID systems and multi-agent systems (MAS) identify different models of cooperative behaviour.

Within the scope of cooperation, architectural frameworks in e-commerce, e-government, e-learning and computer supported cooperative work (CSCW) have been successfully introduced to generate synergy between humans and systems. While hypermedia and personalisation systems represent specific instances of direct adaptation, software agents have ushered in proxy interventions on behalf of users. It is in pervasive environments that cooperation between different entities is finding its full expression; symbiotic relationships are being embedded and seamless transitions initiated and sustained.

Effective cooperation demands that autonomous entities and systems overcome their environmental heterogeneity and resolve their syntactic and semantic differences. By adhering to common abstractions and models the participating entities are insulated from the complexity of the environments of their protagonists. This facilitates the unfolding of processes such as data and system integration, coordination of behaviour, resource access and sharing, and participation in complex activities.

In managing the differences between entities, systems and environments a range of methods and techniques were introduced in order to support interoperation and facilitate semantic interoperability. Resource and process management, configuration, adaptation and negotiation define a wide spectrum of cooperation, from reactive behaviour to proactive intervention. These tasks are being enhanced by ontologies, context awareness and adaptivity.

Topics

The track seeks original contributions on cooperative behaviour and cooperative systems related but not limited to the following topics:

- Resource management and brokering
- Data and process mediation
- Personalisation and recommendation systems
- Implicit and explicit profile generation
- Role of mediation
- Ontologies and ontology mapping
- Arbitration and negotiation
- Hypermedia systems in cooperation
- Context-awareness
- Self-configuration and adaptivity
- Autonomous and emergent behaviour
- Service management
- Heterogeneity management
- Aggregation of cooperative services
- Security, trust and reputation
- Patterns of cooperative behaviour
- Formal aspects of cooperation
- Information management models
- Policy management in cooperative systems
- Protocol management
- Models and model transformation
- Domain specific languages (DSL)
- Load sharing
- Cooperation in ubiquitous and pervasive environments.
- Cooperation in social and P2P community systems
- Mobile contexts for cooperation
- Architectural frameworks
- Cooperative systems in e-science, e-commerce, e-government and e-learning
- Case studies and experiences of cooperative systems

Important Dates

- Submission deadline: September 7, 2011
- Author notification: October 12, 2011
- Camera-ready copies: November 2, 2011