ICT

Action IC0801
Agreement Technologies

2008 - 2012

Action participants:
COST countries: BE, CH, CY, DE, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MT, NL, PL, PT, RO, SE, SI
Non-COST institutions from: Argentina, Australia, Brazil, Mexico, UAE

Chair of the Action: Sascha Ossowski, ES, sascha.ossowski@urjc.es
Grant holder institution: CETINIA, University Rey Juan Carlos, ES
COST Science Officer: Gian Mario Maggio, gmmaggio@cost.esf.org

www.agreement-technologies.eu

Mission:

The overall mission of the Action is to support and promote the harmonisation of nationally-funded high-quality research towards a new paradigm for next-generation distributed systems based on the notion of agreement between computational agents.

Working Group 1: *Semantics*

This WG explores novel ways for the semantic alignment of ontologies taking into account the current interaction state that agents are involved in. It studies the logical relations between ontologies, knowledge-bases, sets of non-monotonic rules (or any integrated combination of these) that are relevant for aligning and merging theories in meaning-preserving ways.

Working Group 2: *Norms*

The WG tackles the problem of how to specify normative systems so that they may be properly implemented and one may reason about them. Reasoning about the system is necessary for the designer of the system to assure that it has adequate properties and for (the designer of) those agents whose interactions will be regulated to assure that they conform to the rules. Reasoning about the normative system may also be necessary at run-time because complex multiagent systems usually need dynamic regulations.

Working Group 3: *Organizations*

The WG explores techniques of virtual organizations to specify how to solve a complex task by a number of agents. The agents participating in an organization can form teams for the solution of a task within the scope of the organizational objectives. The particular organization of the group of agents will thus be the answer to the complexity of the problem. The WG will be concerned with the development of conceptual models, architectures, methodologies, and tools.

Working Group 4: *Argumentation & Negotiation*

The WG investigates decision-making processes so as to develop a variety of agreement management methods to try and reach satisfactory agreements, good enough with respect to the needs and requirements of agents. The WG looks into frameworks that integrate argumentation in negotiation, so as to supply the negotiating parties with additional information and help them convince each other by adequate arguments.

Working Group 5: *Trust*

Trust is a critical prerequisite of any agreement process. When there is uncertainty about the behaviour of the signatories of an agreement trust is essential. Trust helps to reduce the complexity of decisions that have to be taken in the presence of many risks. The WG departs from traditional approaches for security management in several ways, as trust can be built based on a range of different kinds of evidence, each having different strength and reliability.

Objectives:

- *Joint Research*: to promote innovative and pragmatic joint research across the community fractions related to Agreement Technologies in different COST member states, and worldwide

- *Interdisciplinary Research*: to promote interdisciplinary research in the field of Agreement Technologies aimed at a robust understanding of the notion of agreement among computational entities

- *Early integration of young researchers:* to promote a rapid integration and sustained involvement of early-stage researchers in the community building process

- *Capacity Building*: to promote high-quality teaching in all aspects related to the Agreement Technology paradigm

- *Awareness*: to raise awareness of the emerging field of Agreement Technologies technology among the target groups of the Action

- *Early Adoption*: to encourage the early adoption of Agreement Technologies and applications in industry.