

COST

Domain Committee "ICT"

COST Action IC0801

Start Date: 17 October 2008

Agreement Technologies

MONITORING PROGRESS REPORT

Reporting Period: *from 31 July 2009 to 30 June 2010*

This Report is presented to the relevant Domain Committee.
It contains three parts:

- I. Management Report prepared by Grant Holder***
- II. Scientific Report prepared by the Chair of the Management Committee of the Action***
- III. Previous versions of the Scientific Report; i.e., part II of past reporting periods***

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

Executive summary (max.250 words):

Agreement Technologies refer to computer systems in which autonomous software agents negotiate with one another, typically on behalf of humans, in order to come to mutually acceptable agreements. This Action aims at coordinating national efforts on a new paradigm for next generation distributed systems, based on the concept of agreement between computational agents. During YR2, the Action has successfully achieved the objectives of promoting joint and interdisciplinary research towards the emerging paradigm of Agreement Technologies, as well as fostering capacity building and the involvement of early-stage researchers in the field.

I. Management Report prepared by the Grant Holder

I.A. COST Action Fact Sheet

- **COST Action IC0801** – Agreement Technologies
- **Domain:** Information and Communication Technologies
- **Action details:**

CSO Approval: 18/06/2008
Entry into force: 07/08/2008

End date: 16/10/2012
Extension:

- **Objective:**

To coordinate national efforts on a new paradigm for next generation distributed systems, based on the concept of agreement between computational agents

- **Parties:** list of countries and date of acceptance

Belgium (01/10/2008)	Hungary (07/08/2008)	Portugal (10/12/2008)
Croatia (15/03/2010)	Ireland (07/08/2008)	Romania (05/12/2008)
Cyprus (22/10/2008)	Israel (26/01/2010)	Slovenia (05/12/2009)
Estonia (10/12/2008)	Italy (21/10/2008)	Spain (07/08/2008)
Finland (18/06/2009)	Luxembourg (21/10/2008)	Sweden (27/10/2008)
France (01/10/2008)	Malta (intention)	Switzerland (21/10/2008)
Germany (07/08/2008)	Netherlands (13/10/2008)	United Kingdom (07/08/2008)
Greece (22/09/2008)	Poland (11/06/2009)	

- **Other participants:**

- Universidad Nacional del Sur – Bahía Blanca – Argentina
- University of Technology – Sydney – Australia
- Instituto de Informatica da UFRGS – Porto Alegre – Brazil
- Universidad Autonoma Metropolitana – Cuajimalpa – Mexico
- British University in Dubai – United Arab Emirates
- Swinburne University of Technology – Melbourne – Australia
- City University of New York – U.S.A.

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- **Action Web site:** <http://www.agreement-technologies.eu>
- **Grant Holder Representative:** Rafael van Grieken, rafael.vangrieken@urjc.es
- **Working Groups:**
 - WG1: Semantics
 - WG2: Norms
 - WG3: Organizations
 - WG4: Argumentation & Negotiation
 - WG5: Trust

I.B. Management Committee member list

• COST Participants:

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Simon Parsons	U.S.A	parsons@sci.brooklyn.cuny.edu



I.C. Overview activities and expenditure

2009-2010 Budget

Total Action Budget: 114.000 €

II. Scientific Report prepared by the Chair of the Management Committee of the Action, describing results achieved during the Action operation in this period, in no more than 3 pages (the report is “cumulative”). All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended scientific reports, proceedings of workshops, seminars or conferences may be provided separately as an annex to this report, and should be referenced in the report.

II.A. Innovative networking

- *Innovative knowledge resulting from COST networking through the Action. (Specific examples of Results vs. Objectives)*
- *Significant scientific breakthroughs as part of the COST Action. (Specific examples)*
- *Tangible medium term socio-economic impacts achieved or expected. (Specific examples)*
- *Spin off of new EC RTD Framework Programme proposals/projects. (List)*
- *Spin off of new National Programme proposals/projects. (List)*

Two Management Committee meetings were scheduled for YR2 of the Action in order to supervise the implementation of its networking strategy, as well as to define its policy for future activities:

- December 15th, 2009, in Ayia Napa, CY
- June 5th, 2010, in Heraklion, GR

The operational coordination of the Action has been carried out by the Core Group, through email communication and, where necessary, Skype audioconferences. A key decision was to foster discussions and interactions on topics “at the fringes” of various WGs. To this respect, an increased involvement in the Action of researchers from the Semantic Web community was considered to be of particular importance. The minutes of these meetings and conferences are accessible through the private area of the Action website (<http://www.agreement-technologies.eu/private-area>).

In general, the Action’s web site is its foremost means of dissemination. A completely renewed version went online in September 2009 at <http://www.agreement-technologies.eu/>. Besides general information on the Action’s scientific and management structure, different resources provided by the Action can be accessed through this site, such as progress reports, STSM application and reimbursement forms, a tailorable Powerpoint presentation of the Action, Action poster and flyer, Action logos, etc. A specific section promotes the involvement of new researchers and institutions in the Action, giving specific information on how to participate in its activities, and how to propose new activities. There are sub-sites for each of the Action’s WGs, providing WG specific information (objectives, members, etc.) and resources (blogs, mailing lists, etc).

A list of the Action’s current, future, and past activities (workshops, training schools, STSMs, courses, and related events undertaken by liaison projects) is available through the “Activities” section of the website. During YR2, the following activities have been carried out:

- First Agreement Technologies Training School at EASSS (August 2009 in Torino, IT)
- Argumentation day at MALLOW (September 2009 in Torino, IT)
- Workshop on Deontic Logic in CS (December 2009 in Luxembourg, LU)
- Second Joint Working Group Workshop (December 2009 in Ayia Napa, CY)
- Workshop on Formal Models of Norm Change (January 2010 in Amsterdam, ES)
- Interdisciplinary Workshop on Artificial Intelligence and Social Neuroscience (February 2010 in Barcelona, ES)
- Workshop on Trust and Privacy on the Social and Semantic Web at ESWC (May 2010 in Heraklion, GR)
- Third Joint Working Group Workshop (June 2010 in Heraklion, GR)

At some of these events an Action presentation was given, some included special sessions dedicated to the Agreement Technologies paradigm, and some were organised entirely by our Action (in particular, the Joint WG workshops). In addition to the above events, which were co-funded by the Action (see Section I.C of the present report), the website lists a set of additional events that requested the Action's label: these are usually workshops whose topics are related to the aims and scope of the Action, and which were therefore permitted to use its "label" (e.g. show the Action logo on their websites); however, they do not receive any financial contribution from the Action. The minutes and slides of all these events are accessible through the Action website.

II.B. Inter-disciplinary networking

- *Additional knowledge obtained from working with other disciplines within the COST framework. (Specific examples)*
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide scientific impacts. (Specific examples)*
- *Evaluation of whether the level of inter-disciplinarity is sufficient to potentially provide socio-economic impacts. (Specific examples)*

The WGs bring together researchers from the different target communities of the Action. For instance, scholars from disciplines such as philosophy, logics, law, engineering (ICT), psychology, social sciences, linguistics, or cognitive science are participating actively in the WGs on norms and organizations.

In addition, many of the events mentioned in the previous section fostered networking across disciplines. The *interdisciplinary workshop on linking artificial intelligence with social neuroscience*, held from February 18th-19th, 2010, in Barcelona, constitutes a good example of these activities. The workshop gathered around 40 people in a relaxed atmosphere. Arcadi Navarro (UPF, ES) discussed the biological basis of cooperation and strongly argued of the genetic basis as the explanation of differences in behaviour. Along this line of work, Adolf Tobeña (UAB, ES) spoke about a psychopharmacology of agreement. A very interesting viewpoint was defended by Christian Keysers (U Groningen, NL) who argued that mirror neurons play a fundamental role in agreement-making as they are key in the process of 'putting yourself in the position of the other'. Henry Prakken (U Utrecht, NL) and Mike Wooldridge (U Liverpool, UK) talked about the expressive power of argumentation and logic formalisms to represent and reason about agreements. Rosemarie Nagel (UPF, ES) argued that game theory is a good tool to support rational decision-making. Jordi Sabater (CSIC, ES) focused on cognitive models of trust as a basis for the management of agreements, and van Lange (VUB, BE) talked about the influence of generosity and empathy on negotiation. Further information on this event can be found here: <http://www.agreement-technologies.eu/all/workshop/359>. In the context of this and other interdisciplinary events supported by the Action, opportunities for project applications under the FP7 FET scheme have been discussed.

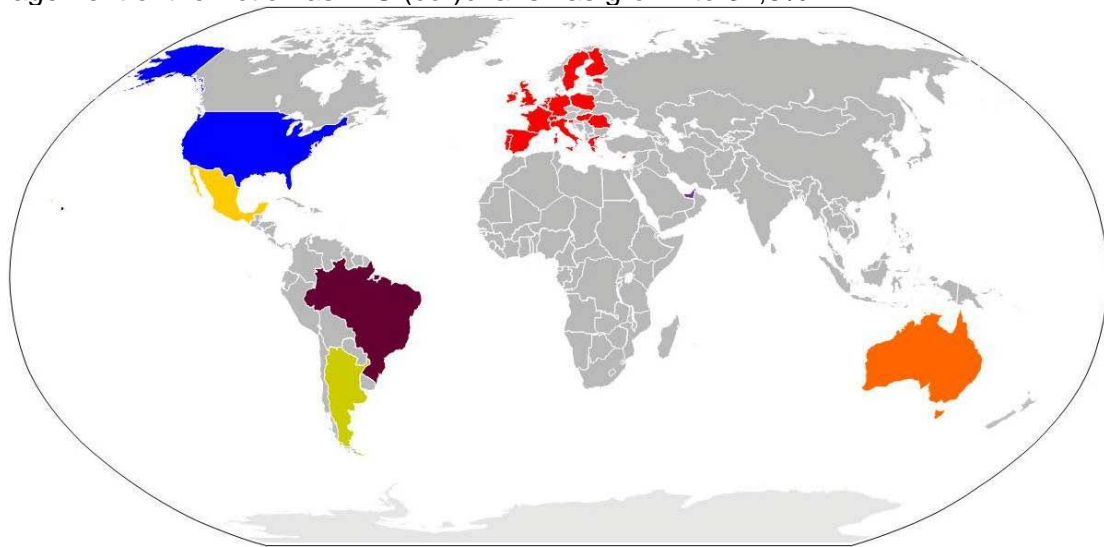
During YR3, the Action intends to continue its focus on interdisciplinary networking. To this respect, the Interdisciplinary Workshop on norm compliance planned for July 2010 in Florence, Italy, is most noticeable.

II.C. New networking

- *Additional new members joining the Action during its life.*
- *Total number of individual participants involved in the Action work. (Number of participants. Give % of female and of Early Stage Researcher participants)*
- *Involvement of Early Stage Researchers in the Action, in particular with respect to STSMs, networking activities, and Training Schools. In addition, justification should be provided if less than 4 STSMs were carried out during the year.*

- *Involvement of researchers from outside of COST Countries. (Number of participants from non-COST Countries approved by the CSO. Give % of such participants from countries with reciprocal agreements. Specify their contribution)*
- *Advancement and promotion of scientific knowledge through publications and other outreach activities. (Number of publications and other outreach activities that resulted from COST networking through the Action. Complete list should be given in an annex)*
- *Activities and projects with COST network colleagues.*
- *The capacity of the Action members to raise research funds.*

23 COST countries as well as 7 institutions from 6 non-COST countries are currently members of the Action (see map below). Not only did 4 new countries join the Action during YR2, but several countries nominated additional MC members and substitutes, giving rise to an MC of currently 54 delegates (including substitutes); a fact that underlines the increased interest in, and the growing impact of the Action among its target communities. All in all, the Action counts on over 100 members, of which approximately one half are ESRs and 20% are female. A complete list is available at the WG sub-websites at <http://www.agreement-technologies.eu/>. Please notice that, although we did not achieve a significant increase in the ratio of female Action members, the percentage of female researchers involved in the management of the Action as WG (co-)chairs has grown to 37,5%.



The Action's visits programme has been extraordinarily successful during YR2. 21 STSM have been approved (at the time of writing this report some of them are still ongoing), whose origins and destinations cover a wide spectrum of institutions from the Action's member countries (see <http://www.agreement-technologies.eu/activities/stsm>). The associated costs (1800€ per STSM on average) exceeded the initially budgeted funds for STSMs in about 10.500€, but thanks to a 10.000€ top-up of the Action's budget for YR2 granted by the COST office all STSMs that were relevant to the Action could be granted. All STSM during YR2 have been carried out successfully so far – their final reports are available through the aforementioned URL. It should be noted that 48% of the beneficiaries of STSMs were female researchers and 74% ESRs, so the programme meets expectations with regard to gender balance and the promotion of young colleagues. To this respect, it is also worth mentioning that the 1st Agreement Technologies Training School, as part of EASSS'09, attracted a significant number of ESRs. Besides the expenditures for lecturers, several travel grants were given to students.

At the end of YR1, five Institutions from non-COST countries had joined the Action:

- Argentina: Universidad Nacional del Sur. Represented by *Carlos Chesñevar*
- Australia: University of Technology Sydney. Represented by *John Debenham*
- Brazil: Universidade Federal do Rio Grande do Sul. Represented by *Ana Bazzan*
- Mexico: Universidad Autónoma Metropolitana. Represented by *Christian Lemaitre*
- United Arab Emirates: British University in Dubai. Represented by *Iyad Rahwan*

During YR2, two additional non-COST institutions countries came aboard the Action:

- Australia: Swinburne University of Technology. Represented by *Ryszard Kowalczyk*
- USA: City University of New York Represented by *Simon Parsons*

Carles Sierra (ES) performed a research visit to the University of Technology Sydney (AUS) under the Action's STSM programme. Under the same programme, Alexandros Belisiotos (UK) and Martin Caminada (LU) visited the British University in Dubai (UAE). Carlos Chesñevar from Universidad Nacional del Sur (AR) will participate in the Crete WG workshops and MC meeting as an invited expert. Sascha Ossowski (ES) is participating in a project proposal submitted by Swinburne University of Technology (AUS) to the Australian Research Council. Dr Hiroshi Hosobe, National Institute of Informatics, Tokyo, participated in the WG3 meeting at Cyprus (without Action funding). Finally, it is worthwhile pointing to the fact that, as we did for the Budapest WG workshops co-located with AAMAS-2009, several paper authors from the EWSC-2010 conference (with which our Crete meeting is co-located) have been invited to participate in our joint WG workshop to be held on June 4th in Heraklion. This includes a number of early-stage researchers from non-COST countries. The joint WG workshop also includes a special session ("Agreement Technologies community meeting") geared towards the needs of ESRs, so as to capture the experiences and expectations of this collective.

A number of publications are related to, or have been produced by, the activities of the Action's WGs. A list is available on the Action website (<http://www.agreement-technologies.eu/resources/paper-clearinghouse>). In this context, two papers may be highlighted that are based on the results of the panel sessions held at the Action's joint WG workshop in December 2009 in Cyprus (<http://www.agreement-technologies.eu/box/posts/476>), and that shall be published by the journal "The Knowledge Engineering Review" (KER). In much the same way, a number of research projects in the field of Agreement Technologies have been granted to Action members (see Action website). The approval of at least two national projects (in Switzerland and Spain) was directly conditioned by the existence of the COST Actions and the results of its activities.

The Action has further shaped its liaisons with the COST Actions IC0602 ("Algorithmic Decision Theory") and IC0702 ("Combining Soft Computing Techniques and Statistical Methods to Improve Data Analysis Solutions"). The Actions' chairs held a coordination meeting at the APC in Santander in June 2009. As a result, representatives of IC0602 and IC0702 will attend the Action's next WG workshop and MC meeting, to be held in June 2010 in Crete, contributing not only to networking but also to scientific activities.

II.D. Self evaluation

Indicate in no more than 1 page what, in the opinion of the MC, were the main successes, drawbacks (if any) and the key difficulties encountered (if any).