

COST

Domain Committee "ICT"

COST Action IC0801

Start Date: 17 October 2008

Agreement Technologies

MONITORING PROGRESS REPORT

Reporting Period: *from 1 July 2010 to 30 June 2011*

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 YR3, 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*

Austria (20/01/2011)	Hungary (07/08/2008)	Romania (05/12/2008)
Belgium (01/10/2008)	Ireland (07/08/2008)	Serbia (20/01/2011)
Croatia (15/03/2010)	Israel (26/01/2010)	Slovenia (05/12/2009)
Cyprus (22/10/2008)	Italy (21/10/2008)	Spain (07/08/2008)
Estonia (10/12/2008)	Luxembourg (21/10/2008)	Sweden (27/10/2008)
Finland (18/06/2009)	Malta (11/02/2011)	Switzerland (21/10/2008)
France (01/10/2008)	Netherlands (13/10/2008)	United Kingdom (07/08/2008)
Germany (07/08/2008)	Poland (11/06/2009)	
Greece (22/09/2008)	Portugal (10/12/2008)	

- **Other participants:**

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

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II. Scientific Report

II.A. Innovative networking

The Action's Management Committee meetings aim at supervising the implementation of its networking strategy, as well as to define its policy for future activities. During YR3, the autumn/winter meeting of the MC was held in Paris, FR, on December 15th, 2010. The spring/summer meeting is scheduled for July 14th 2011, co-located with IJCAI-2011, and is thus technically part of YR4. 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, and to pay particular attention to models of "trust and reputation". As a result, the Paris joint WG workshops were held in collaboration with the FP7 FET project "LiquidPub", so that the relation between these topics with the remaining fields of the Agreement Technologies paradigm could be explored with contributions both from within and from outside the community. The minutes of these meetings and conferences are accessible through the private area of the Action website (<http://www.agreement-technologies.eu/private-area>).

The Action's web site (<http://www.agreement-technologies.eu/>) has been its foremost means of dissemination. During YR3, a Wiki functionality was added to the site, and care was taken to adequately update and maintain its content. Besides general information on the Action's scientific and management structure, different resources provided by the Action are accessible through this site, such as progress reports, various 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). It should be noted that during YR3 the Action paid special attention to foster the scientific involvement of its members in several events organised by other communities (e.g. as keynote speakers), so as to present the most relevant results obtained in the WGs to a broader audience.

During YR3, the following main activities were carried out in line with the Action's workplan

- *SEE-MAS: South-Eastern European Summer School on Multi-Agent Systems* (July 2010 in Bucharest, RO)
- *Interdisciplinary Workshop on Norm Compliance* (July 2010 at the European University Institute in Florence, IT)
- *Panel on the uses of Argumentation in Agreement Technologies* at the COMMA conference (September 2010 in Brescia, IT)
- Dissemination at the *MALLOW Federated Workshops* (September 2010 in Lyon, FR)
- Dissemination at the *ABC:MI Workshop* (October 2010 in Wisla, PL)
- *Fourth Joint Working Group Workshops* (December 2010 in Paris, FR)
- *Interdisciplinary Workshop on Norm Emergence* (February 2011 in Barcelona, ES)
- *DALT: International Spring School on Declarative Agent Languages and Technologies* (March 2011 in Cesena, IT)
- *LAF: London Argumentation Forum* (March 2011 in London, UK)

A complete list of the Action's current, future, and past activities (workshops, training schools, STSMs, courses, and related events undertaken by liaison projects), including events carried out under the Action label is available through the "Activities" section of the website.

At some of the aforementioned events, invited talks and lectures were given by Action members so as to disseminate its results, and some included special sessions or courses dedicated to the Agreement Technologies paradigm, but the majority of them was organised entirely by our Action. In addition to the above events, which were supported financially 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. to show the Action logo on their websites); however, they do not receive any financial contribution from the Action. The minutes and slides of all events are accessible through the Action website.

II.B. Inter-disciplinary networking

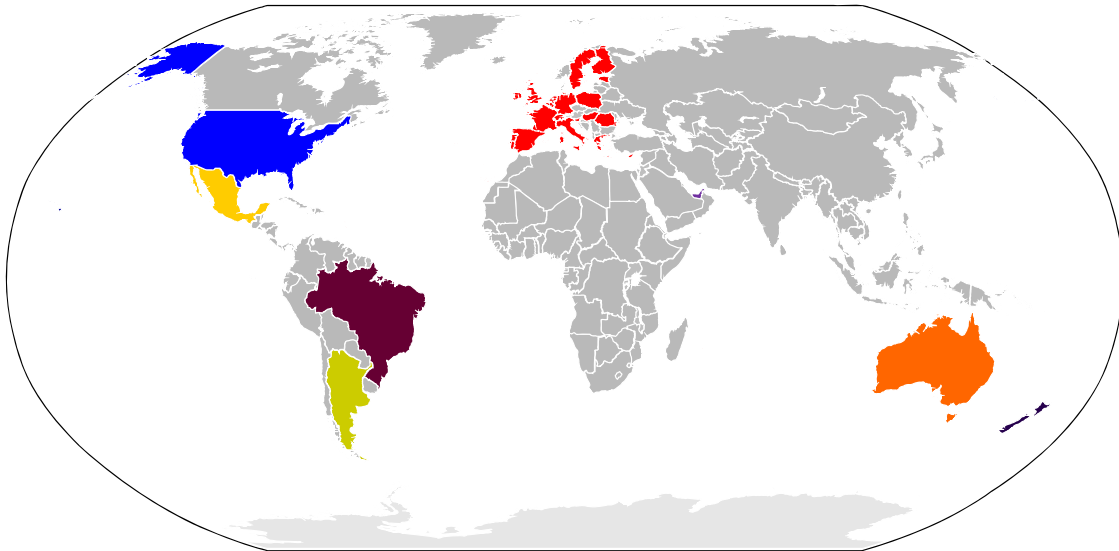
The WGs bring together researchers from the different target communities of the Action. Scholars from disciplines such as philosophy, logics, law, engineering (ICT), psychology, social sciences, linguistics, or cognitive science are participating actively in several of our WGs.

In addition, many of the events mentioned in the previous sub-section fostered networking across disciplines. The *interdisciplinary workshop on norm compliance*, held on July 6th, 2010, at the European University Institute in Florence, IT, constitutes a good example of these activities. The workshop aimed at developing a shared framework for understanding "norm compliance", i.e. the process enabling an external request or command to be obeyed. Scholars from cognitive science, deontic logic, anthropology, law, social sciences, computer science, philosophy and experimental economics had the opportunity to tackle difficult problems and discuss theories and results about norm compliance, trying to exceed the boundaries of the single disciplines. Special attention was devoted to the role played by methodologies and tools, including experiments on norm compliance with humans, psychological and anthropological investigations, but also computational and simulation models on the subject matter. To further an inter-disciplinary discussion, every presentation was commented by a discussant coming from a different discipline, who summarised the main theses of the papers and then offered hints on how a cross-fertilization between the two domains could advance knowledge on the topic. The authors had then some minutes to reply, followed by a general discussion.

The collaboration with the FP7 FET project "LiquidPub" in the framework of the Action's joint WG workshops held on December 14th and 15th in Paris, FR, had a strong interdisciplinary focus as well. Several position papers on the topic of trust and reputation were submitted before the meeting by researchers with background from several disciplines. Critical comments regarding these contributions were exchanged with the help of an online tool developed within the LiquidPub project, and served as the basis for the final discussion at the workshop.

II.C. New networking

25 COST countries as well as 8 institutions from 7 non-COST countries are currently members of the Action (see map below). 3 new countries joined the Action during YR3 and contributed new members to the MC, which currently comprises 58 delegates (including non-COST members and substitutes). There was also a significant increase in WG membership: all in all, the Action now counts over 150 members. Furthermore, despite its already significant size and advanced state of execution, the Action is still growing and attracting new members in COST countries and worldwide, showing that its sustained dissemination effort is achieving the desired impact within its target communities. While the percentage of ESRs among Action members is satisfactory (largely above 50%), unfortunately the Action has not yet managed to significantly increase the percentage of female researchers among its members.



Even though the Action's STSM programme was already very intense during YR2, we have managed to sustain and further increase this success: the number of visits during YR3 has risen another 57% to 33 STSMs (62 considering the entire lifetime of the Action). The origins and destinations of STSMs cover a wide spectrum of institutions from the Action's member countries (see <http://www.agreement-technologies.eu/activities/stsm>). The associated costs exceeded the initially budgeted funds for STSMs, but thanks to a 13.200€ top-up of the Action budget for YR3 conceded by the COST office, as well as shifts from other cost categories, all STSMs that were relevant to the Action could be granted. All STSMs during YR3 have been carried out successfully so far – their final reports are available through the above URL.

At the end of YR2, seven 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*
- Australia: Swinburne University of Technology. Represented by *Ryszard Kowalczyk*
- 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*
- USA: City University of New York, Brooklyn College. Represented by *Simon Parsons*

During YR3, one additional non-COST institution came aboard the Action:

- New Zealand: University of Otago. Represented by *Stephen Cranefield*

Simon Parsons (USA), Ryszard Kowalczyk (AUS) and Stephen Cranefield (NZ) joined the MC meeting and joint WG workshops held in December 2010 in Paris as invited experts, the latter two under the COST reciprocal scheme with Australia and New Zealand. As a result of Swinburne University of Technology being a non-COST partner of the Action, members of the COST actions are participating in a new project "Responsive automated negotiation in open distributed environments" led by this institution and funded by the Australian Research Council. Amanda Vidal from IIIA-CSIC (ES) performed a very successful RSTSM visit to the group of Carlos Chesñevar at our non-COST institution *Universidad Nacional del Sur* in Argentina.

During YR3, the Action maintained its successful strategy for the integration of ESRs. To this respect, it should be noted that 84% of the beneficiaries of STSMs were ESRs. Furthermore, the London Argumentation Forum (LAF) organised by WG4 of our Action was also especially geared towards ESRs (see report on the website). The student grants offered by the Action for its SEE-MAS and the DALT training schools helped attracting a significant number of ESRs to these events. Finally, as in previous years, the joint WG workshops in Paris included 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>). During YR3 the overall structure of the Agreement Technologies Handbook is being defined, whose publication is planned close to the end date of the Action.

During YR3, we have further shaped our liaisons with other COST Actions, especially with IC0602 ("Algorithmic Decision Theory") and IC0702 ("Combining Soft Computing Techniques and Statistical Methods to Improve Data Analysis Solutions"). Together with representatives from these and other COST Actions, we contributed to an Exploratory Workshop organised by the COST office in November 2010 in Brussels, with the aim of exploring future funding opportunities in the field of "Decision Sciences and Technology".