

**SIXTH FRAMEWORK PROGRAMME
PRIORITY 7
Citizens and Governance in the Knowledge Based Society**



SPECIFIC TARGETED RESEARCH OR INNOVATION PROJECT

Publishable Final Activity Report

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Project Coordinator: **Mario Paolucci, PhD**

Project Coordinator Organization Name: **CNR**

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1 Project Execution



the eRep logo.

1.1 Project objectives

The project is aimed at providing theory-driven and empirically backed up guidelines for designing reputation technology. An inter- and multi-disciplinary consortium provides the project with an innovative approach, agent-based computational instruments, to be used for (a) theory-building, namely formulating hypotheses concerning the generation, spreading and impact of reputation under given social and technological conditions; (b) testing these hypotheses on the grounds of cross-methodological experiments; (c) transferring knowledge thanks to both a computational proof-of-concept system and the guidelines specified in the White Book, which is the main deliverable of the project. Immediate impact of the project is to contribute to the governance of electronic institutions (e.g. auction sites, discussion forums, recommendation sites, social networks, etc.). Future scientific added value of the project is expected to consist in advances of reputation theory and technology for multi agent systems. Additional social impact is foreseen in terms of theoretical and computational instruments for experimenting upon the effects of reputation on firms' networking.

The project will provide theory-driven and empirically tested guidelines for designing technology of online reputation reporting and promoting reputation-based governance. A significant impact is expected on

- Trustability and governance of e-Institutions, which in turn impacts on
- Success of ICT technologies for commercial transactions and online networking,
- Competitiveness of (a) markets, (b) cultural and geographic areas which they represent, and (c) agencies they involve.
- Competitiveness of (a) markets, (b) cultural and geographic areas which they represent, and (c) agencies they involve.

1.2 Contractors involved

- **ISTC** Istituto di Scienze e Tecnologie della Cognizione, Consiglio Nazionale delle Ricerche, Italy (coordinator)
- **RuG** University of Groningen, Marketing Institute, Netherlands
- **IIIA-CSIC** Institut d'Investigació en Intelligència Artificial, Spanish National Scientific Research Council, Spain
- **UBT** University of Bayreuth, Dept. of Information Systems, Germany

1.3 Co-ordinator contact details

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1.4 Work performed and end results

All the partners contributed to the project effort, producing many tangible results. To illustrate them, we start from the list of deliverables from the project specifications, all produced on schedule:

Deliverable No	Deliverable name	Wp no.	Lead participant	Estimated person-months	Nature	Dissemination level	Delivery date
D1.1	Existing systems review and typology	1	CNR-ISTC	15+2*	R	PU	6
D5.1	Web Site	5	CNR-ISTC	4	O	PU	6
D2.1	Reputation oriented to e-Institutions	2	IIIA-CSIC	30	R	PU	12
D5.2	Report to the Commission (I)	5	CNR-ISTC	4	R	PU	12
D2.2	e-Institution reputation software – Alpha Version	2	IIIA-CSIC	45+4*	P	PP	17
D1.2	Theoretical advances	1	CNR-ISTC	25	R	PU	18
D3.1	Cross-methodological findings (I)	3	RuG	30	R	PP	22
D2.3	e-Institution reputation software – Beta Version	2	IIIA-CSIC	45+4*	P	PP	24
D5.3	Report to the Commission (II)	5	CNR-ISTC	4	R	PU	24
D5.4	Workshop organization	5	CNR-ISTC	4	R + O	PU	24
D3.2	Real findings	3	RuG	30	R	PP	27
D4.1	Demonstrative "proof-of-concept" Grid prototype	4	UBT	38+12*	P	PU	28
D3.3	Cross-methodological findings (II)	3	RuG	34+5*	R	PP	31
D5.5	Final conference	5	CNR-ISTC	6	R + O	PU	33
D4.2	White Book on Reputation	4	UBT	37+14*	R	PU	36
D5.6	Final Report	5	CNR-ISTC	4	R	PU	36

The two main end results are the final conference (ICORE 2009) and the Reputation booklet, a lean, easily accessible presentation of the main project results that is being distributed to stakeholders. The conference and the booklet are detailed in the dissemination section.

1.4.1 Methodologies and approaches employed

The project results have been obtained by the application of a cross disciplinary methodology; work on Reputation involves many different disciplines – something also testified by the broad range of disciplines that contributed to the ICORE conference, illustrated in more detail in the next section. Thus, we had to engage several research institutions, covering diverse disciplines; including cognitive science (CNR-ISTC), organisation science and economy (RuG), and computer science and ICT (IIIA-CSIC and UBT). All partners have shown competitive research skills in the fields of their competence, such as agent and multi agent theory and technology and agent-based social simulation.

The constant contact with research peers was warranted by the participation to conferences and workshops.

During the project, we investigated several research questions connected to the usage and the effects of reputation in different environments. These environments range from eCommerce, where humans interact with each other, to hybrid systems, and to fully automated systems like the Internet of Service with software agents interacting. Users' interaction in a social environment, mediated by designed software tools, is a complex system that a single discipline cannot hope to understand or improve. On the other hand, communication problems between the different disciplines could arise, making the task even more demanding. To achieve purposeful communication, we leaned on a set of recommendations coming from Information Systems Research Frameworks.

The cross disciplinary and cross methodological foundation of the project allowed us to investigate the research question in many complementary ways. The usage of reputation in eCommerce environments was investigated within behavioural science. Laboratory experiments and social simulation studies allowed us to answer research questions on the design of policies, as the ones that can be found in the booklet. These findings helped us, on the other side, to propose reasonable policies for the Internet of Service environment. This research could be done leaning on a solid knowledge base, consisting in the findings of reputation theory. Moreover, some hypotheses deduced from reputation theory have received further support and specification from the project work, bringing about a refinement of the theoretical work on reputation.

Our research was characterized by continuous feedback between the development of models or software and their evaluation. This feedback loop permanently allowed us to integrate findings from behavioural research and social simulations in the design of our technology. Knowledge from both fields, empirical findings and simulation, was used to refine the software prototype and, on the other hand, to enhance the general knowledge base.

1.4.2 Achievements of the project to the state-of-the-art

Improvements on the state-of-the art is measurably quantified by the number and kind of scientific publications produced by the project partners that are to be found at the end of the document. Here we present an overview of improvements on the state of the art; we will group them under thematic areas:

1. *Theoretical improvements.*

The theoretical reflection on the nature of Reputation and its application to online systems, especially auction systems and the Internet of Services has been carried on for all the project duration. New design questions have been matched and recommendations issued, both on the base of simulated data and on the base of experimental results. For an easily accessible presentation, the Reputation booklet part A (An ancient artefact for modern challenges - Image and reputation: two levels of information - Benevolence or prudence) can be consulted. A more detailed account can be found in Deliverable 1.2 – Theoretical Advances.

2. *New Data*

To clarify the context in which reputation acts, to support our hypotheses, and to draw new hypotheses, we produced both simulated and experimental data. These data, and the tools used to produce them (see next section), are now available to the research community and to the industry community.

The experimental data results are collected and commented in the deliverables of Workpackage 3: D3.1 Cross-methodological findings (I), D3.2 Real findings, D3.3 Cross-methodological findings (II). These deliverables are restricted for access to partners and to the Commission; access to data for research purposes can be requested to the partner responsible for data collection (RuG). The data is still being processed and will be published in aggregated form after project completion.

Simulation results are available in deliverable D4.1 Demonstrative "proof-of-concept" Grid prototype (the "proof-of-concept- Grid prototype is available as an open source project under GPL under <http://sourceforge.net/projects/erepsim>), and in several published papers (see the complete list at the end), including

- S. König, T. Balke, W. Quattrociocchi, M. Paolucci, T. Eymann: "On the Effects of Reputation in the Internet of Services". International Conference on Reputation (ICORE'09), Gargonza, Italy 2009.
- W. Quattrociocchi, M. Paolucci. "Cognition in Information Evaluation. The effect of Reputation in Decisions Making and Learning Strategies for discovering good sellers in a base market", European Workshop on Multi Agent Systems 2007 (Eumas 07), Hammamet, Tunisia 2007.

3. *New tools*

While development of tools has been driven by project objectives, a number of interesting tools that we applied to produce the data and to realize simulations have been made available to the general public. Specifically, we have implemented and released:

- a) an ontology for comparison of different reputation models (Isaac Pinyol, Jordi Sabater-Mir, Guifré Cuní (2007) How to Talk About Reputation Using a Common Ontology: From Definition to Implementation. TRUST@AAMAS '07)
- b) Improvement on the RePage module and on the simulation scenario in which this is used. (J. Sabater-Mir, M. Paolucci (2007). On Representation and Aggregation of Social Evaluations in Computational Trust and Reputation Models, Int. J. Approx. Reason.
- c) Integration between the Electronic Institutions tool and the Grid Simulator (D2.3 e-Institution reputation software – Beta Version, see <http://e-institutions.iiia.csic.es/>)

- d) A new lightweight simulator of grid services with reputation and trust (Stefan König, Tina Balke, Walter Quattrociochi, Mario Paolucci, Torsten Eymann (2009): "On the Effects of Reputation in the Internet of Services". Proceedings of the International Conference on Reputation (ICORE'09), 2009, Gargonza, Italy.)

The lightweight simulator of grid services is available under GPL and is further developed as an open source project under <http://sourceforge.net/projects/simis/>

We are glad to remark that the tools developed at point c) have been applied with success to the data collection in experiments and have been presented at the Demo session at AAMAS 2009, the most important conference in the field of agents, winning the prize for the best student demo.

1.4.3 Impact of the project on its industry or research sector

Industry Sector

Recommendations to the Industry sector are summarized in the Reputation Booklet (see the section on dissemination). As planned in the project, the booklet presents the main project results in an accessible form, drawing from them a set of recommendations and instructions as to how to design reputation technology, based upon controlled cross-methodological experimental evidence. The booklet is destined to the scientific community at the European scale and beyond, to policymakers and stakeholders.

With specific focus on the online communities and social networks and their distributed nature, the theory of reputation accounts for cognitive problems such as the problem that individuals might be lying when telling about the trustworthiness of others. Based on the knowledge derived in the project we are therefore able to offer theory-driven consultation for decision makers that are trying to regulate simulated societies as internet environments or collaboration platforms or telecommunication networks.

Research sector

The impact of the project for the research sector is testified by the large number of papers; the full list is reported at the end of this report. In addition, the project managed to successfully organize the first ICORE conference, setting the first stone towards the recognition of reputation studies as an independent field of research, at the crossroad of several existing disciplines.

Finally, the excellence of methods and tools used in the project has been recognized by the community, as demonstrated by the prize for the best student demo at the AAMAS 09 conference, attributed to the set of tools used by our group to collect experimental data. (Ismel Brito, Isaac Pinyol, Daniel Villatoro, Jordi Sabater-Mir (2009): "HIHEREI: Human Interaction within Hybrid Environments", Proceedings of The Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS'09), Budapest, Hungary, 2009.)

1.4.4 Project web sites

Three project web sites are currently active and will be maintained after project completion. The public web site (www.tinyurl.com/eRepProject) where the deliverables are available to the public, a private wiki for collaborative writing between partners, and the official website of the Final Conference of eRep project: <http://www.reputation09.net/> from where the conference proceedings, published by the ISTC-CNR (ISBN 978-88-85059-27-6) can be downloaded.

2 Dissemination and use

Knowledge gained in these areas has been presented and explained to the general public through the project's web site, www.tinyurl.com/eRepProject, that will continue after the project has been completed. Many technical papers have been published in respected journals and presentations given at many conferences and workshops.

The two main project results, that can be used to summarize achievements, are the Reputation Booklet (ISBN 978-88-85059-26-9) and the Final Conference (ICORE '09).

In addition to these, we have also organized a workshop, *Trust in Agent Societies* at AAMAS 08 (D5.4 Workshop organization), and we presented our work to the main industry conference in the field.

Finally, a large number of scientific papers supported by the project have been accepted in international workshops, conferences and journal.

2.1 Dissemination Events Short description

The dissemination activities of the project also include:

- a new Special Interest Group (SIG) on *Reputation* in the European Social Simulation Association aimed at the organisation of workshops, exchanging and comments on papers, working on joint proposals and projects. (<http://www.essa.eu.org/simulation-wiki/ReputationSIGWiki>)
- ESSA08: The Reputation Special Interest Group within the European Social Simulation Association (ESSA) held a panel at the Fifth ESSA annual conference in September 2008, Brescia, Italy
- Sebastian Hudert: The 23rd Open Grid Forum (OGF23), Hosted by the Barcelona Supercomputing Center, Co-Located with the BEinGRID Industry Days, Barcelo Sants Hotel, Barcelona, Spain, June 2-6, 2008, Topic: "A Protocol-Generic Negotiation Framework for WS-Agreement"
- Gennaro Di Tosto, Mario Paolucci, *eRep: Social Knowledge for E-Governance*, Discussion Panel at the 11th International Conference on Reputation, Brand, Identity & Competitiveness. Oslo, Norway, May 31 - June 3, 2007.
- a Special Track on Reputation in the TRUST IN AGENT SOCIETIES workshop at AAMAS 2008. (<http://www.istc.cnr.it/T3/events/aamas/trust2008.html>)
- the organization of the first International Conference on Reputation: theory and technology, held in Italy, Gargonza (AR) from 18 to 20 March 2009, with the participation of Prof. Chris Dellarocas (University of Maryland, USA) and Prof. Rosaria Conte (Institute of Cognitive Sciences and Technologies, IT).
- an ad-hoc website for the Final Conference, ICORE 09, the first "International Conference on Reputation: Theory and Technology" intended to provide a ground for the scientific discussion on Reputation Systems, with a perspective on policy and e-Government (<http://www.reputation09.net/>)
- the publication and diffusion of the White Book on Reputation.

Detailed description of major dissemination events follows.

2.1.1 The White book on Reputation

Project partners decided to produce a final document in a form that would be accessible to the general public. The result of this effort is a lean booklet, written in a non technical language: the white book on Reputation, or, as it was nicknamed, the reputation booklet.

The reputation booklet, whose official title is Social Knowledge for eGovernance: Theory and Technology of Reputation (ISBN 978-88-85059-26-9), has been published by ISTC-CNR and presented during the ICORE09 Conference. The downloadable version can be accessed on the Project Website at www.tinyurl.com/eRepProject, where all the Project Deliverables are available to the public. In addition, the booklet has been made available on open publication systems of large access: *issuu*¹ and *scribd*².

The booklet on Reputation is structured on three colours coded reading paths, aimed at the following four potential stakeholders:

- business
- readers interested or involved in local policymaking
- research groups
- readers interested or involved in management of online communities

Presentation of theoretical results and experimental results, as well as the design indications that we deduced from them, are organized in the following structure:

- A. Theory of Reputation
 - A.1 An ancient artefact for modern challenges
 - A.2 Image and reputation: two levels of information
 - A.3 Benevolence or prudence
- B. Research findings
 - B.1 How Reputation mechanism can reduce Internet fraud
 - B.2 On the Effects of Reputation in the Internet of Services
 - B.3 When false reputation spreads
 - B.4 How the research was carried out: the process
 - B.5 How the research was carried out: the technology
- C. Interpretation
 - C.1 Opportunities and Challenges in a Connected World
 - C.2 A theory for understanding and driving reputation dynamics in the society
 - C.3 Reputation for business and institutions
 - C.4 Reputation theory and technology for research groups

The booklet, already made widely available electronically, has been printed in 400 copies and is being distributed to research groups, industry, and policy makers.

¹ http://issuu.com/mario.paolucci/docs/erep_booklet

² <http://www.scribd.com/doc/14525270/eRep-Theory-and-Technology-of-Reputation>

2.1.2 The ICORE Conference

The First International Conference on Reputation: Theory and Technology ICORE09 was organized by ISTC- CNR with the support of all the eRep Consortium Partners with the aim of disseminating the eRep Project results while stimulating the debate on the research achievements. During the Conference also the booklet “Social Knowledge for eGovernance: Theory and Technology of Reputation” (D4.2) was presented and spread among participants. The conference saw the participation of two invited speakers: Rosaria Conte, ISTC-CNR, cognitive and social scientist, with a special interest for the study of positive social action (altruism, cooperation and social norms), and reputation-based social regulation; Chris Dellarocas, Center for Complexity in Business at the Robert H. Smith School of Business of the University of Maryland, whose research examines the implications of consumer-generated and social media for trade, marketing, operations and corporate strategy using a combination of game theoretic, econometric and simulation methods, participating to ICORE09 with the talk: The Many Faces of Reputation: Towards a Science of Reputation System Design.

A special session for presentation of the eRep project was organized, with all partners presenting results divided by workpackage. Dr. Ian Perry, Principal Administrator of the European Commission and Officer of the eRep Project gave his contribution introducing the project.

Themes

The first International Conference on Reputation: Theory and Technology provided a ground for the scientific discussion on Reputation Systems, with a perspective on policy and e-Government.

Themes of the conference included:

Theory-building, namely formulating hypotheses concerning the generation, spreading and impact of reputation under given social and technological conditions; theory of reputation as an intelligent artefact; testing of hypotheses on the grounds of cross-methodological experiments; planning and implementing innovative, theory-based Reputation Systems; accounting for mechanisms, properties and social dynamics of reputation; allowing a theory-driven design of emergent technologies of reputation for solving societal problems; innovative applications of reputation technologies in business networks, ICT networks and electronic markets

Rationale

The role of reputation as a partner selection mechanism started to be appreciated in the study of cooperation in the early eighties. However, despite important advances in the study of cooperation networks, no explicit theory of the cognitive ingredients and processes which reputation is made of was provided, and Reputation is still viewed simply as an attribute in the decision for partner selection.

Reputation, instead, deserves a full role as a scientific topic, with focus on its specificities, as the potential as preventive social knowledge, and the selective mechanism of transmission.

More recently, reputation and gossip started to become crucial in many fields of the social sciences, for example organisation science and management, governance, business ethics, etc. where the importance of branding became visible. In these domains, reputation soon become an intangible asset. The economic reading of the issue at hand implied an extension of reputation to super-

individual levels, requiring a still wanting conceptual clarification and interdisciplinary investigation.

In addition, reputation is increasingly at the centre of attention in many fields of science and domains of application, including but not reduced to economics, organisations science, policy-making, (e-)governance, cultural evolution, social dilemmas, socio-dynamics, innovation, etc. However, there is a great deal of ad hoc models, and little integration of instruments for the implementation, management and optimisation of reputation. On one hand, entrepreneurs and administrators deem it possible to manage corporate and firm reputation without contributing to or accessing a solid, general and integrated body of scientific knowledge on the subject matter. On the other hand, software designers believe they can design and implement online reputation reporting systems without investigating what the properties, requirements and dynamics of reputation in natural societies and why it did evolve for.

In the view of the organisers of this conference, reputation is an old artefact for answering a new challenge, and that is the regulation of complex, global, electronic societies. Innovation demands that the potential of old instruments are fully understood and exploited, in order to be incorporated into novel, intelligent technologies.

Participation and Papers

The conference was attended by 31 scientists from all Europe. The number of submitted papers to the conference amounted at 32, while the accepted resulted to be 19. We invited contributions from all the fields of reputation science, from philosophy to experimental economics, from game theory to computer science and sociology.

Here follows the list of accepted papers:

- Vincent Buskens, Werner Raub and Joris van der Veer. Embedded Trust: An Experiment on Learning and Control Effects
- Eva van den Broek, Lucas Molleman and Martijn Egas. Direct and Indirect Reciprocity- an experiment
- Riccardo Boero, Giangiacomo Bravo, Marco Castellani and Flaminio Squazzoni. Why Bother with What Others Tell You? An Experimental Data-Driven Agent-Based Model
- Lucio Biggiero. Reputation networks within inter-firm networks
- Florent F. Garcin, Boi Faltings and Radu Jurca. Aggregating Reputation Feedback
- Riccardo Boero, Giangiacomo Bravo, Marco Castellani, Francesco Laganà and Flaminio Squazzoni. Third Party Reputation in Repeated Trust Games
- Stefan König, Tina Balke, Walter Quattrociocchi, Mario Paolucci and Torsten Eymann. On the Effects of Reputation in the Internet of Services
- Walter Quattrociocchi and Mario Paolucci. Reputation and Uncertainty. A fairly optimistic society when cheating is total
- Christoph Niemann, Stefan König and Torsten Eymann. Minor Change Is Not Enough: Analysis of Ebay's Reputation Model
- Isaac Pinyol and Jordi Sabater Mir. Integrating Image and Reputation Information in BDI agents
- Guido Boella, Marco Remondino and Gianluca Tornese. Simulating the Human Factor in Reputation Management Systems for P2P Networks
- Yann Krupa, Jomi Fred Hubner and Laurent Vercoeur. Extending the Comparison Efficiency of the ART Testbed

- Chris Dellarocas, Ravi Bapna and Sarah Rice. The Impact of Seller Reputation on Simultaneous Auctions of Identical Goods: Theory and Experimental Evidence
- John Debenham and Carles Sierra. Information-Based Reputation
- Rense Corten and Karen Cook. Cooperation and Reputation in Dynamic Networks
- Alona Labun, Rafael Wittek, Christian Steglich and Rudi Wielers. Where does reputational power in organizations come from?
- Lea Ellwardt, Rafael Wittek and Rudi Wielers. Antecedences of Gossip about Managers: The Role of Trust in Management and Colleagues
- Mark Kramer and Arnon Rosenthal. A Reputation System for Uncertain Assertions
- Erika Rosas and Xavier Bonnaire. From Hazardous Behaviours to a Risk Metric for Reputation Systems in Peer to Peer Networks

Relationship with the eRep project

The eRep project was the main sponsor and organizer of the conference. Clear exposition of the eRep logo and name was obtained in all the conference materials.

In addition, the results of the eRep project were presented during a special session, organized with a presentation by the responsible partner for each workpackage. Dr. Ian Perry, Principal Administrator of the European Commission and Officer of the eRep Project was invited and joined us during the conference, introducing the project.

Organization

The organization of the Conference required a strong commitment of all the ISTC-CNR group, plus the involvement of all the partners. In terms of financial resources, the Conference cost was around 15.000 Euros, not including personnel costs.

2.1.3 Published Papers

2009

Modeling and Simulation of Reputation

1. R. Conte, "Rational, goal-governed agents", In Encyclopedia of complex systems, Springer. (forthcoming)
2. R. Conte, C. Zaccaria, "Cognizione Sociale per la Governance delle Istituzioni. Uno strumento di indagine", Sistemi Intelligenti, 2009.
3. W. Quattrociocchi, M. Paolucci, R. Conte, "Image and Reputation coping differently with massive Informational Cheating", The 2nd World Summit on the Knowledge Society WSKS 2009, (In Press).
4. W. Quattrociocchi, A. Josang, "Advanced Features in Bayesian Reputation Systems". In TrustBus 2009 ,(In Press).
5. W. Quattrociocchi, M. Paolucci, "Reputation and Uncertainty. A fairly optimistic society when cheating is total", International Conference on Reputation (ICORE'09), Gargonza, Italy 2009.
6. I. Pinyol, J. Sabater-Mir, "Towards the Definition of an Argumentation Framework using Reputation Information", Proceedings of the 12th Workshop on Trust in Agent Societies (TRUST@AAMAS'09), Budapest, Hungary, 2009
7. I. Brito, I. Pinyol, D. Villatoro, J. Sabater-Mir, "HIHEREI: Human Interaction within Hybrid Environments", Proceedings of The Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS'09), Budapest, Hungary, 2009.

8. I. Pinyol, J. Sabater-Mir, "Pragmatic-Strategic Reputation-Based Decisions in BDI Agents", Proceedings of The Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS'09), Budapest, Hungary, 2009.
9. D. Villatoro, J. Sabater-Mir, "Group Recognition through Social Norms", Proceedings of The Eighth International Conference on Autonomous Agents and Multiagent Systems (AAMAS'09), Budapest, Hungary, 2009.
10. D. Villatoro, N. Malone, S. Sen, "Effects of interaction history and network topology on rate of convention emergence", Proceedings of the Third International Workshop on Emergent Intelligence on Networked Agents (WEIN09) 2009.
11. D. Villatoro, J. Sabater-Mir, "Dynamics in the Normative Group Recognition Process", Proceedings of the IEEE Congress on Evolutionary Computation (CEC09) 2009.
12. Stefan König, Isaac Pinyol, Daniel Villatoro, Jordi Sabater Mir and Torsten Eymann: An Architecture for Simulating Internet-of-Services Economies, accepted at the Seventh German Conference on Multi-Agent System Technologies (MATES), Hamburg, Germany.

Grid related publications

13. C. Niemann, S. König, T. Eymann, "Minor Change is not enough: Analysis of Ebay's Reputation Model", International Conference on Reputation (ICORE'09), Gargonza, Italy 2009.
14. T. Balke, "A Taxonomy for Ensuring Institutional Compliance in Utility Computing". Proceeding of the NorMAS Dagstuhl Seminar, Dagstuhl, Germany 2009.
15. T. Balke, T. Eymann, "Using Institutions the Bridge the Trust-Gap in Utility Computing Markets - An Extended "Trust-Game" ". Proceedings of the 9th International Conference on Business Informatics, Vienna, Austria 2009.
16. S. König, T. Balke, W. Quattrociocchi, M. Paolucci, T. Eymann: "On the Effects of Reputation in the Internet of Services". International Conference on Reputation (ICORE'09), Gargonza, Italy 2009.

2008

Modeling and Simulation of Reputation

17. F. Giardini, G. Di Tosto, R.Conte, "A model for simulating reputation dynamics in industrial districts", Simulation Modelling Practice and Theory, 16, pp. 231-241.
18. F. Giardini, G. Di Tosto, R.Conte, "Reputation and Economic Performance in Industrial Districts: Modelling Social Complexity Through Multi-Agent Systems". Proceedings of World Congress on Social Simulation (WCSS-08) George Mason University, Fairfax, USA 2008.
19. T. Balke, "An Extended "Court Game" - Using Institutions to foster Compliance in open Multi-Agent Systems", Proceedings of the Sixth European Workshop on Multi-Agent Systems (EUMAS), 2008.
20. W. Quattrociocchi, M. Paolucci, R. Conte, "Reputation and Uncertainty Reduction: Simulating Partner Selection". In Rino Falcone et al (Ed.), LNAI special issue on "Trust in Agent Societies". Springer 2008
21. W. Quattrociocchi, "Bruce Edmonds, Cesareo Hernandez, Klaus Troitzsch: Social Simulation Technologies, Advances and New Discoveries", Journal of Management and Governance, 219-223. 2008
22. W. Quattrociocchi, M. Paolucci, R Conte, "Dealing with Uncertainty :Simulating Reputation in an Ideal Marketplace", Proceedings of AAMAS Workshop on Trust, Lisboa Portugal, 2008.
23. I. Pinyol, J. Sabater-Mir, "Probabilistic Dynamic Belief Logic for Image and Reputation", Artificial Intelligence Research and Development, CCIA'08, vol. 184: IOS Press, pp. 197-206, 2008.
24. I. Pinyol, J. Sabater-Mir, "Integrating Image and Reputation Information in BDI Agents", Proceedings of the Sixth European Workshop on Multi-Agent Systems (EUMAS), Bath, UK, 2008.
25. I. Pinyol, J. Sabater-Mir, "Cognitive Social Evaluations for Multi-Context BDI Agents", Proceedings of The 9th Annual International Workshop "Engineering Societies in the Agents World" (ESAW'08), Saint-Etienne, FRANCE, 2008.
26. D. Villatoro, J. Sabater-Mir, "Norm Selection Through Simulation in a Resource-Gathering Society ", Proceedings of 21st European Simulation and Modelling Conference (ESM07).
27. D. Villatoro, J. Sabater-Mir, "Towards the Group Formation through Social Norms", Proceedings of the Sixth European Workshop on Multi-Agent Systems (EUMAS08) 2008.

28. D. Villatoro, J. Sabater-Mir, “Mechanisms for Social Norms Support in Virtual Societies”, Proceedings of the Fifth Conference of the European Social Simulation Association (ESSA08) 2008.

Grid related publications

29. S. König, S. Hudert, T. Eymann, M. Paolucci, “Towards Reputation Enhanced Electronic Negotiations for Service Oriented Computing”, in R. Falcone et al. (eds.): TRUST 2008, LNAI 5396, pp. 273–291, Springer, 2008.
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