

# Tutorial on Normative Multi-agent Systems

## EASSS'09

Guido Boella, Leon van der Torre, Xavier Parent

15 April 2009

**Topic:** Normative Multi-agent Systems

**Importance for the field:** The Agentlink Roadmap [4] considers norms as one of the key social notions for the development of agent-based systems. In fact, norms are one of the social notions which are currently obtaining most attention in the researches on the design, development and programming of MAS as testified by several workshops such as: the COIN workshop series [2, 3], the Normative Multi-agent Systems seminar [1], the last two editions of the DEON workshop focusing specifically on MAS and normative systems.

**Intended audience:** PhD students in organizations, electronic institutions (e-commerce and e-government), agent communication, MAS programming.

**Required background knowledge:** None

**Outline of the topic:** The tutorial is structured in a session of lectures and a student session

1 *Lectures:* General introduction on Normative Multi-agent Systems; Introduction concerning the use of social concepts (e.g. organizations, institutions, roles) for modeling and developing agents' interaction; Introduction to the theory of norms with particular focus on norm types (e.g. regulative norms vs. constitutive norms).

2 *Student session:* Students will be interview each other in pairs trying to make their research questions explicit; Teams will be created (e.g. 5 teams of 5 students) where students will select and discuss research questions and possible approaches; Each team will have to present their discussion and a question time will follow.

**Preparation of course material:** The course material will build on the material developed for previous tutorials held at IAT'04 (International Conference on Intelligent Agent Technology), PRIMA'07 (Pacific Rim International Workshop on Multi-Agents) and EASSS'08.

**Tutors and their experience:** Leon van der Torre and Guido Boella have extensive teaching experience. Xavier Parent taught five logic courses at the University of Aix-Marseille I, between 1998 and 2002, and this year he is lecturing on AI at the University of Luxembourg

**Level of the course:** Beginners

**Duration:** 6 hours articulated in 3 slots of 2 hours.

**Special requirements:** None

## References

- [1] G. Boella, L. van der Torre, and H. Verhagen, editors. Normative Multi-agent Systems, number 07122 in Dagstuhl Seminar Proceedings. Internationales Begegnungs-und Forschungszentrum fuer Informatik (IBFI), Schloss Dagstuhl, Germany, 2007.
- [2] O. Boissier, J. Padget, V. Dignum, G. Lindemann, E. Matson, S. Ossowski, J. S. Sichman, and J. Vázquez-Salceda, editors. Coordination, Organizations, Institutions, and Norms in Multi-Agent Systems. Proceedings of ANIREM 2005 and OOP 2005, number 3913 in LNAI, Utrecht, The Netherlands, July 2006. Springer. Revised and selected papers.
- [3] V. Dignum, N. Fornara, P. Noriega, G. Boella, O. Boissier, E. Matson, and J. Vázquez-Salceda, editors. Coordination, Organizations, Institutions, and Norms in Multi-agents Systems. Proceedings of COIN 2006, LNAI, Hakodate, Japan and Riva del Garda, Italy, 2007. Springer. Forthcoming.
- [4] M. Luck, P. McBurney, O. Shehory, and S. Willmott. Agent Technology: Computing as Interaction A Roadmap for Agent-Based Computing. AgentLink, 2005.