

COST Action IC1205 on Computational Social Choice: STSM Report

Applicant: Ulle Endriss
Home institution: ILLC, University of Amsterdam
Home country: The Netherlands
Host: Nicolas Maudet
Host institution: LIP6, Pierre & Marie Curie University (Paris)
Host country: France
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I was hosted for one week by Nicolas Maudet at LIP6, the Informatics Laboratory at Pierre & Marie Curie University in Paris. During this week I collaborated with a large number of Paris-based researchers on several topics that are relevant to the aims of the Action, particularly those being pursued by WG2 (fair division) and WG3 (information merging). The main topics of joint research were the following:

- *Fair division on social networks:* With Yann Chevaleyre (Paris-Nord) and Nicolas Maudet I made significant progress on a longstanding project of ours on the analysis of convergence in distributed resource allocation amongst agents connected via a social network. We were able to obtain a new result on the computational complexity of deciding whether agents can conduct an exchange of resources that not only is in everybody's selfish interest but that will also reduce envy in the system, and we were able to establish bounds on the number of individual deals possible when agents negotiate fair allocations on a social network.
- *Profiles of argumentation systems:* With Elise Bonzon (Paris-Descartes), Stéphane Airiau (Paris-Dauphine), and Nicolas Maudet I initiated a new project on the rationalisation of profiles of abstract argumentation frameworks. The central problem studied is how to construct an explanation for situations in which we are given a set of arguments and the views of several agents regarding the mutual attack relation between those arguments, but in which the agents do not fully agree on this relation.
- *Uncertainty in social choice:* Aurélie Beynier (LIP6) and Sylvia Estivie (Valenciennes) explained their recent work on optimising distributed resource exchanges in multiagent systems under uncertainty, which may lead to a new collaboration in the future. With Jérôme Lang (Paris-Dauphine), Yann Chevaleyre and Nicolas Maudet I furthermore discussed new ideas regarding voting under uncertainty.

Finally, on 31 May 2013 I gave a departmental seminar, entitled *Reduction of Economic Inequality in Combinatorial Domains*, at LIP6, which led to a number of interesting discussions with staff and students at the institute.