

STSM Scientific Report
COST Action IC0801 – WG2: Norms

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Host: Frank Dignum (Universiteit Utrecht)
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Between the 1st of October and the 31st of December I visited the Adaptive Interactive Systems group of the Utrecht University, working with Frank Dignum, Virginia Dignum and Huib Aldewereld. The focus of this collaboration was the research on monitoring and interpretation of events for electronic organisations, advancing on research done previously at Utrecht University and Politechnical University of Catalonia.

This work has been relevant to the advancement of my PhD thesis, focused on monitoring formalisation, design and implementation in electronic institutions. My previous work had been focusing on two aspects: the capture and semantic interpretation of events and the enforcement of electronic contracts.

During my stay in Utrecht, we grounded previous formal work on the *counts-as* operator with a design that was implemented as a *Drools* production system. As a result of this collaboration [1] was presented in the *ESAW 2009* workshop in Utrecht, and [2] was accepted into *AAMAS 2010* main track. A third paper was started before the end of the stay that is to be submitted to a journal.

Another accomplishment was the design and implementation of a stable prototype of an *organisational monitor* that is able to detect the normative state of both regulative norms and constitutive norms. The formalisation of this monitoring process was started during the stay and it was finished shortly after.

Finally, we completed the design of an *event metamodel* that can be used in any kind of organisational process and covers various levels, from brute facts to institutional events, from organisational components to web services. This metamodel can be grounded into different model languages (e.g. XML, binary protocols) and this will allow our organisational monitor to be applied into different domains and/or scenarios.

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- [1] H. Aldewereld, S. Álvarez-Napagao, F. Dignum, J. Vázquez-Salceda. "Engineering Social Reality with Inheritance Relations". (accepted in the workshop "Engineering Societies in the Agents' World" ESAW-09, Utrecht, The Netherlands, November 2009)
- [2] H. Aldewereld, S. Álvarez-Napagao, F. Dignum, J. Vázquez-Salceda. "Making Norms Concrete". (accepted in the AAMAS'2010 conference)