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Scope

This initial draft of a workplan for the Borda-Count Interaction Protocol describes the mechanism and how it can be applied to a high level dialogue structure for FIPA.

The Borda-Count protocol can be described as mechanism that defines in principle, that points are allocated to alternative strategies. In a collection of X alternatives X points will be allocated to the most preferred strategy, X-1 to the next best, and so on down to the least preferred strategy, which is allocated one point. The protocol requires that all voters have to rank their preferences among the X alternatives. The protocol is used then at a central location to add up the allocated points. The preferences are collected centrally to rank the scores given to each strategy, and to select the strategy with the maximum score as the winner. The Borda Count mechanism is identified as the unique voting method to represent the true wishes of the voters.

The work plan can shortly be described in three steps. (Formalization, specification and implementation). The areas that are addressed here are the Semantics TC and the FIPA Architecture Board. With the Semantics Technical Committee the Borda Count Protocol has to be formalized, the next step is to approve the proposed preliminary specification. Improvements can be made during implementation and re-specification.

Problem Statement:

It is claimed that FIPA provides a number of pre-defined high-level protocols, while in fact only the contract net protocol, its iterated version and two auction mechanisms exists. Moreover the Contract Net protocol is the only protocol that is implemented in JADE. [See FIPA Experimental to Standards Workgroup] The problem for FIPA is that there is poor support for dialogue structures by means of Interaction Protocols. Another problem is the difficulty to find paradigmatic structures which can be identified for Agent-based systems. The proposed Borda Count Interaction Protocol contains a common used mechanism that is used in everyday life and is easily mapped and applied in structures for Agent Technology. For the development of more Interaction Protocols a Working Group could be formed, or otherwise this could be an objective in the AUML working group.

Objective:

Semantics, Interoperability, New Interaction Protocol

Technology:

Semantic model for protocol. Interaction Protocol library, Communicative Act library

Specifications Generated:

Generation of FIPA Borda Count Interaction Protocol specification

Plan for Work:

The thesis "F-One Racing-MAS and Borda Count" describes elaborately the work FIPA produced related to Interaction Protocols, introduces the protocol and explains the suitability within FIPA.

The following steps describe the plan for work:

- First step to admit the richness of the protocol and formalization of the Borda Count Interaction Protocol.
- Second step: approving the Interaction Protocol and working to first specification
- Third step: using and implementation of the Interaction Protocol within FIPA platforms. Re-specify the protocol.

Milestones:

Milestone 1: Broader audience picking up the formalization of the Borda Count Interaction Protocol.

Milestone 2: Recognizing the proposal as a preliminary specification.

Future work:

The benefit for FIPA is to accept on a general used Interaction Protocol which is more easily accepted in a broader audience. The Interaction Protocol can be more easily merged with other initiatives.

Future direction:

Applying the Borda count Protocol in an Agentcities project.

Dependencies:

None

List of internal specifications:

Interaction protocol library, Communicative Act library

External bodies:

Web Services and Semantic Web: the Borda Count protocol is a suitable structure to reach an agreement, to sign a contract and to reach consensus upon joint decision making between agents.

Support:

University Maastricht: Communications Research & Semiotics: P. Braspenning and Gabriel Hopmans, Morpheus Software