(b) Build an RDFS ontology for the domain.

(c) Populate the ontology with offerings, expressed in RDF.

(d) Express the selection criteria using nonmonotonic rules.

(e) Run your rules with the RDF/RDFS information using an engine such as DR-DEVICE[7] or DR-Prolog.[8] To do so, you will need to express the rules in the format prescribed by these systems.

2. This advanced project can be carried out by two or three people over the course of a term. The aim is to implement a brokering scenario in a multi-agent environment. Apart from carrying out the steps described in project 5.4, project participants need, among other things, to:

(a) Develop a basic understanding of brokering in multi-agent environments by studying some relevant literature:

K. Sycara, S. Widoff, M. Klusch, and J. Lu. Larks: Dynamic Matchmaking among Heterogeneous Software Agents in Cyberspace. *Autonomous Agents and Multi-Agent Systems* 5, 2 (2002): 173–203.

G. Antoniou, T. Skylogiannis, A. Bikakis, and N. Bassiliades. A Deductive Semantic Brokering System. In *Proceedings of the 9th International Conference on Knowledge-Based Intelligent Information and Engineering Systems*. LNCS 3682, Springer 2005, 746–752.

(b) Choose and familiarize yourselves with a multi-agent system. We have had good experience with JADE.[9]

(c) Decide on the precise messages to be exchanged between agents.

[7] lpis.csd.auth.gr/systems/dr-device.html.
[8] www.csd.uoc.gr/~bikakis/DR-Prolog/.
[9] jade.tilab.com/.