Project (23-11-2007)

Submission Deadline (13-12-2007)

Design an Agent Platform conformant to FIPA Specifications

By now you must have got enough know-how of JADE Agent Platform and its internal agent management and services. So now consider 'FIPA Abstract Architecture Specification' and 'FIPA Agent Management Specification' and Design your own Agent Platform. Aim of the project is using AOSE methodologies for designing agent based applications.

Just skim through both specifications. And use standardized AOSE Methodologies for designing.

FIPA Abstract Architecture Specification:
http://www.fipa.org/specs/fipa00001/SC00001L.html

FIPA Agent Management Specification:
http://www.fipa.org/specs/fipa00023/SC00023K.html

Minimum requirements

1. Complete design of your Agent Platform using GAIA AOSE Methodology

2. Represent agent interaction protocols in UML.
   http://www.auml.org/auml/supplements/Odell-AOSE2000.pdf

   a. Perform Level 1 representation for overall platform.
   b. For 'Level 2' only represent Agent interactions using Sequence Diagrams. And for 'Level 3' consider only AMS agent representation using State-chart diagrams.

3. Do either of the following
   a. A very basic stub/skeleton implementation
      OR
   a. Use role-based modeling method to model FIPA specified roles for Agent Platform
      I.e. Augment the Analysis phase of GAIA with role binding approach proposed here:
      http://www.auml.org/auml/supplements/RoMAS.pdf
      You can also perform role-based modeling first and then proceed to GAIA analysis phase.

      And design your classes in context of Agent-based system.
      http://www.auml.org/auml/supplements/Bauer-AOSE2001.pdf
      I.e. Use UML Class diagrams to specify agent behaviors.

Bonus Question (02 bonus points)

4. Re-modeling the above using MESSAGE UML.
   http://www.auml.org/auml/supplements/Caire-AOSE2001.pdf

   a. There are different concepts and different views involved in this methodology. You should be able to comment on differences between these approaches.

Bonus Question (02 bonus points)

5. Assume your agent platform is distributed over two machines, thus you need mobility and cloning et al services to maintain your agent platform (for instance AMS is cloned on different machines, and these clones move across machines to share information and to keep a coherent view at both machines).

   Model mobility in UML 2.0 activity diagrams.
   http://www.auml.org/auml/supplements/UML2-AD.pdf

Deliverables

a. A Report emailed by deadline (13th December) to ahaseeb@kth.se with Subject "DAIIA07 Project"
b. A 20 min presentation per group. Or a 20 min demo (in-case you chose to perform implementation in task 04.

Time Slots for Presentation/Demo:

Monday 14th December. Time-slots sheet will be up on 8th Floor by the end of this week.