ID2209
Distributed Artificial Intelligence and Intelligent Agents

Project

Nima Dokoohaki

Shahab Mokarizadeh

id2209_teachers@mailman.ict.kth.se

Project of your own choice

- It's possible to propose your own project
- Requirements
  - Subject must be within the boundaries of course.
  - Work load should be equal to project (three weeks of work, or one full week of work)
  - You must reuse the concepts you have learned in labs
    - (agent behaviours, messaging, negotiations, mobility, etc.)
  - Preferrably using JADE environment
    - Other environment possible
- Deadline for proposal:
  - One week from introduction of project

Project Introduction

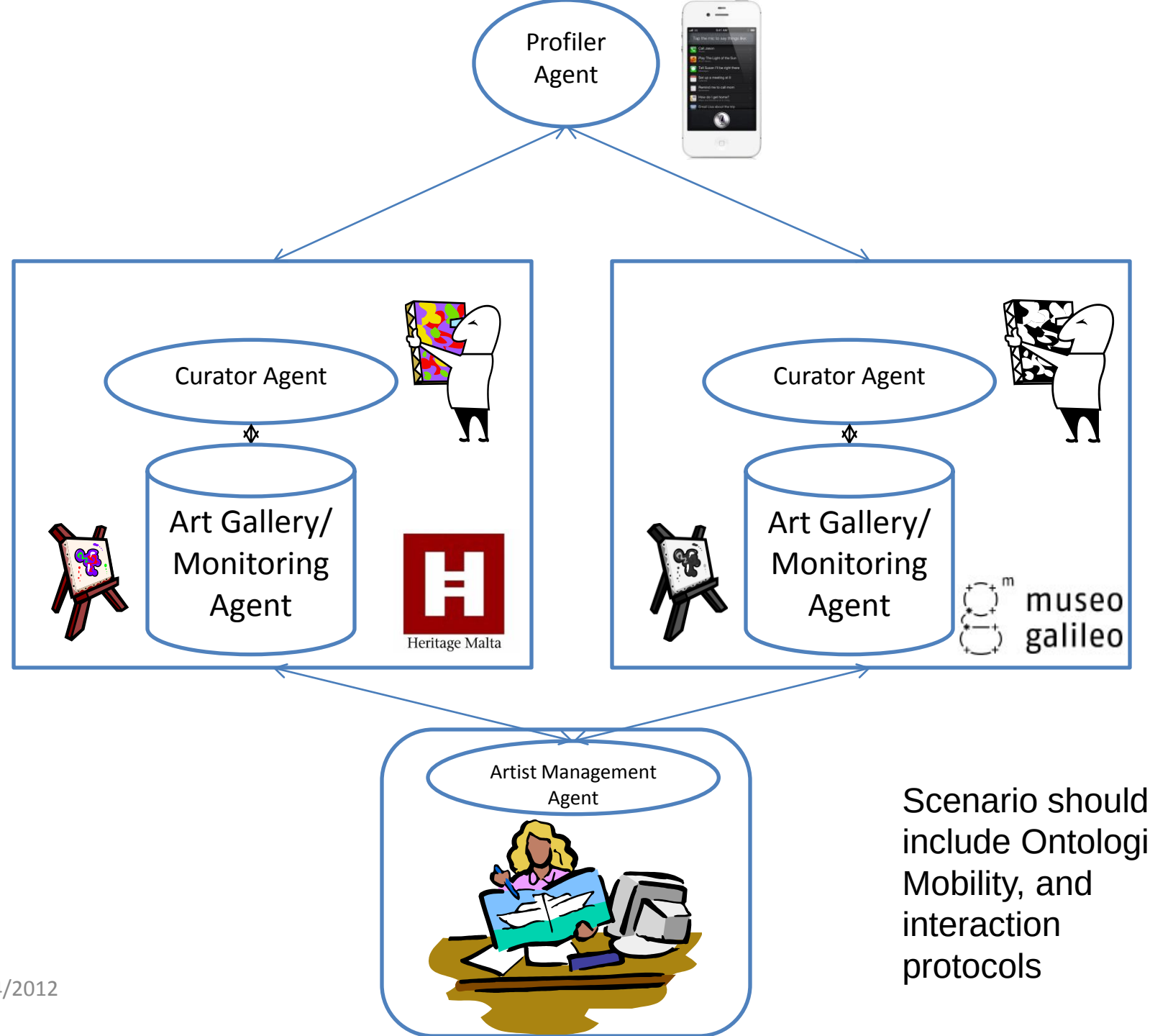
- Topics covered in this session:
  - Agent Oriented Software Engineering (AOSE)
    - Using GAIA AOSE model
    - Using M-UML models
  - Reusing concepts learned throughout home works so far

Materials needed

- Odell et al, “Representing Agent Interaction Protocols in UML“
  - http://www.auml.org/auml/supplements/Odell-AOSE2000.pdf
- Bauer, ”UML Class Diagrams Revisited in the Context of Agent-Based Systems”
  - http://www.auml.org/auml/supplements/Bauer-AOSE2001.pdf
- Yan et al, “romas: a role-based modeling method for multi-agent system “
  - http://www.auml.org/auml/supplements/RoMAS.pdf
- Caire et al, ”Agent Oriented Analysis using MESSAGE/UML ”
  - http://www.auml.org/auml/supplements/Caire-AOSE2001.pdf
- Reference materials:
  - Book + Slides of “Agent Oriented Software Engineering”

Goal

- Objective of the project is to model the following Smartmuseum scenario using GAIA AOSE and Message-UML.



Scenario should include Ontologies, Mobility, and interaction protocols

Task 1

- Task 1. Model your system via GAIA AOSE Methodology

- Heads up ! Tricky part would be modeling mobility

Task 2

- Task 2. Model interactions among agents in UML
  - http://www.auml.org/auml/supplements/Odell-AOSE2000.pdf

Task2

- Task 2.1 Perform Level 1 representation for **overall** System.
- Task 2.2 Perform Level 2 representation of Agent interactions using **Sequence** Diagrams.
- Task 2.3 Perform Level 3 representation of Agent behaviors using **State-chart** diagrams.

Task 3

- Task 3. Use UML Class diagrams to design behavior of your agents. http://www.auml.org/auml/supplements/Bauer-AOSE2001.pdf

Task 4

- Task 4. Model your system using Role based modeling approach http://www.auml.org/auml/supplements/RoMAS.pdf

Task 4

- Task 4.1 Augment the Analysis phase of GAIA with **role binding**
- Task 4.2 In this case, perform role-based modeling first and then proceed to GAIA **analysis phase.**
- Task 4.3 Comment on differences in resulting designs of 4.1 and 4.2.
  - (i.e. Augmenting Analysis phase of GAIA with role-binding against performing role-based modeling as first step to GAIA analysis)

Task 5

- Task 5. Re-model the entire system using MESSAGE UML http://www.auml.org/auml/supplements/Caire-AOSE2001.pdf

Task 6

- Task 6. Compare MESSAGE UML and GAIA
  - Task 6.1 Compare MESSGE UML and GAIA without Role based modeling
  - Task 6.2 Compare MESSGE UML and GAIA with Role based modeling

Deliverables

- Deadline: 3 Dec 2012

- Documented Reports to

nimadokoohaki@gmail.com ,
shahab.mokari@gmail.com

with Subject "DAIIA12 Project".
  - Don't forget to write full names of group members in the email.
- Demo date: 4 Dec