ID2209
Distributed Artificial Intelligence and Intelligent Agents

Project

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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

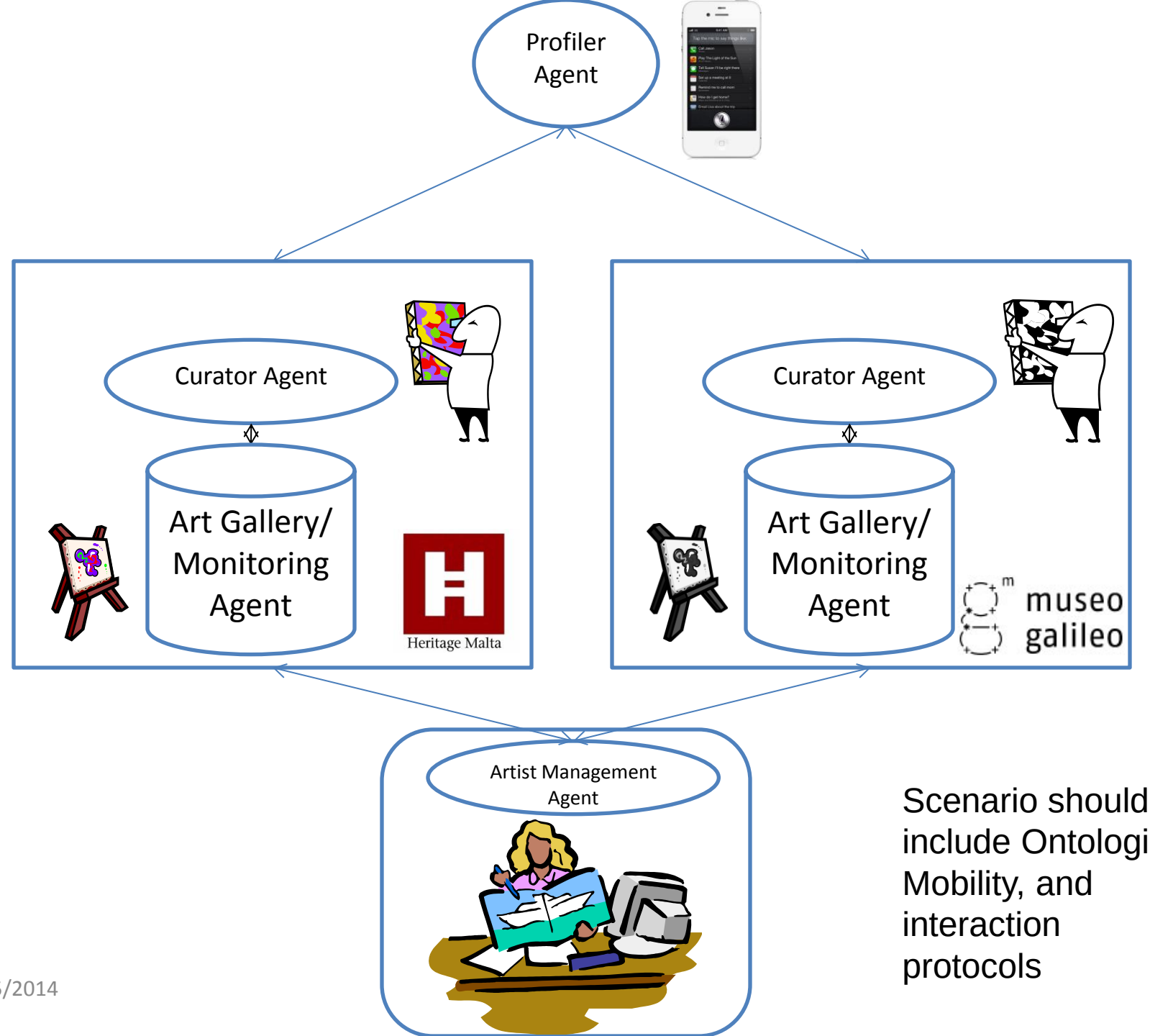
- Topics covered in this session:
  - Agent Oriented Software Engineering (AOSE)
    - Using GAIA AOSE model
    - Using M-UML models
  - Reusing concepts learned throughout home works so far

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
- 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
  - http://www.csc.liv.ac.uk/~mjw/pubs/jaamas2000b.pdf

Task 2

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

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 Perform role-based modeling using RoMAS for the initial task.
- Task 4.2 Comment on differences in resulting designs of 4.1 and GAIA (from Task 1).
  - (i.e. Analysis phase of GAIA against performing role-based modeling as first step to GAIA analysis)

Task 5 JADE and (Other Agent Platforms)

- There are number of implementations of agent platforms which conform to the FIPA Specifications. Perform a comparison of at least 02 other Agent Platforms with JADE.
- Your comparison should comprise of
  - i). Architecture of Platform
  - ii). Services provided by Platform
  - iii). Comparison of implementation of a simple scenario same as Question 2 (i.e. Service Implementation, Service Registration, and Service Discovery)
  - iv). List some notable projects which used that platform.
  - v). your personnel opinion/judgment about the platform as compared to JADE. You can take part iii) as your starting point, and explain the architecture and services the platform provides from a practical point of view.
- Agent Development Kit, FIPA-OS, JACK Intelligent Agents, ZEUS, SAGE … just to name a few other FIPA Complaint implementations. (Feel free to use some other FIPA Complaint Implementation)

Deliverables

- Deadline: 11 December

Demo date: 12 December

- Documented Reports to

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with Subject “DAIIA14 Project”.

  - Don’t forget to write full names of group members in the email.