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| Software Engineering of Distributed Systems, KTH |
| Design an Agent Platform conformant to FIPA Specifications |
| Distributed AI and Intelligent Agents, Project 2007 |

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| Sike Huang, Shanbo Li  2007-12-10 |

## Complete design of your Agent Platform using GAIA AOSE Methodology

### Role Model

|  |  |  |
| --- | --- | --- |
| Role | | Register |
| Description | | It acts as a register and gives AIDs to agents |
| Protocols and Activities | | GenerateAID |
| Permissions | |  |
|  | reads | new AgentRequire |
|  | generates | AID |
| Responsibilities | |  |
|  | Liveness | GenerateAID = AgentLocalName@*hap\_name* |
|  | Safety | true |

|  |  |  |
| --- | --- | --- |
| Role | | Modifier |
| Description | | It acts as a modifier and edit agent description |
| Protocols and Activities | | UpdateAgentDescription |
| Permissions | |  |
|  | reads | AID |
|  | generates | description |
| Responsibilities | |  |
|  | Liveness | newDescription = Description·update |
|  | Safety | true |

|  |  |  |
| --- | --- | --- |
| Role | | YellopageServiceProvier |
| Description | | It behaves like a yellow page |
| Protocols and Activities | | Register, Search, Subscribe |
| Permissions | |  |
|  | reads | agentDescription |
|  | generates | searchResult |
| Responsibilities | |  |
|  | Liveness | GenerateResult = SearchRegistedAgent·filterAgentDescription |
|  | Safety | true |

### Interaction Model

### Agent Model

AMSAgent

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Register Deregister Modifier Searcher

DFAgent

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YellopageServiceProvier

### Service Model

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Service | Inputs | Outputs | Pre-condition | Post-condition |
| Generate AID |  | *AID* | *no same localName* | *true* |
| UpdateAgentDescription | *AID* | *Description* | *AID ≠ nil* | *true* |
| Register | *AID* |  | *true* | *true* |
| Search | *ServiceDescription* | *SearchResult* | *true* | *true* |
| Subscribe | *ServiceDescription* | *SubscribeResult* | *true* | *true* |

### Acquaintance Model

AMSAgent

DFAgent

## Represent agent interaction protocols in UML.

## Use role-based modeling method to model FIPA specified roles for Agent Platform

## Re-modeling the above using MESSAGE UML.

## Assume your agent platform is distributed over two machines, thus you need mobility and cloning et al services to maintain your agent platform