

Intelligent Agents: Software for the Real World

- Agent: situated in an environment
- Real world: dynamic, uncertain, non-deterministic ...
- “The best laid plans ...”: things *will* go wrong
- Hence an *intelligent* agent is autonomous, proactive, flexible, robust, reactive, cooperative

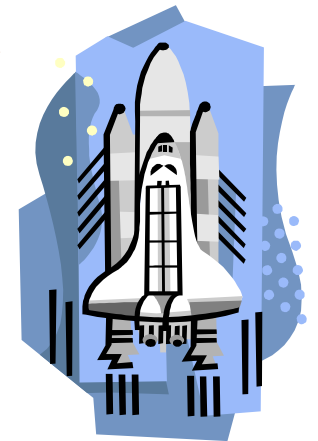


Some Applications of Agents

- Sequencing aircraft landings at Sydney airport



- Diagnosing faults on the space shuttle



- Robocup (robotic soccer)



- Information management

- Business process management

- eCommerce

- Holonic manufacturing



The BDI Model

- **Beliefs** - local knowledge base
- **Desires**- what the agent is trying to achieve
- **Intentions** - currently “adopted” plans
- **Plans** - predetermined sequences of actions (or sub-goals) that can accomplish specified tasks
- BDI model combines psychologically based ideas, formal logic, architecture, implementations and applications



But ...

- BDI difficult to understand/use
- Gap between theory and practice
- In practice more like beliefs, events, plans (BEP)
- Even worse: E.G. JACK= BEP+Java
(i.e. Object oriented concepts, imperative programming language, expressions, types, concurrency ...)
- Also terms are overloaded: "desire" means different things



Our Goal:

To find a simplified model which retains the power of the BDI model but allows more people to develop intelligent agent systems.

SAC:

**Simplifying
Agent
Concepts**

(Jan. 2001 - Dec. 2003)



Our Goal (Continued)



- More details:
 - Identify core concepts and provide clear semantics
 - Develop a simple methodology for developing agent systems
 - Develop a prototype environment and support tools based on JACK
- Target audience: professional developers or senior undergrads

Agent Oriented Software Pty. Ltd. (AOS)



- AOS is our industrial partner for this research.
- AOS is an Australian company based in Carlton, Melbourne which has developed the JACK Intelligent Agentstm agent development environment.
- The SAC project is funded by the Australian Research Council (ARC) and by Agent Oriented Software AOS

People

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