

CS378
Autonomous Multiagent Systems
Spring 2005

Prof: Peter Stone
TA: Nate Kohl

Department of Computer Sciences
The University of Texas at Austin

Week 8a: Tuesday, March 7th

Good Afternoon, Colleagues

Are there any questions?

Logistics

- Surveys due Thursday

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- Next week's readings posted

Readings Overview – OASIS

- Concretization of BDI
 - Decision nodes, chance nodes \Rightarrow beliefs, desires, intentions trees

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Implemented in an airport!

General Domain Characteristics

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Can't just use decision theory

Decision Theory

- Choice nodes: system gets to choose
- Chance nodes: environment selects randomly

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Deliberation Functions

- Maximin: aim for a best, worst case
- Expected utility: aim for a best expected case

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Example

Air-traffic Management

70–80 agents at a time

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- Sequencer
- Wind modeller
- Coordinator
- Trajectory checker

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Keep schedule until complete or impossible

Class Discussion

Ehren Kret on BDI vs. Ants

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- Come up with some simple rules to guide a plane using ant-like behavior (no centralized ATC present)

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Ehren Kret on BDI vs. Ants

- What elements need to be present in the belief for BDI?
- How should those elements map to a desire?
- How should those desires map to intentions?
- Come up with some simple rules to guide a plane using ant-like behavior (no centralized ATC present)
- List some pros/cons of both approaches and choose which you prefer/think is better.

BDI

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Desires: Pruned to only keep the right ETA

Intentions: Pruned further to keep only the best in terms of fuel consumption, etc.

Question

- Are we ready for free flight and automatic proxy agents?