CS378
Autonomous Multiagent Systems
Spring 2004

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Week 5b: Thursday, February 19th

Good Afternoon, Colleagues

Are there any questions?

Logistics

- Programming assignment 4 - any questions?

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- Final project

ACL Desiderata

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Reliability: reliable, secure, authentication possible, error handling

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(tell
:sender *stock-server*
:content **(PRICE IBM 14)**
:receiver *joe*
:in-reply-to *ibm-stock*
:language *LPROLOG*
:ontology *NYSE-TICKS*)

ACLs – Current Landscape

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- Sample FIPA applications on resources page

Class Discussion

Mark Lewis on Team Communication

{Per,Il}locution - p.14

Locution: What is said (physical)

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Example: "Please close the window."

BDI

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- Beliefs: What the agent thinks to be true
- Desires: What it wants to be true
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- Beliefs: What the agent thinks to be true
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- A way of organizing an agent
- Not a well-defined method

Soccer server communication

- What is the soccer server communication protocol?
- How does it relate?

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An example protocol next week

STEAM

- An implementation/extension of joint intentions
- Goals
  - Anticipate teamwork failures
  - Flexibility and re-use

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- An implementation/extension of joint intentions
- Goals
  - Anticipate teamwork failures
  - Flexibility and re-use
- Joint intentions doesn't do it all, though
  - Coherence: all use same plan, commitment protocols
  - Communication cost — decision theoretic
  - Replanning — role dependencies

Team Operators

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How should teams be formed initially?

Domains

- Attack:
  - Fly to holding point
  - Send out scouts
  - Shoot at enemy
- Transport:
  - Escorts protect transports
- RoboCup

Observed Problems

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Solved generally with STEAM

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- STEAM rules can be re-used
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- Communication efficiency
- Encoding and modification effort

Pursuit Activity

Group 1: homogeneous, non-communicating

Group 2: homogeneous, communicating

Group 3: heterogeneous, non-communicating

Group 4: heterogeneous, communicating