

Status Report

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Michael Sewell

Research lab – Summer term 2014

University Koblenz-Landau

Cartographer refactoring

- Refactored cartographer to reduce communication overhead, as it was slowing down the system. This is still a WIP.
 - Previously, the mailbox of the cartographer kept filling up because percepts were passed on to the cartographer multiple times by the agents.
 - Now, percepts are passed on to the cartographer by the environment.

Server stuff

- The server now has four CPUs. That's good!
 - Memory usage is low. Also good!
 - CPU load is very high. Not good!
- Michael R wants *screen* and *htop* to be installed on the server.

Uh-oh

Exams are coming up.

Exploration tweaks

- Agents will prefer the cheapest edge during map exploration, instead of a random one
- Agents go to the closest unvisited vertex when DFS is finished (fixed issue with agents get stuck)

Discovery re: actions

- If agents send multiple actions to the server in a single step, the actions are added to a queue. Each step, the server executes the action on top of the queue (FIFO).
- Therefore, we have to ensure that only one action is sent to the server per step.

Bidding

Updated bidding so that no bids are placed if an agent had already received a better bid earlier.

Node agent creation

- Is it better, performance-wise, to create a fixed number of node agents before the simulation begins vs. generating them as new nodes are discovered?
- If we know the number of nodes in the beginning, yes
 - Might cause issues otherwise

Structural cleanup

Refactored the .asl files and put them in separate packages according to their use.

On zoning

- Different zoning approaches were discussed on Wednesday.
- Final idea: Agents look in their vicinity for high-value zones, then bid with nearby agents to decide which zones to move to.

On zoning II

Zoning is a two-step process:

1. Calculate the zone values, and where agents need to be placed to make a zone. This should be done by the zone agents.
2. Agents cooperatively select the best zone to move to considering their current positions and current zone values.

Todo

- Finish refactoring to reduce communication overhead.
- Zoning still needs to be implemented.

Schedule

Beginning of July: contest parameters are set

Beginning of July: another testing phase in which we hope to be able to have more capable agents

Until August: registration for the contest

2014-09-01+: Qualification within the first week (deadline!)

2014-09-07+: Tournament within the first week (small improvements)

2014-10-31: Final report deadline