Status report

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Research lab – Summer term 2014

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High level view on the strategy

1. Explore the map until either
   - We surpass a fixed amount of knowledge (e.g. 95%) or
   - We have already spent a long time (e.g. 100 steps)
2. Start building small zones

Exploration strategy
Current status

- Agents move via DFS on the map
  - They go to an adjacent unvisited node using the cheapest available edge
- If multiple agents want to move to the same node, they bid for it

Exploration strategy
Current status

- Agents survey their current node
- In parallel, this information gets modeled through NodeAgents via DSDV
  - They build tables of shortest paths (fewest steps)
  - In theory, they could also build tables of cheapest path (fewest costs)

Exploration strategy
Current status

- Explorers probe every unprobed node they get to
  - This information is later used for zone calculation
- Saboteurs attack visible enemies
- Capable agents parry when they see an enemy

Exploration strategy
Ideas for improvement

- When some agents finish exploring earlier, they should go to the nearest unvisited node and continue exploration
- Repairers should travel to nearby disabled agents and repair them

Exploration strategy
Ideas for improvement

- Trigger actions on percept events instead of step
- Probing should perhaps be done
  - after the map exploration or
  - just not regularly (e.g. every third step).
- While waiting for replies from the cartographer, agents could fall back to recharging/probing

Zoning strategy
Current blueprint

- Our NodeAgents each calculate the most valuable zone around them
  - Use incrementally more agents
- Nodes inside of circular zones should be ignored in favour of processing power
- NodeAgents should bid for n best zones
  - Bid calculation: $\frac{\text{zone score}}{\text{amount of needed agents}}$

Zoning strategy
Current blueprint

- NodeAgents should have a separate table for zone calculation
- There, we reuse the information from probing and the steps information calculated via DSDV:

```
minStepsPath(DestinationId,
                    HopId, Steps, HopCost)
```

Server/Requests

- The server should have `git` installed
- Hopefully, the server won't need X
- We will probably need more CPUs

Current schedule

- Soon: Testing phase
- Beginning of July: Fixed contest parameters
- 2014-09-01+: Qualification
- 2014-09-07+: Tournament
- 31.10.2014: Final report deadline

Thanks for your attention!