Combining Roborescue and XABSL

Maarten de Waard

UvA

April 26, 2012

Roborescue

Currently roborescue mainly involves the exploration task:

- Deploy several robots and a base station
- Autonomous exploration will be started:
  - Simultaneous Localization and Mapping
  - Avoiding obstacles
  - Avoiding walls
- Different subroutines are used.

XABSL

Extensible Agent Behavior Specification Language

XABSL is a very simple language to describe behaviors for autonomous agents based on hierarchical finite state machines.[1]

Advantages:

- Simple to use
- Easy to keep track on a big FSM hierarchy
- Lots of debugging tools
- Lots of testing tools

[1] www.xabsl.de

Combining the two

Why:

- XABSL has proven itself in the robocup soccer competition
- Behavior has not been used in rescue (and exploration) yet
- The current rescue code is in Visual Basic:
  - It's difficult to organize a big behavior hierarchy in Visual Basic
  - It's easy to lose track of what you are doing

Measuring Results

How results can be measured:

- Ammount of exploration done
- Time taken for current ammount of exploration

These should be compared with the results of the old code. Furthermore it should be easier to tweak variables, which could give extra advantages in the points above.