SoccerScope3

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SoccerScope3 is a visualization tool to support soccer agent development. Principally it handles a log file output by the soccer server. When a soccer agent did a strange action, the agent developer can investigate the detail of the action and internal status of the agent by using SoccerScope3. So developers can grasp whether the cause of agents' strange action or miss is agent bugs or the noise of the soccer server.

In addition, SoccerScope3 can visualize information related to the agent action and various game conditions. This improves the efficiency of development superbly. SoccerScope3 has the following four functions.

1. It can represent information supplied by the soccer server.
2. It can represent information supplied by soccer agents in a certain protocol.
3. It can analyze and visualize various game conditions.
4. It provides a three dimensional viewer.

The first function contains zooming of field graphics, the visualization of agents' view and stamina, visualization of the velocity and track of individual agents and the ball, and visualization of agents' messages in a log file. The second function contains the visualization of agents' world model and agents' intention by reading agents' log files in a specified format. The world model of an agent is a data structure of information that represents how the agent recognizes its environment such as the coordinate and velocity of the ball and agents. The third function visualizes the simulation result without noise that soccer server imposes, locus of agents and ball, dominant regions of both teams, and Voronoi graph. The fourth function provides a three dimensional view from any agent viewpoint or from arbitrary fixed coordinate. By using this 3D viewer, agent developers can experience the viewpoint of an agent.

SoccerScope3 has contributed to the development of our soccer agent YowAI2002. We could find some agents' bugs by the inspection with SooccerScope3. We developed the visualization of internal status of agents or information supplied by the server. We are now developing a visualization function useful for analysis of the teamwork. Visualization of the cooperation of multiple agents is still a challenging problem.