System Description Template

[Author]

[Institute]

Abstract. Please follow the given template structure for your submission by answering the questions as concisely as possible, not exceeding the total of **5** pages. It is vital to explain in this submission 1) a *description* of the system, the methodology/tools/infrastructure used and the (team) strategy that you plan to use in the contest, and 2) some *feedback* about the proposed scenario, and the setup would be a valuable information for organizing this and future editions of the contest.
An important topic is to explain whether your system is already a truly multi-agent system or rather a (single) agent system, that you are planning to extend into a multi agent system in the future. The submissions should be send by email to Jürgen Dix (dix@tu-clausthal.de) no later than April 20th. If modifications are necessary, we will directly ask you to submit a final version on May 4th.

1 Introduction

2 System Analysis and Design

1. How is your system specified and designed?
2. Did you use any existing multi-agent system methodology such as Prometheus, Gaia or Tropos?
3. Which strategies and algorithms do you plan to use?
4. How are the following agent features implemented: *autonomy*, *proactiveness* and *communication*m *team working*, and *coordination*?
5. Is your system a truly **multi-**agent system or rather a centralised system in disguise?

3 Software Architecture

1. Which programming language do you plan to use to implement the multi-agent system?
2. How would you map the designed architecture (both multi-agent and individual agent architectures) to programming codes, i.e., how would you implement specific agent-oriented concepts and designed artifacts using the programming language?
3. Which development platform, tools and techniques are you planning to use?

Please give reasons why you have chosen the methods explained above.

4 Agent team strategy

Please address the following points, or at least comment if not applicable:

1. Describe the navigation algorithms:
   - obstacle avoiding
   - strategy for finding and herding cows
   - opponent blocking
2. Describe the team coordination strategy (if any)
3. Does your team strategy use some distributed optimization technique w.r.t. e.g. minimizing distances walked by the agents?
4. Describe and discuss the information exchanged (and shared) in the agent team.
5. Describe the communication strategy in the agent team. Can you estimate the communication complexity in your approach?
6. Did your system do some background processing? Under background processing we understand some computation which happened while agents of the team were *idle*, i.e. between sending an action message to the simulation server and receiving a perception message for the subsequent simulation step.
7. Possibly discuss additional technical details of your system like e.g. failure/crash recovery and alike.

5 Discussion

In this section please expand a bit on your experience with the contest organization, the proposed scenario, and the setup of the actual contest. Please indicate what do you see as pros/cons of participating in the Contest with respect to your research in the field.

1. Critical discussion of your approach to the development of the agent team.
2. Will you gain some insights/experiences into developing multi-agent system in the course of participating in the Agent Contest so far? If so, what kind of?
3. Describe and discuss possible problems that you face in choosing approach, programming platform or technical infrastructure to participate in this contest?

6 Conclusion