V RoboCup Middle Size League Workshop
An Overview

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Introduction

The Middle-Size League has gained the tradition of organizing an annual workshop, where teams can gather together between the competitions to exchange knowledge and experience.

In 2015, the RoboCup MSL International workshop took place in Aveiro, Portugal, on November 23th, 24th and 25th. An average number above 30 people, from five different MSL teams, participated during this three day period of the Workshop.

Teams from the Middle Size League, as well as other RoboCup leagues, were invited to join and actively participate in this event, that took place during the European Robotics Week, giving a special meaning to its involvement in the robotics research efforts.

Day 1 – Presentations

The first workshop day was dedicated to formal presentations of the on going work from the different teams. These presentations were also broadcasted in video live feed and simultaneously recorded for future memory (Fig. 1).

Fig. 1 – Participants in IRIS Lab, Day 1

This day concluded with an invited speaker talk by Prof Luis Almeida, from University of Porto, under the title "Communications for teams of cooperating robots". This talk addressed some of the main issues that need to be solved to support cooperation among robots, such as synchronization, membership and information sharing with a particular illustration within the RoboCup Middle-Size League.

Schedule - Monday, 23rd November 2015	
12h00	Reception
13h00	Lunch
14h00	Opening Session
14h30	Presentation Carpe Noctem Cassel
15h00	Presentation ASML-Falcons
15h30	Presentation Minho Team
16h00	Presentation Tech United
16h30	Presentation Wouter
17h00	Presentation CAMBADA
17h30	Invited Talk (Prof. Luis Almeida)
18h00	Social Event

Day 2 – Hands-on Session

The second day was fully dedicated to a hands-on session, based on the newly develop MSL Referee Box. The aim of this hands on day was twofold:

- Test and verify the functionalities of the RefBox, allowing all represented teams to connect and interact with it;
- Develop a JSON based protocol to log each team's world-state information at a minimum rate of 10 Hz, which is released after the game to all teams. This is expected to provide a powerful mean of offline evaluation and debug to the teams, providing also a rich database for statistical analysis and benchmarking within the league.

This world-state information was also used, in real time, by an audience viewer client of the RefBox, allowing the public to perceive what is the current understanding of each team regarding the surrounding world (each robot position, heading and velocity, position and velocity of the ball, position of opponents and so forth).

The outcome of this 11 hour non stop session was very positive and, by the end of the day, all teams were able to gather the required information from their base-stations and feed the RefBox with it, being also able to visualize that same data in the mentioned viewer client of the RefBox.

Fig. 2 – Hands-on Session

Day 3 – Discussion

The last day of the workshop was dedicated to an open discussion on three main issues:

- Possible contributions and discussion of next years new rules and regulations changes together with the evaluation and discussion of the current MSL roadmap;
- Decisions towards dissemination of the outcomes of this workshop
  - o First worldstate gathering took place in RoboCup European Open 2016
  - o Created a GitHub organization
  - o Based on the results during the 2016 RoboCup competitions, a paper on benchmarking in the MSL league will be submitted to a reference journal.
- A detailed discussion about next year's workshop.

Conclusion

The materials of this workshop (presentations PDFs and Videos, JSON protocol definition, photos, etc.) can be consulted under the official RoboCup Middle-Size League Wiki page:

http://wiki.robocup.org/wiki/Middle_Size_League/Workshop

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