Festival Nacional de Robótica

FreeBots

Competition rules and technical specifications

Comissão Especializada para o Festival Nacional de Robótica

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1. FreeBots Competition

FreeBots is a competition challenging the research and development community, worldwide, to present their research results in the form of a technical presentation and a public demo. The scope of the demos encompasses physical robots (one or more), mobile or not, land, aquatic or aerial. The acceptance of teams/demos may be limited due to the availability of technical conditions at the site. Each demo will be evaluated by a jury of prominent individuals with a strong connection to robotics with respect to their: technical-scientific quality; application potential; capability to present the solution to the public; and quality and success of the demo. The top team will be declared the winner of the competition.

2. Rules

During the competition, each team has to:

(1) Make a technical presentation (20 min) of their project including a video of the proposed demo and answer technical questions from the jury;

(2) Make a short non-technical presentation together with a public demo (30 min), being challenged by the public and/or the jury.

The jury composition should follow these guidelines:

- 2 renowned researchers (with a PhD);
- 2 renowned industry persons;
- 1 member of the competition Technical Committee (TC)

3. Evaluation

The evaluation made by the jury in the two stages must follow the following criteria:

E. **Technical-scientific quality** of the proposal, evaluated based on the technical presentation to the jury. **Weight = 30%**

F. **Application potential**, evaluated based on the whole performance of the team. **Weight = 20%**

G. **Capability to present the solution to the public**, evaluated based on the way the non-technical presentation and public demo is carried out by the team. **Weight = 20%**

H. **Quality and success of the demo**, evaluated based on the public demo. **Weight = 30%**

Each member of the jury assigns 0–10 points per criteria. The points assigned by each member are summed up, and the teams are ranked according to this sum. In the case of ties, the jury can vote on the ordering of the tied teams.

4. Before the competition

The Technical Committee (TC) of this competition is responsible to distribute a Call for Participation (CFP) aiming the international research and development community, detailing the competition goals and the requirements participating teams must meet that year, as well as the operational procedure teams must follow to apply.

After the deadline for the submission of participation applications, the TC performs a pre-selection of the teams *exclusively based on the adequacy of the proposals with respect to the CFP*. Then, the selected teams are informed. The participating teams must sign an agreement binding them to the participation in the competition.

The next phase consists on a bidding of the participating teams for physical resources in the competition arena. These resources include space, power, networking, and others. Because resources are limited in the arena, the TC, together with the local organization, will attempt to fairly distribute the available resources among the teams, but may need that the participating teams bring part of, or all, the demo infrastructure. The TC and the local organizers are then responsible to assure that the agreed resources are made available to the teams in the competition arena.

5. During the competition

The competition takes place during 3 days, according to the following schedule:

Day 1 – Setup

The first day is reserved for the hosting and setting up of the teams. During this day, the agreed resources are checked, and the teams can start working on their demos right away.

Day 2 – Technical Presentation to the Jury

Each team is asked to perform a technical presentation to the jury, detailing the technical aspects of the demo. This presentation will be public, lasting up to 20 minutes per team plus 10 minutes of questions and answers. The jury evaluates each team with respect to the technical scientific quality of their approach, and to the application potential of the solution.

Day 3 – Public Presentation

The final part of the competition takes place in this day. Teams are asked to perform their demo to the public, together with a short presentation, aiming at the general public, focusing on the potential applications of the proposed solution. Each demo lasts a maximum of 30 minutes. These demos are then evaluated by the jury, whose elements vote individually each of the criteria in the Evaluation section, raising panels with the corresponding grade (0--10). The top team will be declared the winner of the competition.