

Legged Robots Marathon RoboFinist competition rules

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1. General Provisions

The run is held by each team independently. One team plays one robot.

1.1. Task Description

The distance must be completed by the robot along the specified trajectory in a minimum of time.

1.2. Restrictions

A team must meet the following requirements, unless otherwise specified by the Organizing Committee of a particular Event:

- the number of participants in the team is 2 or less (the number of coaches/team managers is not limited)
- the oldest member of the team is 19 years old or less in the year of the competition.

2. Requirements for the Robot

The robot must meet the following requirements:

- length not more than 400 mm;
- width not more than 400 mm;
- height not limited;
- weight not limited.

There are no restrictions on the robot dimensions after the start.

The robot must be absolutely autonomous; remote control in any form is prohibited. The programs run by the robot must be written by the participant(s) only.

Robots must be assembled from individual parts. Pre-built robots and/ or robots with manufacturer pre-installed motion programs, are not eligible for competition.

The design of the robot must ensure the actuating of the «start-finish» system.



The tires and other components of the robot (when off) in contact with the ground must not be capable of lifting and holding an 80 g/m2 A4 sheet for more than 2 seconds.

The robot can follow along the line by step, jogging or jumping (in any sequence). The robot must touch the surface of the field with legs only.

The robot must not have wheels, cogwheels, or any part touching the surface of the field, including those rigidly fixed, including those fixed flat.

The robot must have at least one leg. The number of robot legs is unlimited.

Each leg must consist of at least two pivotally connected movable items (rigid elements).

At any time, any foot of the robot must not be above the point where the associated leg is attached to the robot's body.

The foot of the leg is the lower part of the unit in contact with the field.

Examples of designs that are not legs:

- wheels with an open rim, with spokes or any other radial elements to create a similarity to the legs;
- chain track including in the form of traction belts with studs or roller chains with «feet» (regardless of the way of fastening);
- a «leg» as awhole, making full turns (360-degree rotation of the part) about some axis when moving;
- a «leg» with supporting part which does not perform any movement relative to the robot's body.









Figure 1. Legs' designs

3. Specifications of the field

The field is a flat rectangular white surface made of no particular material with a black line on it. Optionnaly, a one piece banner with a density of 400-500 g/m2.

The starting (finish) line is marked by a dash line perpendicular to the track line. It is two separate strips in the color of the track line, 10 mm wide, 50-75 mm long with a gap between them of half the maximum allowable width of the robot.

The starting (finish) line can be placed on any straight section of the track at least 100 mm from the nearest curve.

The length of the track is 15000+/-5000 mm.

The size of the field and the track design is set by the Organizers of the Event.

Line Specifications:

- width 50 mm;
- radius of curvature at least 300 mm;
- shape continuous non-intersecting;



• free space - at least 300 mm on both sides.



Figure 2. Field example

4. Contest Procedure

Robots are given 3 minutes to complete the task.

At the start the robot must be placed in front of the start line so that its projection does not cross it.

At the discretion of the Officials, time is fixed by the «start-finish» system or by the Judge using a stopwatch. The fixed time is final and cannot be reviewed.

The attempt stops if the time allotted for the run is over.

The run time is counted from the moment the robot crosses the starting line to the moment the robot crosses the finish line.

The number of attempts is determined by the Organizers on the day of the competition.

The attempt with the minimum run time is counted.

5. Disqualification

The attempt is disqualified if:

• the robot is not autonomous (the robot is under an external control);



- participant touched the robot or the field during the run;
- the robot has not complete the task in a specified time;
- the robot has left the line (the robot projection is not above the line);
- robot has touched the field by any of its part but not by leg

6. Scoring

N/A

7. Procedure for Determining the Winner

The winner will be the team whose robot has spent the minimum time for covering a distance.