



## ROBOFINIST

### Labyrinth

#### 1. General provisions

##### 1.1. Field

- 1.1.1. Range color — white.
- 1.1.2. Line color — black.
- 1.1.3. Start zone color — red.
- 1.1.4. Finish zone color — green.
- 1.1.5. Width — 50 mm.

#### 2. Requirement to Robots

##### 2.1. Main specifications

- 2.1.1. The robot size at the start must not exceed 25 x 25 cm.
- 2.1.2. The robot height must not exceed 25 cm.
- 2.1.3. In the process of motion, the robot sizes may change.
- 2.1.4. The robot weight is unlimited.
- 2.1.5. The robot must be fully self-sustained.

#### 3. Game

##### 3.1. Objective of game

- 3.1.1. The robot must get from the start zone to the finish zone within the shortest time possible.
- 3.1.2. The assignment completion time must not exceed 2 minutes.
- 3.1.3. The walls are re-positioned before each attempt of all the robots.

##### 3.2. Start

- 3.2.1. Attempts begin only after the last robot has been submitted into quarantine<sup>1</sup>.
- 3.2.2. Before each attempt, the team is given<sup>2</sup> 5 minutes to launch the robot in the labyrinth survey mode<sup>3</sup>.
- 3.2.3. At the moment off start, the robot shall be fully within the start zone.
- 3.2.4. Immediately before start, each team randomly determines the robot front orientation as of the program launch moment.
- 3.2.5. The robot must be manually activated or initiated at the contest start by the referee's signal; after that the robot work is not to be interfered with. Remote control and issue of any commands for the robot are prohibited.
- 3.2.6. During the contest, the participants are prohibited to touch the robot body or the range.

##### 3.3. Finish

- 3.3.1. The assignment completion is over by the referee's command at the moment when the robot is fully within the finish zone.
- 3.3.2. By the referee's decision, the attempt may be over ahead of time.

<sup>1</sup> Robots placed into quarantine can not be modified or altered (inclusive of software download or battery replacement)

<sup>2</sup> The team has the right to renounce such time.

<sup>3</sup> The labyrinth survey must not be in conflict with Clause 2.1.5. Entry of any data at the moment referred to is prohibited.



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### 3.4. Assignment completion discontinuation

3.4.1. The assignment completion may be interrupted (with time stopped) in the following cases:

- If any member of the team has touched the robot body.
- If the robot has failed to leave the cell within 30 sec.
- If the finish condition has been satisfied (see Clause 3.3.).
- If the competition procedural rules have been violated.
- If the time allocated for completion of the assignment has expired.

### 4. Winner nomination rules

4.1. Each team has no more than 2 attempts (their exact number to be determined by the jury on the competition date).

4.2. Points are scored for passing through the labyrinth from the following formula:

$$\text{Points} = (\text{short-cut way length} - \text{minimum number of accessible cells separating the robot from the finish}) \times 10 + (120 - (\text{attempt time}^4))$$

4.3. The best time among the attempts counts.

4.4. The team whose robot has scored the maximum points is declared the category winner.

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<sup>4</sup> The attempt time must not exceed 120 sec.