

«SEGWAY RACE» CONTEST RULES

Version 2.3 dated August 01, 2016.

Based on version 2.2

1. General provisions

1.1. Field

- 1.1.1. The field is a white colored track with the black line on the surface (see fig. 1).
- 1.1.2. Line width is 50 mm.
- 1.1.3. The radius of line curvature is not less than 300 mm in each point of line.
- 1.1.4. There may be two obstacles placed on the line: the brick and the hill.

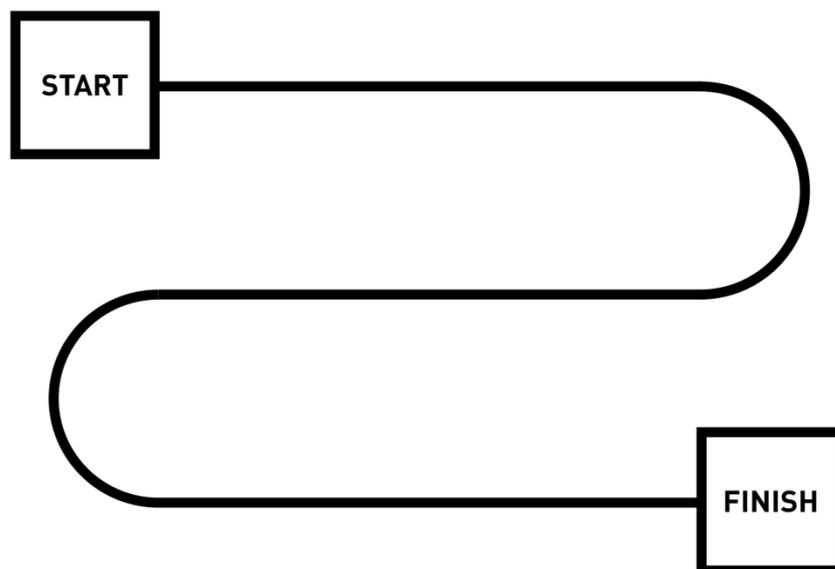


Fig. 1. The field scheme

2. Requirements to robots

2.1. Basic specifications

- 2.1.1. Size of the robot should not be more than 40×40 cm at the start.
- 2.1.2. Size of the robot may be changed during the race.
- 2.1.3. Height of the robot should not be more than 40 cm.
- 2.1.4. Weight of the robot is unlimited.
- 2.1.5. The robot must be fully autonomous.

2.1.6. The robot must have no more than two fulcrums.

3. The race

3.1. Objective of the race

3.1.1. Following the black line, the robot has to get from the start zone to the finish zone within the shortest possible time.

3.1.2. The race time should not exceed three minutes.

3.2. Start

3.2.1. Two obstacles are placed on the field before race start: the brick is placed on the middle straight part of the line and the hill is placed on the nearest to finish straight part of the line. The robot operator may remove one or two obstacles at his or her discretion.

3.2.2. The robot operator may choose one of two starting points.

3.2.3. At the start all the robot bearing points should be placed within the start zone.

3.2.4. The robot must be activated or manually initiated at the start by the referee's signal. After the start any kind of unauthorized by these rules interference with the robot work is prohibited.

3.2.5. Giving of any instructions or commands in any way to the robot is prohibited.

3.2.6. During the race participants are prohibited to touch the robot and the field.

3.3. Finish

3.3.1. Race is terminated by the referee's signal after any fulcrum of the robot has crossed the finish line.

3.3.2. By the referee's decision the race may be terminated before the appointed time.

3.4. Termination of the task execution

3.4.1. The robot is considered to be leaved the line if none of line parts is placed between outer borders of robot supports.

3.4.2. The robot is considered to be performed the brick detour maneuver if it leaved the straight segment of the line where brick is placed and returned on the line in the same straight segment.

3.4.3. Task execution and time counting may be terminated in the following cases.

3.4.3.1. any of the team members has touched the robot body;

3.4.3.2. the robot has leaved the line for more than 5 seconds without performing of the brick detour maneuver;

3.4.3.3. the robot has lost the balance and has had more than two fulcrums at some moment;

3.4.3.4. contest rules violation has took a place;

3.4.3.5. time allocated for race has been expired (see p. 3.1.2);

3.4.3.6. the finish condition has been satisfied (see p. 3.3.1).

4. Winner nomination rules

4.1. Attempts

4.1.1. Each team has no less than two attempts. Exact number of attempts is determined by judicial assembly on the competition date.

4.2. Scoring and winner nomination

4.2.1. The track is separated by elements robot should pass for. For passing of each track element robot is scored by count of points according to table 1.

Table 1. Track elements and points scored for them

Track element	Points for passing element
Straight section of the line without obstacle	10
Straight section of the line with obstacle	50
Line turn	20

4.2.2. The track element is considered to be passed if robot starts passing of the next track element and none of conditions of p. 3.4.1 has been satisfied.

4.2.3. Team results are counted in order from the best to the worst one.

4.2.4. The team whose robot scored the maximal count of points in category is declared as winner of this category.

4.2.5. If two or more teams have equal count of points their results are comparing in order according to p. 4.2.3 until this process is possible.

4.2.6. If counting of all attempts results does not enable teams ranking their time of passing the track in each attempt is compared in order according to p. 4.2.3.

5. Change log

5.1. Version 2.3

5.1.1. Paragraph 3.4.1 was moved to the same section with number 3.4.3.

5.1.2. Paragraphs 3.4.1, 3.4.2 were introduced.

5.1.3. Changes were introduced to the paragraph 3.4.3.2.

5.2. Version 2.2

5.2.1. Section 1.2 has been deleted.

5.2.2. Changes to sections 3.2, 4.1 and par. 1.1.4, 2.1.5 have been introduced.