

«SEGWAY RACE» CONTEST RULES

Version 2.1 dated July 02, 2015.

1. General provisions

1.1. Field

- 1.1.1. The field is a white colored track with the black line on the surface.
- 1.1.2. Line width is 50 mm.
- 1.1.3. The radius of line curvature is not less than 300 mm.
- 1.1.4. There may be an obstacle on the line in form of hill.

1.2. Contest categories

- 1.2.1. There are two categories in the “Segway race” contest:
 - 1.2.1.1. “Remote control” – manually controlled robots;
 - 1.2.1.2. “Autonomous” – autonomously controlled robots.
- 1.2.2. For robots participating in “Remote control” category paragraphs 2.1.5, 3.2.4 of these rules does not operable.

2. Requirement to robots

2.1. Basic specifications

- 2.1.1. Size of the robot should not be more than 40x40 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 if it participates in “Autonomous” category of the contest.
- 2.1.6. The robot must have no more than two bearing points.

3. Game

3.1. Objective of the game

- 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. An operator of the robot may independently choose one of two starting points.
- 3.2.2. At the start all the robot bearing points should be placed within the start zone.
- 3.2.3. 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.
- 3.2.4. Giving of any instructions in any way to the robot participating in "Autonomous" category is prohibited.
- 3.2.5. 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 bearing point of the robot has crossed the finish line.
- 3.3.2. By the referee's decision the race may be interrupted in any moment.

3.4. Task execution termination

- 3.4.1. Task execution may be interrupted with time stopped in the following cases:
 - 3.4.1.1. Any of the team members has touched the robot body;
 - 3.4.1.2. The robot has lost the line for more than 5 sec;
 - 3.4.1.3. The robot has lost the balance;
 - 3.4.1.4. One of the contest rules has been violated;
 - 3.4.1.5. Time allocated for race has been expired (see p. 3.1.2);
 - 3.4.1.6. The finish condition has been satisfied (see p. 3.3.1).

4. Winner nomination rules

4.1. Attempts and categories independence

- 4.1.1. In each category of contest winner is nominated independently of other categories.
- 4.1.2. 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 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.