



## «HUMANOID SPRINT» CONTEST RULES

*Version 2.0 dated May 06, 2014.  
Contest idea of [robotchallenge.org](http://robotchallenge.org)*

### 1. General provisions

#### 1.1. Field

- 1.1.1. The field is a track enclosed with borders from both sides.
- 1.1.2. Field color – random.
- 1.1.3. Border color – random.
- 1.1.4. Track width – not less than 70 mm.
- 1.1.5. Border height – 20 cm.
- 1.1.6. Start-to-finish distance – 200 cm.

### 2. Requirement to Robots

#### 2.1. Main specifications

- 2.1.1. A robot is a two-legged walking humanoid capable of moving its center of mass in order to maintain balance while walking.
- 2.1.2. When walking, the balancing foot's joint angle must exceed 90 degrees.
- 2.1.3. If this requirement is violated at any moment, the robot will not be considered walking anymore.
- 2.1.4. The feet may be of any length and form, provided the following requirements are adhered to:
  - 2.1.4.1. A robot foot is its integral part contacting the floor surface.
  - 2.1.4.2. The maximum length (size) of a foot must be less than 50% of its overall leg length. The leg size is determined by the distance from the foot/floor contact point to the leg/upper body coupling point.
  - 2.1.4.3. The maximum foot length must be less than 20 cm.
- 2.1.5. When a robot stands still or walks, the left and right feet contours must not overlap each other.
- 2.1.6. A robot must have 2 hands. Each hand's length must not exceed the overall leg length.
- 2.1.7. The robot must have a head.



## 3. Game

### 3.1. Objective of game

- 3.1.1. A robot must cover the start-to-finish distance within the shortest possible time.
- 3.1.2. The total task completion time must not exceed 3 minutes.

### 3.2. Start

- 3.2.1. During the start, all parts of a robot must be located behind the start line.
- 3.2.2. The robot must be turned on or initialized manually upon command of a judge at the competition start, after which no interference into its operation is allowed. Remote control and commanding the robot are prohibited.
- 3.2.3. During the competition, competitors are not allowed to touch the robot's body or the polygon.

### 3.3. Finish

- 3.3.1. The task is ended upon command of a judge after a robot crosses<sup>1</sup> the finish line.
- 3.3.2. The judge may as well decide for an early termination of a try.

### 3.4. Task execution termination

- 3.4.1. Task execution may be halted and the timer may be stopped in the following situations:
  - 3.4.1.1. If any team member touches the robot body;
  - 3.4.1.2. If the robot falls and does not stand up in 10 seconds;
  - 3.4.1.3. If the finish conditions are fulfilled (see Paragraph 3.3);
  - 3.4.1.4. If the competition protocol is violated;
  - 3.4.1.5. If the task time elapsed.

## 4. Points tally

- 4.1.1. Each team is given at least two tries (the exact number is defined by the judging panel on the competition day).
- 4.1.2. The time of the best try is counted.
- 4.1.3. The team is considered the winner if:
  - 4.1.3.1. Their robot has covered the start-to-finish distance in the shortest time
  - 4.1.3.2. Their robot has covered the longest distance<sup>2</sup>.

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<sup>1</sup> A robot is considered as having crossed the line, if the better part of its body is located behind it.

<sup>2</sup> In case none of the robots have finished.