



# SUMO CHALLENGE: HUMANOID SPRINT REGULATIONS

*Humanoid Sprint 31/10/2015*

## 1. Short description of competition

The aim of this competition is to make the robot moving on two legs cover the given track as quickly as possible.

## 2. Robots

### 2.1) Dimensions:

Height - 50 cm  
Width - 20 cm  
Length - 20 cm  
Weight - unlimited

### 2.2) Requirements

- a) robot must be fully autonomous (no connection with external devices)
- b) robot must have two legs which length is at maximum 70% of the robot's height. Length of the leg is measured from the point where it touches the ground to the axis that connects the leg to the upper part of the robot
- c) robot must have two (not necessarily active) arms. Arm's length may not exceed a length of the extended leg.
- d) robot must have a head (not necessarily active)
- e) robot cannot walk in a „crouch” - where a knee-joint angle is smaller than 90 degrees
- f) while robot is moving, only one foot can touch the ground
- g) as a foot we consider part of the robot, which touches the ground

Foot can be in any shape or form, as far as it fulfills the following requirements

- the maximum length of the foot (at any time of the match) has to be at most 50% of the extended leg's length.
- the maximum length and width of the foot is 20 cm
- a rectangular outline of the foot cannot, at any time, superimpose the outline of the other foot

## 3. Track definition

The track has a shape of rectangle 70 cm wide and 200 cm long framed with a green board of 10 cm height. The start line and finish line are black and have a width of 2 cm.

## 4. Game rules

Each robot has three attempts to complete the route. The robot has to navigate autonomously - any way of contacting with a robot during the competition is strictly forbidden.

4.1) The time is measured from the signal given by the referee until the time the robot crosses the finish line.



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4.2) The fastest robot to complete the course wins. If no robot manages to complete the course, the robot which covered the longest distance wins.

4.3) The attempt may not take longer than 5 minutes.

4.4) The robot's fall during the run can mean end of the run. It is measured the distance which robot covered before the fall. The only exception is situation when robot stands up in 10 seconds after fall by itself, without any external interference – then it can continue the run.

### **5. Remarks:**

In this competition IT IS ALLOWED to use off-the-shelf constructions, however, robot has to be modified and programmed in order to autonomously complete the task. In case of any doubts please contact the organizers to agree on the rules of participation.

The referee decides in every situation which is not included in the Regulations.

The robot is considered as the integrated whole - no items (excluding batteries) can be used in another robots.

Organizers have the right to make minor changes in the Regulations until the start of the competition.