



# SUMO CHALLENGE: KETCHUP HOUSE REGULATIONS

Ketchup House 31/10/2015

## 1. Brief description of competition:

In this competition two robots compete on a field consisting of a grid of intersecting perpendicular vertical and horizontal lines. The task of the robot is to move as many ketchup cans on a baseline. The robot that perform its task faster and better, wins.

## 2. Possible dimensions

### 2.1) Cans:

- Height: 74 mm (+/- 1 mm)
- Diameter: 53 mm (+/- 1mm)
- Weight: 163 g (+/- 5 g)

### 2.2) The maximum dimensions of robots:

- Length: 30 cm
- Width: 30 cm
- Weight: 5 kg
- Height: unlimited

## 3. The field

3.1) The route consists of a white board on which are pasted black lines (19mm). The playing field is determined by a grid of 5 horizontal and 5 vertical lines with spacing of 30 cm. Around route (lines) there is a free space of at least 30 cm.

## 4. Requirements:

4.1) Robots must be fully autonomous - the only permitted form of connections with external devices is a remote START / STOP command.

4.2) Robots should be able to detect the lines that make up the route, but is not required to navigate on the lines - it is possible to move freely along the route.

4.3) The robots can carry cans on their baselines in every possible way - so cans can gripped, moved, dragged, etc.

## 5. About the competition

5.1) Before the start, competitors put their robots on baselines (these are the opposite, external lines of the route). Then the judge puts the cans randomly on selected intersections of lines (cans are not at baseline none of the robots). The game begins at the START signal given by the referee. Competition ends after 3 minutes or when robots gather all the possible cans.



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5.2) When a robot moves the can for at least one point of intersection, the judge puts another can on the same place. The judges may add up to 4 cans (so the number of possible points is 9 (5 cans at the beginning and 4 extra cans)).

5.3) The robot that transport more cans to its baseline, wins.

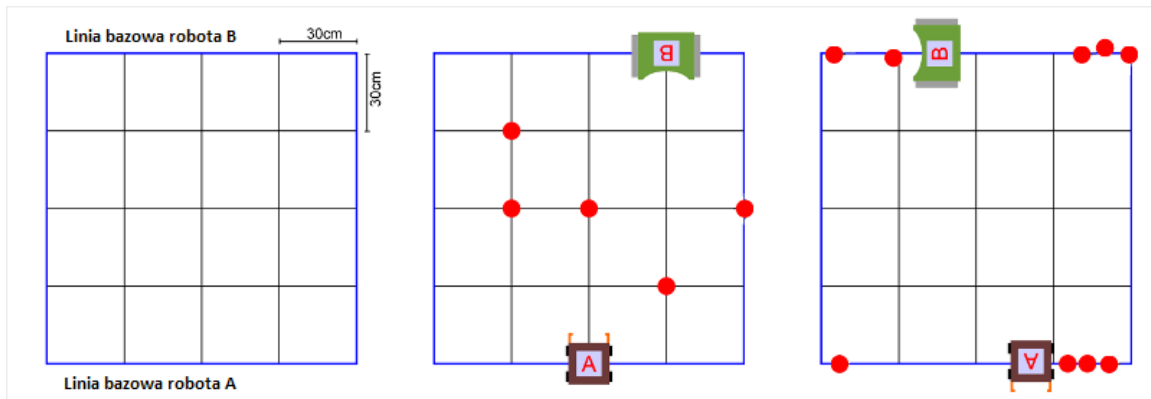


Figure 1. Illustration depicting the route of the competition. View of the route, possible initial setting, possible end of the game (picture by [www.forbot.pl](http://www.forbot.pl) with modifications)

### 6. Notes

Organizers have rights to make minor changes in the regulations until the start of the competition.

It is permitted to use in competition off-the-shelf constructions being in the official sale, however their results will not be considered in final order (they cannot win prizes). If the robot is a modified version of the commercial construction, please contact the organizers to agree on the rules of participation. Robots that are built from bricks not exactly meant for this competition (i.e. Lego) can participate on a regular rules.

The competition can take place in variable lighting conditions. Sensors should be protected from the adverse effects of the light. It is forbidden to walk on and around the track in order to provide additional shade on the route.

Referee's decision is final and there is no appeal on it.

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

Robot is considered as an integrated whole – no part (excluding batteries) can be used in other robot.