Ketchup House

Two robots compete in a store to collect more ketchup cans

1. Contest description

Within a 3-minute game, a robot tries to move as many ketchup cans as possible to its home line. The cans are put into the store just before the match; two at predetermined positions and five at random ones (and these will be also replenished when a robot picks them).
Before each match, the participants place their robots on the starting position. Only then, the referees will deploy the ketchup cans. The participant starts the robot on a referee's signal. The task is to find and move ketchup cans so as much as possible of them is located at the home line after the match end (the can must touch the line at least a bit). However, only the cans outside the convex hull of robot projection will be counted at the end of the match. It is allowed to manipulate all cans, including those the opponent robot has already brought to its home.
Based on the number of robots, the competition may be split into groups from which the best robots will proceed to the finales. In case of a tie, a repeated match may be ordered by the referees; consecutively, the performance of the two robots in previous rounds may be considered too.

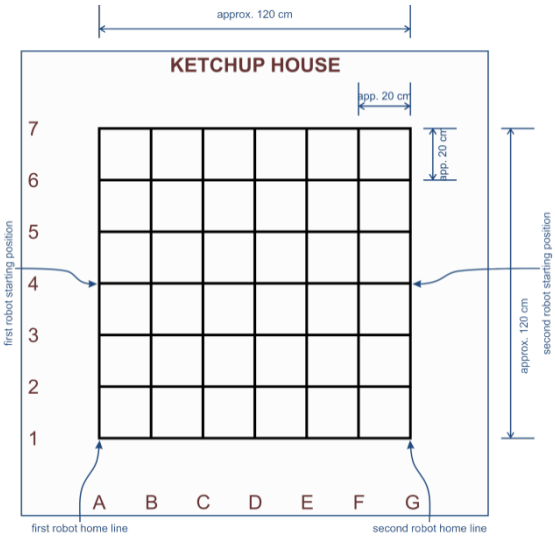
2. Robot

The robot is fully autonomous and must not be dangerous or excessively annoying.
Throughout the race (including the start) no external connection is allowed. Since the robot is prepared for start, it must not be touched or interfered with in any way except starting until the referee allows so.
On its top side, an emergency switch must be located. By pressing it all actuation must be switched off. The switch must be big enough and well distinct so that it can be easily recognized, reached and used. A 10x7 cm space for sticker marking must be reserved on the robot's top side.
Maximum size of the robot is 30(w)x30(l) cm. There is no upper limit on its height but the robot must be at least 1.5 times taller than a can so that the opponent can distinguish it from the can. The construction of the robot must allow good detection by the opponent (for example to be of solid body, not "mostly see-through").
Every robot must pass the homologation to check it can score and avoids collisions with the opponent; collisions will lead to penalties or even disqualifications. If two robots meet face to face, both should stop or divert to prevent the collision. In other situations, "priority to the right" rule is applied.

The teams will also provide at least 2 photographs/images and 2 paragraphs of text describing the robot/team in electronic form for publishing purposes prior arrival to the competition (via the registration application).

3. Playing field

The store is represented by a 7x7 network of black lines with ca. 20 cm spacing. The lines are about 1.5 cm wide, store ground is white. There is about 30 cm free space around the store (yet there may be some markings there).
Before the game, 7 cans are deployed. Two are located at D3 and D5 positions, five randomly: four of them symmetrically to the store centre in columns C, D, or E, the fifth ketchup will be placed at one of the remaining free places in columns C, D, or E.
If the robot picks one of the randomly placed cans and departs with it for at least one square and the opponent is also at least one square away, new ketchup will be deployed at that position, up to 12 cans total.
The robots start at positions A4 and G4. During the game, they may move freely all over the store, not only following the lines.



4. Ketchup

The ketchup is in cans generally available in the groceries. They are roughly of this size: diameter 5.5 cm, height 7.5 cm, weight 165 g. Can colouring is not defined.

5. Power of officials and liability

If a robot or a participant violates the rules, the referee may disqualify them from the race. He may also disqualify the participant or the robot for further races.
No objections against the decisions of the referee or the organizers are allowed.
The organizers may change the rules without prior notice, e.g. based on number of participants, local conditions etc.

The participants are responsible for their robots and their safety and will be liable for all damages caused by them, their robots or their equipment.
The organizers will not be under any circumstances held liable or responsible for any accidents of the participants or any damages caused by the participants, their robots or their equipment.