

SRG 2001: SCHOOLS' ROBOTIC COMPETITION

Task:

To design and build an autonomous robot that is able to avoid obstacles and deliver objects across an open field from one base camp to another.

Judging Criteria:

Deliver the most number of target objects to a base camp within a given time.

Rules and Requirements:

1. The robot is to be controlled by an on-board programmable microcontroller, such as LEGO RCX, and powered by 6 AA batteries. The robot should mainly be constructed with LEGO parts and should not exceed 300 mm in length and width.
2. The field is of a rectangular shape with an approximate size of 2.4 m in length and 1.2 m in width. It is surrounded by two side walls of 25 mm in height and two light coloured end walls of 120 mm in height. Each end of the field serves as a base camp, which covers a zone of 300 mm from either end and marked by a base line, stretching across its full width.
3. Obstacles of rectangular shape, 145 mm x 125 mm and 30 mm in height, are placed at strategic locations in the field with a minimum distance of 200 mm apart.
4. The target objects, table tennis balls, are to be delivered one at a time.
5. The robot is to start from either base camp. The target object is to be loaded manually behind the base line before a delivery run. On reaching the opposite camp, the robot is to unload its target object automatically and no assistance is allowed before the unloading. A maximum of two handlers are allowed to assist the robot at the base camps.
6. The robot is given 5 minutes to deliver as many as objects as possible. The robot may be required to perform either solo or head-to-head run, with two teams competing at the same time. Destructive strategy is not allowed.
7. No adjustment is allowed in the open field during the run. The robot must be brought back to the base camp and restart when being inactive, disabled or out of control in the open field.
8. Permission may be granted for 1 recess (10 minutes) and it carries a penalty of 2 minutes on the competition time.
9. In the event of a tie, the robots are required to perform a single delivery and the robot with the shortest time will be ranked the highest.
10. Each school can submit 3 entries and no cloning (identical design) is allowed. Entry closes two weeks before the competition. The robot must pass inspection at the beginning of the competition. Further details are available from the official web site.

