

## ELECTRO PARKING

### STORY BEHIND ELECTRO PARKING:

#### Problem Statement:

Teams have to build an autonomous robot which can follow a black line to find the right parking spot (End zone) by analysing the path in minimum possible time.

#### Arena:

It consists of the following:

1. The arena is composed of random paths made up of blackstrips.
2. All the distances will be shown in track (will be uploaded a day before the event).
3. The width of all black stripes will be 30mm.

**Note: The dimensions of the arena will be accurate to within 5%.**

#### Gameplay:

1. The bot has to start from the starting point and finds its way to the 'End' through the best possible path in a minimum time. The 'End Zone' has a black box (indicates available parking space) as in Fig 1.
2. There will be white boxes in track that indicate parking spot is full, as in Fig 2.

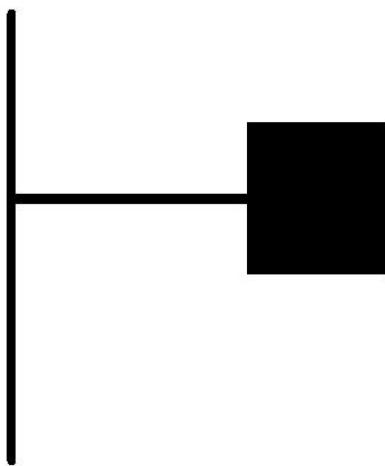


Fig. 1

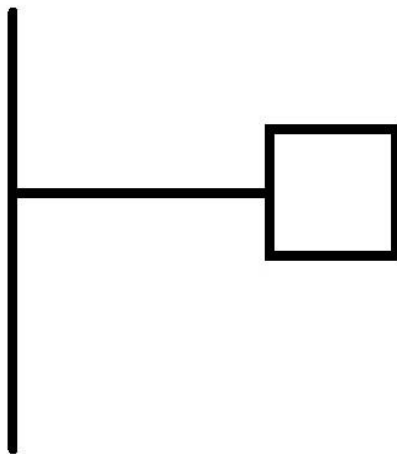


Fig. 2



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### **Checkpoints:**

1. Track has different CP (check points), on successfully passing CP, team will be awarded bonus points.
2. If bot goes out of the track, then it has to be placed on last CP.

### **BOTSPECIFICATIONS:**

1. The autonomous bot must fit into the box of dimension 220mm X220mmX 220 mm (l x b x h).
2. Bot must have on board power supply.
3. During the run, the autonomous bot must not damage the arena in any way. It is not allowed to leave anything behind or make any marks while traversing the arena. Any bot found damaging the arena will be immediately disqualified. The final decision is at the discretion of the organizers.

### **Game Rules:**

1. Team will be given a maximum of 1 minute for calibration.
2. Only one autonomous bot per team is allowed.
3. When the autonomous bot starts, none of the member will be allowed to touch the bot or enter the arena.
4. At the start of the task, the bot will be placed at the starting point. Only 1 team member is allowed to be near the game field while starting the bot.
5. Run will start only when organizers give the signal.
6. The starting procedure of the bot should be simple and should not involve giving bot any manual force or impulse in any direction.

### **Restarts:**

1. The participants are allowed to take a maximum of 1 restarts in the entire match.
2. If the bot takes a restart in the competition, it has to start from the start zone of the arena (few points may be deducted).
3. Once timer starts it will not be paused in any case.
4. During a restart, a contestant must not feed information about the arena to the bot. However, contestants are allowed to adjust sensors(gain, position etc.) and make hardware changes.
5. The contestant must not alter the bot in any manner that reduces its weight (e.g. removal of a bulky sensor array or switching to lighter batteries to get better speed). The organizers reserve the right to arbitrate in such circumstances.



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### **General Rules:**

1. Only 1 member of the team is allowed to handle the bot.
  2. Participants are not allowed to keep anything inside the arena other than the bot.
  3. Laptops/personal computers are not allowed near the arena. Another Wi-Fi, Bluetooth, etc. devices must be switched off. The organizers hold the right to check for these devices and their usage and disqualify the team.
  4. The time measured by the organizers will be final and will be used for scoring the teams.
  5. Time measured by any contestant by any other means is not acceptable for scoring.
  - 6. In case of any disputes/discrepancies, the organizers' decision will be final and binding.**
  - 7. The organizers reserve the rights to change any or all of the above rules as they seem fit.** Change in rules, if any will be highlighted on the website and notified to the registered teams.
- Note: Teams are not allowed to take photograph or record the run.**

### **Team Specifications:**

A team may consist of a maximum of 4 participants. Students from different educational institutes can form a team.

### **Eligibility:**

All students with a **valid Student identity** card of their respective educational institutes are eligible to participate.

