

RENAISSANCE'18

Robo-Soccer

1. Introduction

For all those who have passion in Robotics or Sports, RENAISSANCE'18 presents robo-soccer. This competition is to show how good and swift robot of yours can be by playing soccer using it and scoring more goals.

2. Problem Statement

The task is to build two wired/wireless remote controlled robots which can push the ball to opponent's arena or opponent's goal, which can have kicking mechanism in it.

3. Event Rules and Specifications

3.1. Event Structure

There will be two stages – Preliminary Stage and Knockout Stage. Preliminary Stage There will be two robots per team, and robots of one team will be in one side of arena. At each side of arena there will be a set of same colored balls. The robots of a team have to push the balls in the opponent's arena. The teams winning in the preliminary stage will move to the knockout stage and the losing team will be out of the competition.

Knock-Out Stage

One robot of each team will be the defender and the other will be the striker. The team which scores maximum number of goals within the given time in football-type arena will win the match.

3.2. Arena

Arena of Preliminary stage

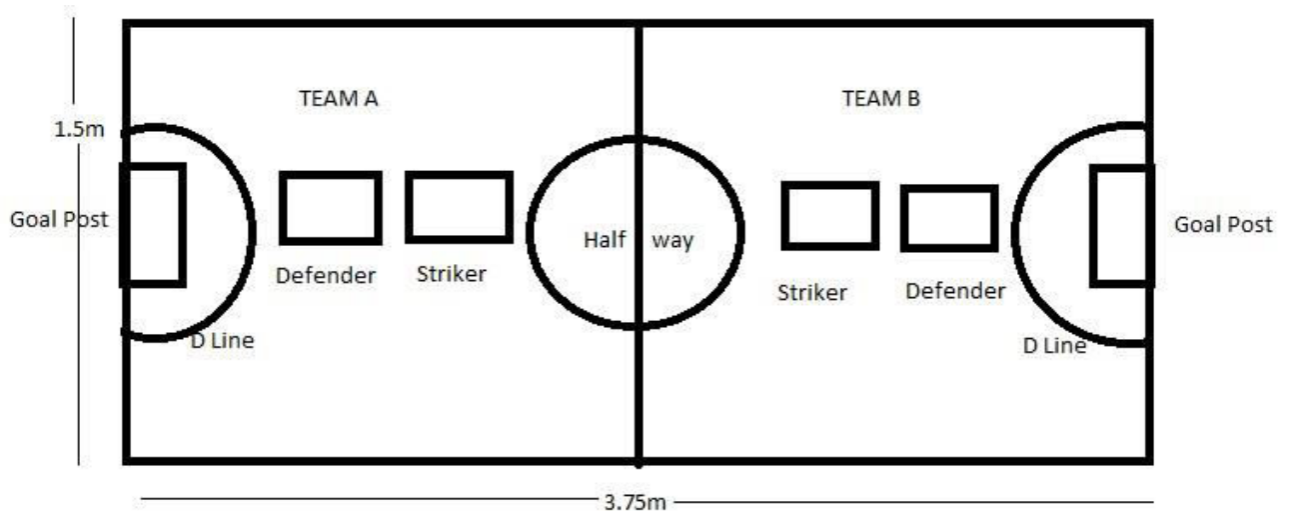
NOTE: - This is a sample overview of Arena given below. You can find arena not as simple as shown here. It may be more complex.

Arena of Knock-Out Stage

3.3. Team Size

- Students from different colleges can form a team. A team may consist of at least 2 members and should not exceed more than 5 members.
- The students must carry their valid student ID cards of their college which

they will be required at the time of registration.



- Teams should participate with two wired or wireless robots. Only one team member can control one robot. Participants shall not be allowed to be a part of more than one team.

3.4. Eligibility

Any student from a recognized institute/college can participate in this event.

3.5. Rules

General Rules:

1. The robot will get input signals wired/wireless from outside the arena.
2. Only one team member can control one robot throughout the event. So, at one time, only two team members will be controlling the robots.
3. No ready-made components should be employed in making the robot.
(Except controllers)
4. If any team is found harming the arena, the team will be disqualified on the spot.
5. In case of wireless robot, it should contain its own power supply of 12V.
6. Our team will not be responsible for any damage done to the robot in the arena.
7. Our team will not be responsible for the noises created due to same frequencies in wireless communication between two teams during game.

8. Teams have to be present on scheduled time and delay will not be entertained.
9. In case of any discrepancies, the decision of the event coordinators will be final.

Preliminary Stage:

1. The teams will have to push maximum number of balls from their arena to the opponent's arena.
2. At the same time, teams must also try to push opponent's ball into to the opponent's arena.
3. At the end of given time, team which has the maximum number of ball at the opponents arena will be judged as the winner.
4. There will be some Partitions in the Arena with different weightage of points and at the end of the time marks will be given according to the position of your balls.
5. In this stage your main aim is to push maximum number of falls to opponent's arena. So, you can use your both bots as defender or striker.
6. The preliminary stage will have two halves, each of 3 min with a break time of 1 min between the two halves.
7. Any team member is not allowed to touch the robot during the match except during break time.
8. In case of tie, additional 1 min will be provided for competing.

Knock-Out Stage:

1. The team should score maximum number of goals in order to win the game.
2. Kicking mechanism can be used here to pass or to score goals.
3. In this stage, you have to use one of your robot as striker and another as defender.
4. The knock-out stage will have two halves, each of 4 min with a break time of 1 min between the two halves.
5. The striker can move in the whole arena but can't go inside the D line of opponent's arena whereas the defender of your team cannot cross the half way.
6. The striker of Team A can make a goal only by hitting the ball from outside of D Line of Team B and vice versa. In case the robot crosses the D Line then there will be negative marking.
7. In case of tie, additional 2 min will be given for competing. If tie still persists, judges will decide the winner on the basis of performance.
8. In case the robot of Team A gets stuck to robot of Team B during the match then all the robots will be replaced to the starting position. Violation of any of the above rules will lead to disqualification

3.6. Specifications

1. Dimensions of the robot should be 30cm x 30cm x30cm. (l x b x h)
2. Weight of the robot should not exceed 2 kg.
3. Any mechanism of robot should not damage the arena.
4. Any mechanism should not be used to harm opponent's robots.

5. Maximum voltage in the circuit should not exceed 12 Volt DC at any time.
6. Current should not exceed 2 Amperes for both wireless and wired.
7. The RPM of motors used to make the robots should not exceed 300 RPM.
8. To avoid noises between the wireless communication during event, team can use remote of 2.4GHz. (optional)

All decisions taken by the organizing team will be deemed as final, and no more changes will be encouraged, thus holding the full authority to change any of the above rules as per circumstance.

5. Contacts

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