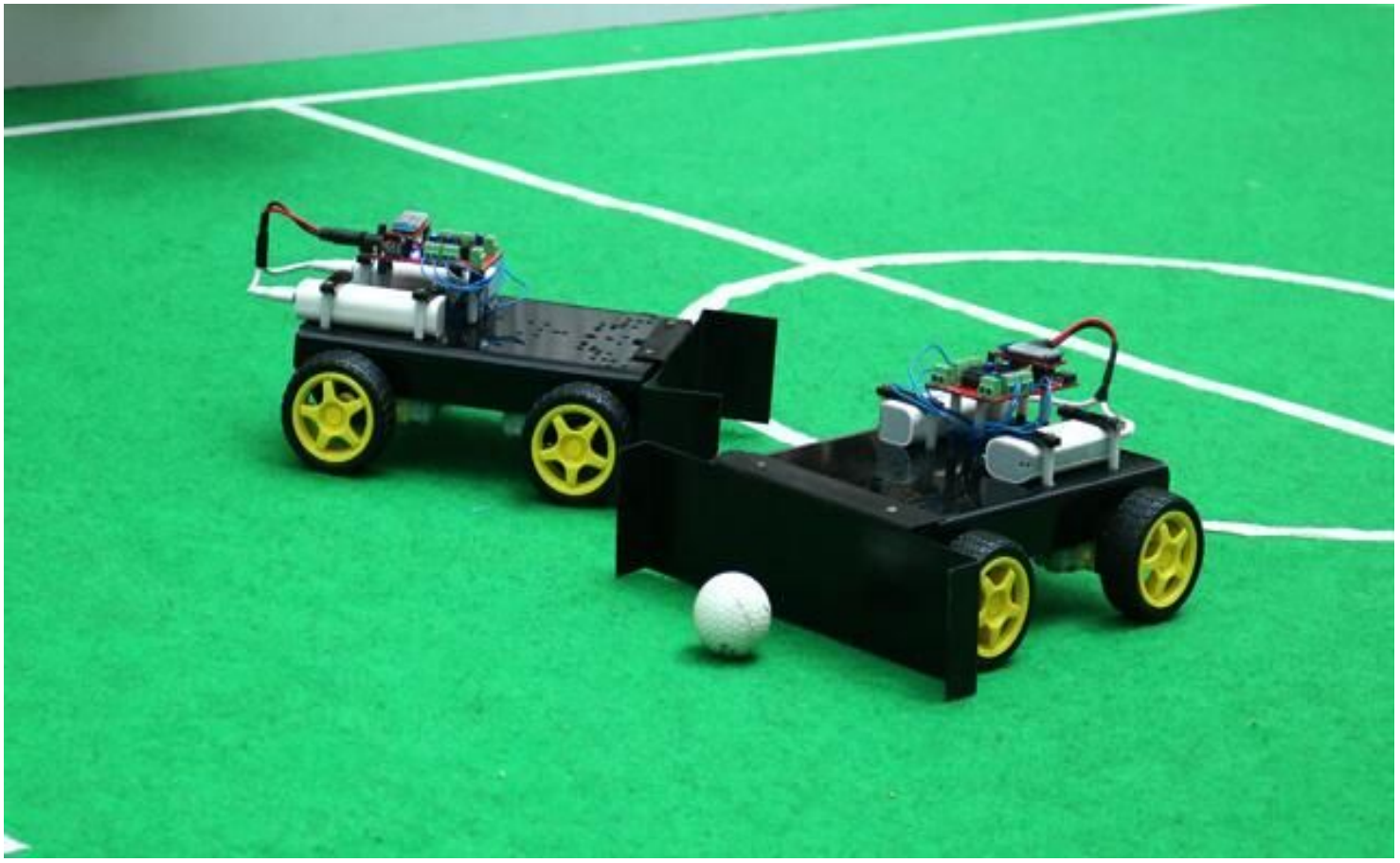
INDIAN INSTITUTE
OF INFORMATION
TECHNOLOGY, KOTA

ROBO-SOCCER



CONTENT

1. Introduction

For all who have passion in Robotics or Sports, FLAIR-FIESTA'19 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 coloured 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.

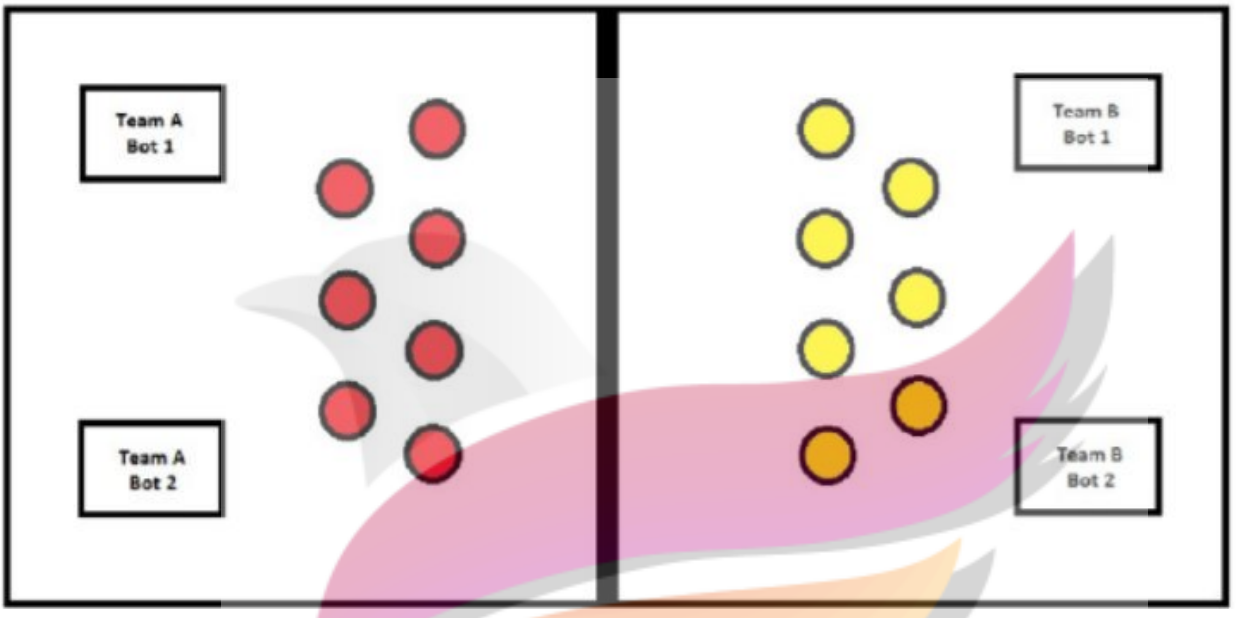
Knock-Out Stage

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

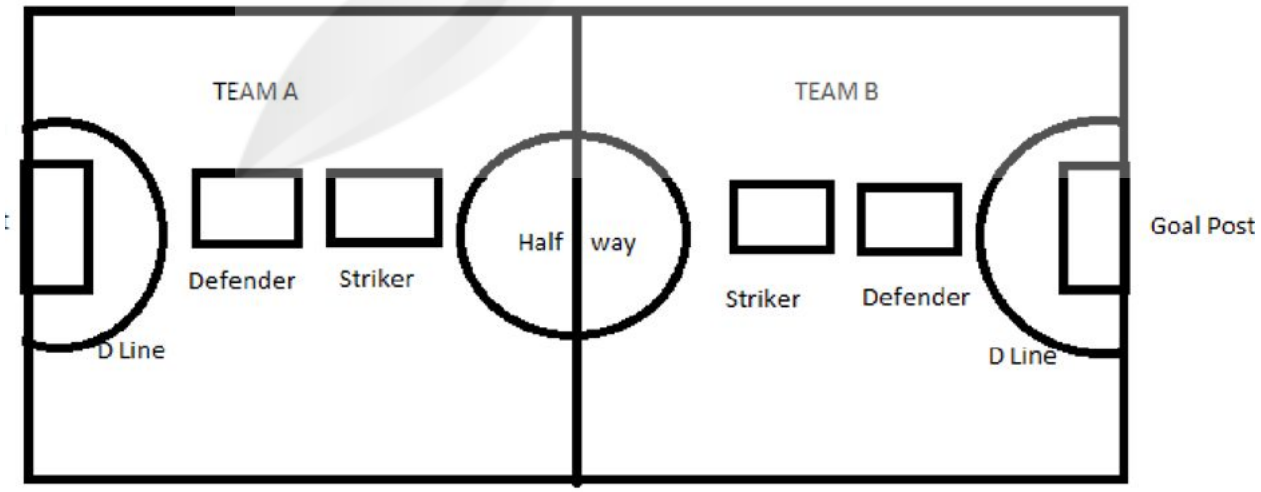
3.2 Arena

Arena of Preliminary Stage:

NOTE: - This is a sample overview of Arena given below. You can find Arena not 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 valid student ID cards of their college which they will be required to produce at the time of registration.

- Teams should participate with two wired/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

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 readymade 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.
6. DC Power supply of 12V, 2A will be provided by the FLAIR-FIESTA Team (Power Adapters).
7. Flair-Fiesta team will not be responsible for any damage done to the robot in the arena.
8. Flair-Fiesta team will not be responsible for the noises created due to same frequencies in wireless communication between two teams during game.
9. Teams have to be present on scheduled time and delay won't be entertained.

10. 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 the opponent's ball back to the opponent's arena.
3. At the end of given time, team which has the maximum number of ball at the opponent's arena will be judged 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 balls 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 bot during the match except during break time.

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 bot 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 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 bot crosses the D Line there will be negative marking.
7. In case bot of Team A gets stuck to bot of Team B during the match then all the bots will be replaced to the starting position.

Violation of any of the above rules will lead to disqualification.

3.6 Specifications

1. The robot must easily fit into a box of 25cm x 20cm x 20cm (l x b x h).
2. Any mechanism of robot should not damage the arena.
3. Any mechanism cannot be used to harm opponent's robots.
4. Maximum voltage in the circuit should not exceed 12V at any time.
5. Current should not exceed 2 Amperes for both wireless and wired.
6. The RPM of motors used to make the robots should not exceed 200. The rpm of motors would be tested by us using Tachometer.
7. To avoid noises between wireless communication during event, team can use remote of 2.4GHz. (Optional)

4. Judging Criterion

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 circumstances.

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