

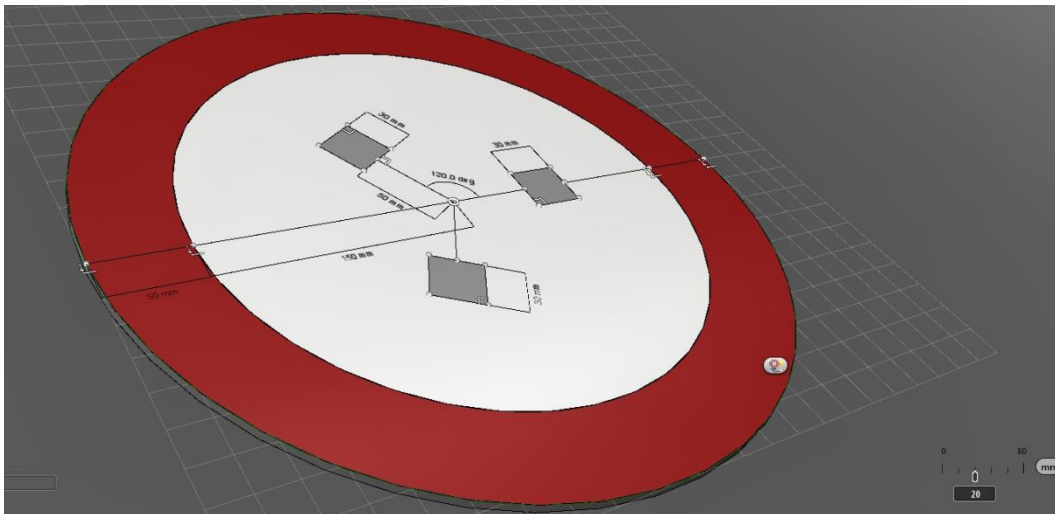
## **Sumo**

### **The Task**

Fabricate a manually controlled robot to push your opponent's robot out of the arena.

### **Arena**

- The arena will be a circular disc with a diameter of 200cm and height 5cm.
- It will have two concentric circles of diameters 150cm and 200cm dividing the arena into two zones: the inner white zone and the outer red zone.
- A 30mm wide center line is provided which divides the arena into two equal halves.
- The three starting zones are 30cm x 30cm squares equally spaced from the center of the circle and at  $120^\circ$  to each other



### **Machine Specifications**

- The machine must fit in a box of 30cm x 30cm x 40cm at the start of a match; its dimensions can change as the contest proceeds.
- Potential difference between any two points in the circuits must not exceed 18V (DC) throughout the contest. Use of non-electric power sources is not allowed for locomotion, you may use them for any other purpose provided it conforms to the other rules.
- The total weight of the machine must not exceed 4 Kg.
- Weight of the batteries will not be included in the weight of the machine.
- The control system can be wireless or wired; however the teams must themselves take care of all interference issues in case of wireless systems.
- Machines which disintegrate during a match or damage the arena shall be immediately disqualified.
- The decision of the organizers shall be final and binding in case of any disputes. If you find any loop hole in the rules, it's always better to have its legitimacy verified by us instead of being disappointed at the venue.

### **Event Structure**

- The event shall consist of two stages: the preliminary stage and the elimination stage.

- Top 16 teams from the preliminary stage will qualify for the elimination stage, points scored in the prelims being the criteria for advancement.

### ***Match Rules***

- Every machine must start from its starting zone at the start of a match.
- Points scored will be the sole criteria for advancement to the eliminators.
- Each preliminary match would involve 3 teams and would last for 4 minutes.
- A team will be awarded 10 points for each opponent pushed out into the red zone of the arena. Entering the red zone on your own would attract a 10 point penalty.
- Pushing a machine out of the red zone would be worth 200 points.
- Based on the points scored in the preliminary stage, one-on-one death matches would be conducted for the top 16 teams.
- Each eliminator shall last for not more than 3 minutes, after which points scored in the match according to the above scheme shall be used as the tie break criterion. If there is still a tie, then 1 minute re-matches shall be used as the tie break.
- A machine is said to have been eliminated if it is pushed out of the red zone.
- No team is allowed to touch the robots in between a match, however if all the participants of the match agree then hand touches can be allowed after which each robot must start again from its respective starting zone. Please note that the timer and points counter shall NOT be reset.

### ***General Rules***

- The teams must report on time for their slots failing which they shall be immediately disqualified.
- Only two members of the teams will be allowed to handle and operate the robot.
- Stepping onto the arena without the consent of the organizers is strictly prohibited, failing which might lead to disqualification.
- The teams must pass a security check of the robots prior to a match; use of flammables, explosive, combustive or otherwise hazardous processes is not allowed.
- Participants are not allowed to keep anything inside the arena other than their robot.
- Use of radio jammers or anything that disrupts the control of other robots is strictly prohibited. Only the points and time recorded by the organizers shall be considered and their decision shall be final and binding in case of any disputes.
- The organizers reserve the right to change any or all of the above rules without prior intimation, however any change shall be reflected over here and promptly communicated to all registered participants.

### ***Team Composition and Registration***

- A team must not have more than 4 members.
- Each team member must produce a valid ID card of his/her respective educational institute at the venue.
- A team can comprise of members from different educational institutes.
- A team once registered cannot register again, even with a different name.