

TECHFEST 2022-23 ROWBOATICS

TASK

To design and build a manually controlled boat that has to sail through the obstacles in the arena and complete the race task before the other boat. The boat should compulsorily be wireless and powered by batteries. Wired boats are **NOT** allowed.

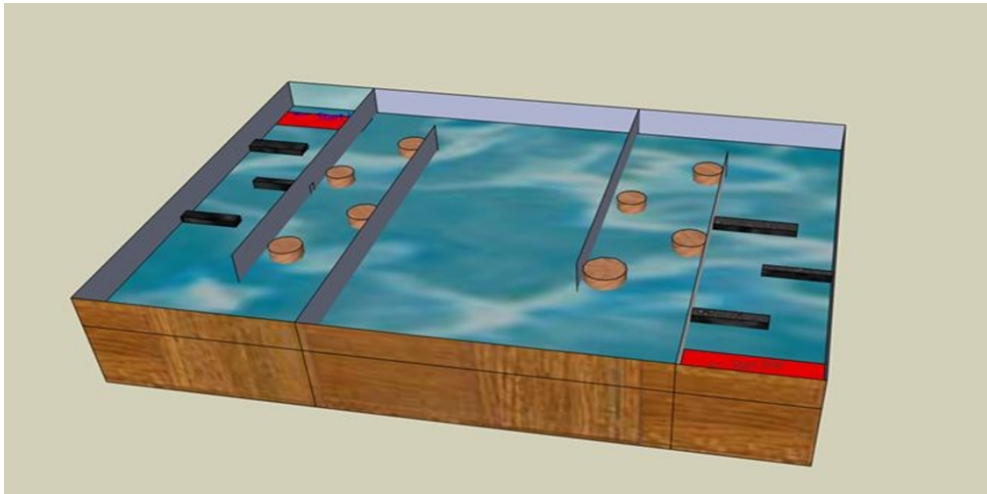
CONSTRAINTS OF THE ROBOT

- The robot must totally fit into a **400mm**(length) x **200mm**(width) x **200mm**(height) cuboid i.e the robot should strictly be smaller than a cuboid of the given dimensions.
- No external power supply is allowed. Participants are allowed to use only an on-board power supply. Teams shall bring their own power supply for all its machines.
- Using Lego kits or any other ready-made mechanism for the construction of the robot is strictly not allowed. Violation of the stated rule will imply disqualification of the particular team.
- The robot must not harm other robots or the arena. Any team found to violate this may be disqualified from the competition.
- The robots should not contain any corrosive, harmful or combustible substances due to safety concerns.
- There should be an emergency stop button on the robot that pauses it when it is pressed in unpleasant circumstances.

ARENA

The arena consists of certain obstacles and checkpoints carrying predefined points. The robot should be able to navigate through the obstacles with utmost stability while maintaining an appropriate pace.

- The arena will be a tank having water, in which two boats will race to reach the finish line first.
- Each passage will be around 45cm wide.
- A robot completes a task after having reached the finish line, to the other end of the arena.
- The obstacles will be of the following type:
 1. Type A: Fixed bar floaters placed at constant gaps through which the robot has to manoeuvre, as shown in the illustration.
 2. Type B: Fixed cylinders through which the robot has to navigate.
 3. Type C: There will be some other obstacles in the actual competition.



- ★ The figure shown here is only meant to give an idea of the obstacles and hence in no way represents the number of obstacles in the final arena. As mentioned earlier, surprise obstacles may be introduced in the arena at the time of actual competition.

RULES

- Laptops/personal computers are not allowed in the vicinity of the arena. Other Wi-Fi, Bluetooth, and other such devices must be switched off.
- Only the time measured by organisers will be final and considered for scoring. Time measured by the participants by any means will not be accepted in any case.
- During the event, the organisers shall not be responsible for any damage caused to the robot.
- **Any rule is subject to change during the event such as the length of the game or increasing or decreasing the number of objects, etc.**

GENERAL RULES

- The team has to compulsorily register online on the official website of Techfest.
- After registration, a Team ID will be provided to each team which shall be used for future references.
- **In case of any disputes or discrepancies, the decision of the organisers or judges shall be treated as final and binding on all.**
- The design presented by the teams should be original (not protected by means of patent/copyright/technical publication by anyone).
- Changes, if any, will be notified to the registered participants through mail. However, the latest information will be that which is on the official website of Techfest, at any particular time.



NOTE

- +/- 5% error dimensional error may be there in actual track.
- There might be a surprise obstacle carrying certain bonus points.

TEAM SPECIFICATIONS

- Only students with a valid identity card of their respective institutes are allowed to participate in the competition.
- A team can have a maximum of 4 members.
- Students from different institutes can be a part of the same team.

STRUCTURE

The competition is divided into 2 stages:

Stage 1: Abstract submission- Every team is required to submit their design for the robot, which should also contain a detailed description of the key components of the design. The submissions which satisfy the specifications given in the problem statement will be qualified for the second stage which will be informed to the teams through the mail. There are no restrictions on design and you can think like an unconventional thinker. Selected teams will move to stage 2.

Stage 2: The teams shortlisted will compete in Round 1, to be held at Techfest i.e mid of December, and those qualified in Round 1 will further compete in Round 2, also to be held during Techfest.

- **Round 1:** This will be a knock-out round in which 2 teams will have to compete in the given arena, starting from two opposite ends. The boat which reaches the other end first will be considered eligible for Round 2.
- **Round 2:** Teams successfully clearing Round 1 will compete against each other in Round 2 for the final positions.

REGISTRATION AND SUBMISSION

- The Participants have to register on the official Techfest Website and fill in all the necessary details: www.techfest.org > Competitions > RowBoatics > Explore More > Register or may directly register on techfest.org/competitions/rowboatics.
- Submission Format- The project report should be emailed to rowboatics@techfest.org with the subject RowBoatics Report: Team Id (For example: RowBoatics: RB12345678).



TIMELINE

Last date for registration	30th October, 2022
Last date for submission of abstract submission	30th October, 2022
Results and shortlisting of teams for Stage 2	6th November, 2022
Final round - Stage 2 competition	16th-18th December 2022

CERTIFICATE POLICY

E-Certificates of participation will be given to the teams scoring more than the critical marks which will be decided later. (top 60% of teams except for top 3 teams)

PRIZE MONEY

The Prize money will be awarded to the **top 3** Winners via NEFT and will be processed within **30** working days after receiving the Prize Money from Sponsors.

The Winners have to mail the following information (immediately after the announcement of the results) to abhishek@techfest.org .

Subject: RowBoatics, team id - your position (example RowBoatics, RB12345678 – 1st position)

Body of mail-

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code