



RC CAR CHALLENGE

TEAM SPECIFICATIONS:

Teams will be formed of
1. Each team will consist of maximum 4 members. Team leader of each team will be responsible for all activities of that team.
2. Maximum two members can enter in the arena during the match.
3. Team members must be undergraduate students from any university.
4. Team members from different universities are allowed.

Car Specification:

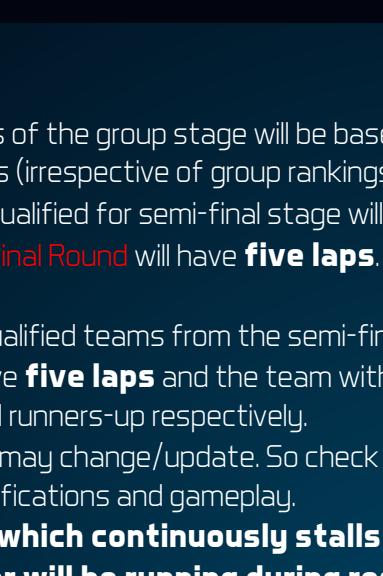
Ready made RC Cars bought from supermarkets or online stores are strictly prohibited.
All bots have to be manually controlled. Inclusion of autonomous technology is **NOT** permitted.
All bots have to be wireless. Bluetooth, WiFi, radio communication is permissible. **Jammer devices are not allowed.**

Communication method:

Teams should use any of the following wireless communication method to avoid interference, hacking or jamming.
1. Bluetooth: Any Bluetooth transceiver (e.g. HC-05, HC-06) paired with cell phone/tablet/laptop. It's recommended to change the default password of your Bluetooth transceiver.
2. RF: Only nrf-905 and nrf-24L01 with pairing address. You have to show your pairing address to the organizers so that it can be made sure that no one else is using that address.
3. Wi-Fi: any kind of Wi-Fi module can be connected to the robot. Organizers won't provide any Wi-Fi network.
A team should create their network using laptop/router.
4. Wireless joystick/gamepad with USB host extension of microcontroller.
5. Any RC radio having changeable frequency of channels



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Contact event coordinators if you are planning to use any other forms of wireless communication not mentioned here.

ESC or micro-controllers are permissible. Racers can upload/change the code wirelessly before/during the race.

1. Dimension limitations are as follows:
Length - Maximum of 30 cm
Width - Maximum of 25 cm
Height - Maximum of 25 cm
2. Maximum allowed weight of the bot is specified as 5.00 kilograms.
3. The bot has to carry its own power supply. Separate power supplies are NOT allowed.
4. Maximum node voltage between 2 connections is 12V.
5. Belt driven cars are not allowed.
6. Use of weaponry and design which may cause damage to the track/opponent's bot or which adds an unfair advantage - is strictly prohibited.

Ratifications of Cars:

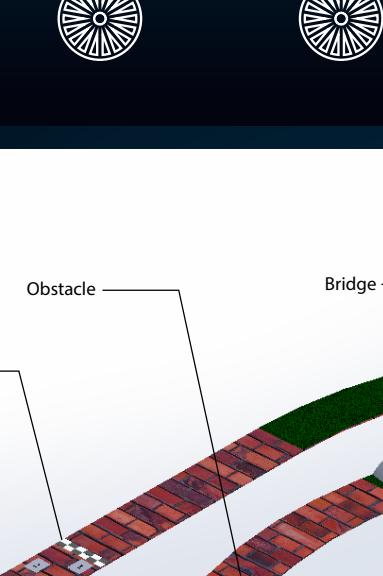
Every participating car has to submit itself to the tests of ratification.
• The tests of ratification consist in verifying that the dimensions of the robot correspond to the technical specifications and the other specifications mentioned in "car specification".
• Any robot not satisfying the tests of ratification will be excluded from the competition.

Race Rules:

1. Registered teams will be divided into groups
2. The **first stage** of the race will be **Qualifying Round**, where each bot in their respective group will complete one lap of the entire track and total lap time will be recorded. Maximum time limit for any car to finish the qualifying round is 4 minutes.
3. The results of the qualifying round will be based on the fastest total lap time. The bots will be placed sequentially at the start line in second stage based on their qualifying lap time. The bot with the fastest qualifying lap time will gain pole position in the next group stage race.
4. The **second stage** of the race will be the **Group Stage Round**, where all the bots of each group will race each other for three laps. Maximum time limit for any car to finish the group stage round is 10 minutes.



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Out of track:

1. The car will be considered out of track if all four wheels leaves the track boundary. The car can instantly rejoin the race.
2. Our volunteers will bring the car back to the track as soon as possible at the point where it has flipped or gone out of the tracks and the car can rejoin the race instantly.

RESTARTS:

A team can ask for a restart at any time.
If the car concedes a restart it can start from the same point or any location behind the point.

Point Calculation:

Time will not be calculated manually but with camera.
Point will be calculated from Semi-final and Final round.

Point earned = 600 * (Total time) - (Restart*5) - (Out of track*5) - (intentional hitting)*10

Disclaimer:

1. Any judgmental decision taken by the judges will be Final regarding the penalties and gameplay. The organizers hold the right to change/modify any part of the problem statement during the event after prior notice to the participants and each participant is bound to agree to their decision. Any disrespectful behavior will result in immediate disqualification.
2. "TRACK Dimensions" of the arena may vary up to 10%
3. The following compartments could lead a team to be disqualified:
 - Evidence of disrespect to other teams and competitors.
 - Evidence of disrespect to security rules.
 - Evidence of disrespect to competition judges.
4. Competition judges are not part of the competition committee. They are assisted by the competition committee members, but remain completely independent for their decisions.
5. Participating teams are always responsible for the safety of their robots and are liable for any accidents caused by their team members or their robots
6. The teams must bring their own multiplugs and car components.

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