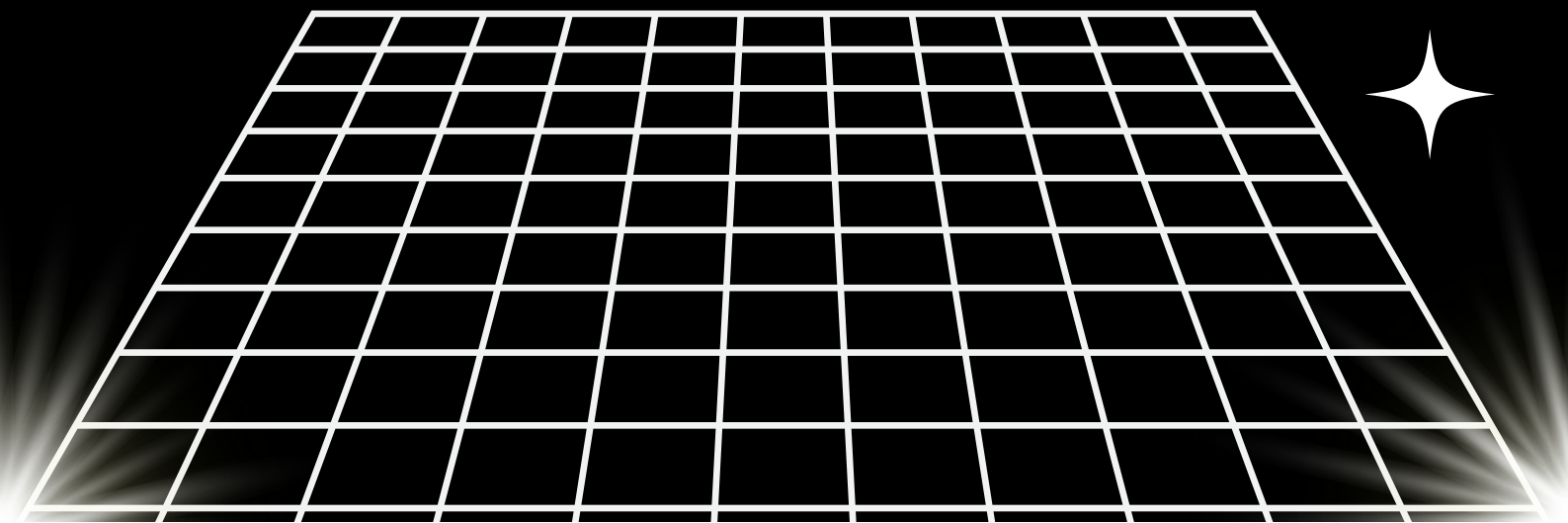SOCIETY OF MECHANICAL ENGINEERS

RC-CAR

RULE BOOK

TASK

The basic task is to Design and make a wireless or wired Remote Controlled (RC) Car Powered by batteries and using a DC motor for power and another motor for steering purpose. The participant can design the vehicle in whatever way they want. The car will be racing on an off-road dirt track installed with some obstacles. The results will be announced on the basis of the performance in four rounds.

DESIGN SPECIFICATIONS

Dimensional Specifications

The maximum cap on the dimensions is that the vehicle should fit in a box of 50(l) x 50(b) x 35(h) in cm. The bot exceeding the following dimensions will be disqualified in second round. These dimensions need to be strictly followed.
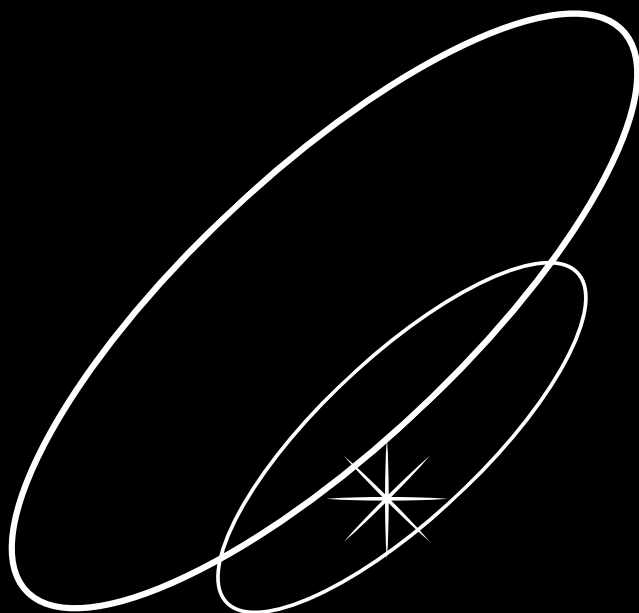

Tires

- Tires must strictly be made of rubber only
- The tread can be of any design.
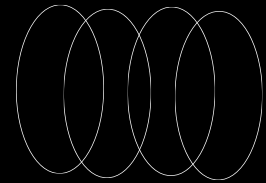- Cutting or modifying the tread is allowed.

Battery

- Batteries cannot be charged or changed during a race. Batteries can be changed or charged after a particular race, in the time slot of 30 minutes.
- If there is a requirement of a charging point, it needs to be conveyed to the organizers before the event. There will be limited charging port.
- All batteries and connectors will be inspected before the event.
- ·Teams will be responsible for the proper disposal of batteries that are no longer usable.
- ·No batteries should be discarded in ordinary trash containers, and should not be abandoned at race sites.
- ·Lithium Polymer battery packs can be used.

Miscellaneous Specifications

- Maximum weight of the Bot should not exceed 5kg.
- The maximum Power supply shouldn't exceed 12V and 7.2A.
- For a wired bot, the length of Bot should be at least 5m
- For a wireless bot a dual frequency system is preferrable with maximum frequency 2.4 GHz.

COMPETITION DETAILS

TEAM SPECIFICATIONS

- Any team can participate in RC car event conducted by Techniti, NIT Jalandhar. A team may consist of a maximum of 6 participants. These participants may or may not be from the same institute.
- Team Representative: Each team must specify their team representative (leader) at the time of online registration via website. All the important communications between Techniti and the registered teams will be done through their team representative.
- The team representative and other members must submit their valid contact details (phone number, email ID, etc.) at the time of registration.
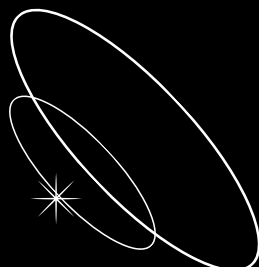
REGISTRATION

The teams need to register before the deadline set by the organizers. All further instructions will be communicated with the course of time.

SUBMISSION OF DESIGNS

- Participants have to submit a video of their RC car in working condition before the deadline.
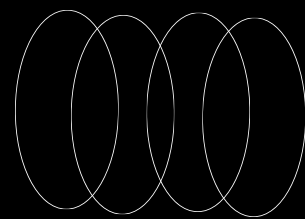- Minor changes in the RC car are acceptable at the time of offline event.

EVENT GLIMPSE

COMPETITION STRUCTURE AND RULES

COMPETITION WILL TAKE PLACE IN FOUR ROUNDS.

Round 1
- It will comprise of online submission of the video of the RC car in working condition. Teams failing to submit this video will automatically be considered out of competition.

Round 2
- It will be a physical inspection of the bot. The bot must comply with all the conditions listed above. Any bot failing to do so would be given a time of 30 minutes to correct the shortcoming, failing to do the needful would lead to disqualification of the team.

Round 3
- Round 3 will be an elimination round. In this round there will be actual racing of cars with each car completing 2 laps.
- The time taken for doing the same will be noted by the time keeper at the side of track.
- The cars will be selected on the basis of time taken by them to complete 2 laps.
- In this round out of all the participating teams, 6 teams* will be selected for next round.
- In case a clash is there (for example if cars at fourth and fifth position complete the laps at the same time then) both cars will be allowed for the next round.

Round 4
- Round 4 will be the most interesting round of the event, The Decisive Round. In this round the candidates selected in third round will compete on a new track with some additional obstacles.
- The candidates will have to make 3 rounds of the track.
- The time taken to complete each lap will be noted.
- The positions will be decided on the basis of time taken to complete the task.
- In case of conflict of timings, the average time taken to complete one lap will be considered as the deciding factor.

General Rules

- The cars will not be allowed to loose parts on any part of the arena during race. Any machine disintegrating during the race will be disqualified.
- There can be at a maximum of only one member of a team on the track at the time of race.
- To avoid clash of frequency at the time of event it will be mandatory for everyone except the member controlling the car running at track to keep their remote controllers switched off.
- No components will be provided at the time of the event.
- In the scenario where the car tumbles or halts during the race, only member controlling the car can look into the matter. The timer will stop and the participant will be given one minute to make the necessary corrections. Failing to correct the fault in the given time will lead to elimination.

- In case if the car goes out of the arena or prescribed track then the car will have to go to the last check point with an addition of 5 seconds in the timing.
- Even in case of overturning of vehicle, the car will be sent to the last crossed check point. In this case also 5 minutes will be added to the time taken by the car to complete the task.
- The judging criteria will be the time taken by the RC car. Team which completes the race in less time will go to the further rounds.
- In case of any disputes/discrepancies, the organizer and judging committee's decision will be final and binding.

AN IMPORTANT NOTE:

These rules may have some minor changes at the time of event, it will be informed before the event to the team coordinator. However, this rule book is to be followed for all the rules and design specifications.

The teams acknowledge that they have a responsibility to read, understand and abide by the rules of the TECHNITI, NIT Jalandhar reserves the right to prevent any team from competing at any time for any reason (including but not limited to the reasons specified elsewhere in this document). However, we shall inform all registrants in case an updated version comes up (all the registrants to the date of revision). In case of any queries, participants are encouraged to contact.