

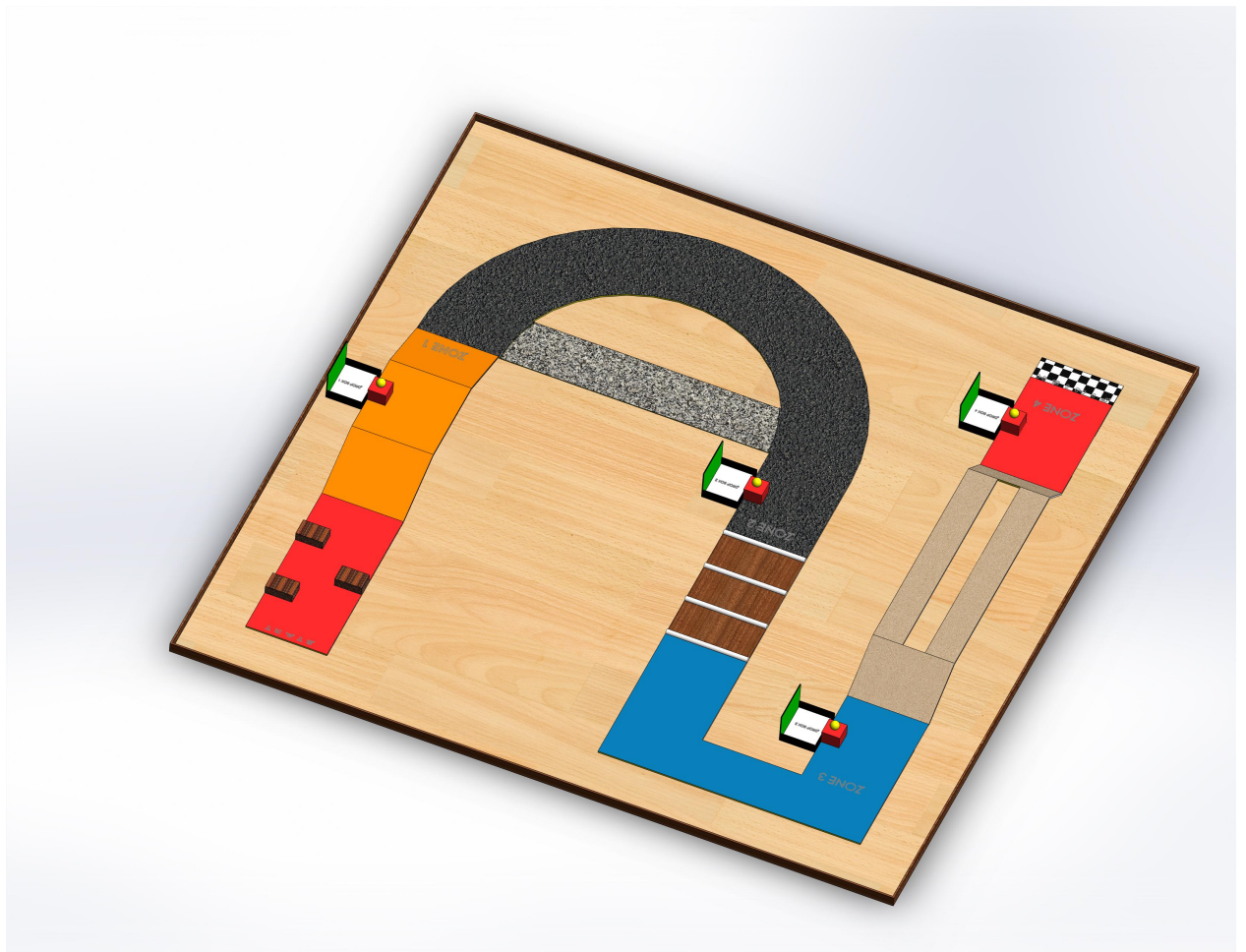
DROID TROOPER

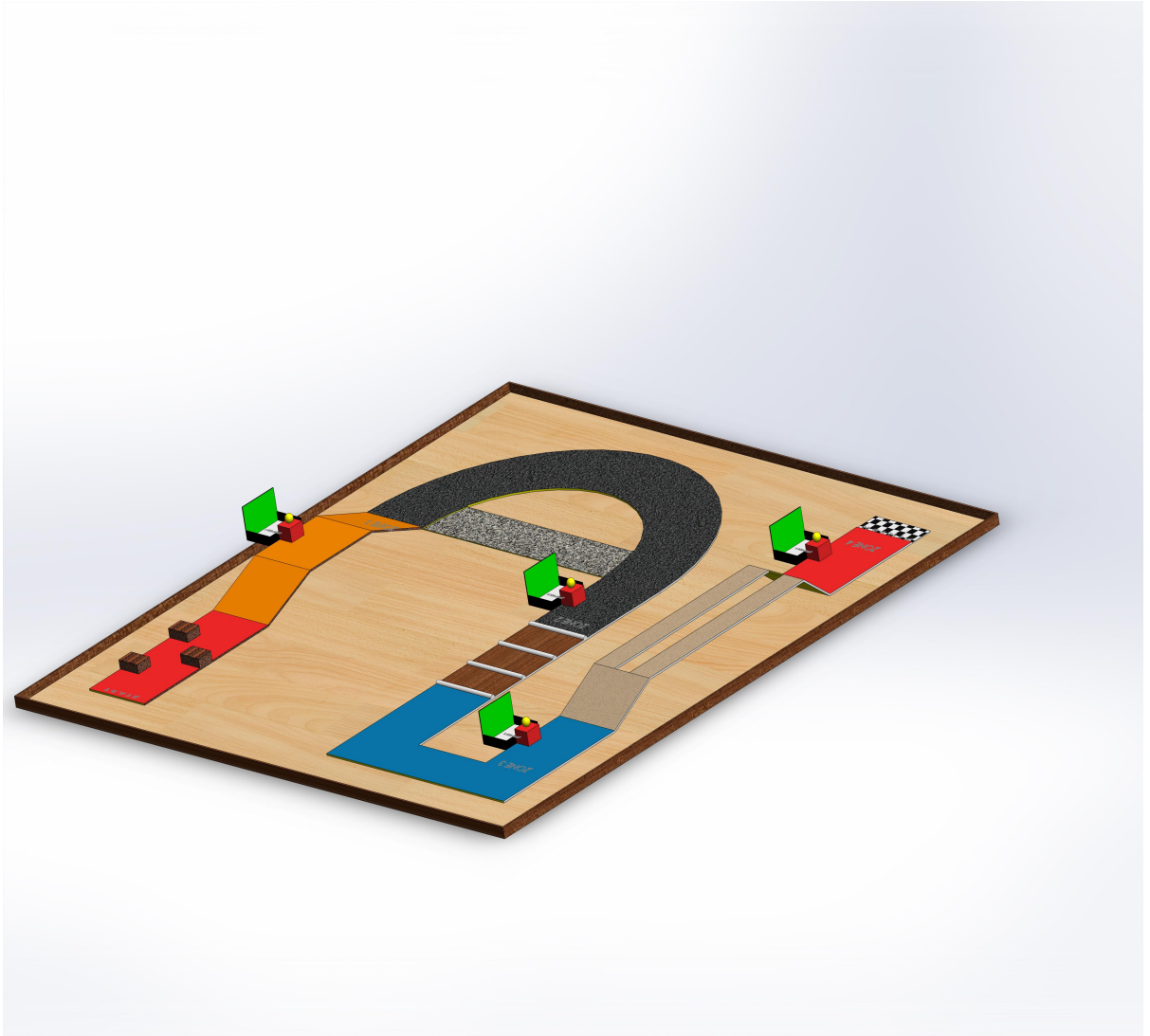
TASK

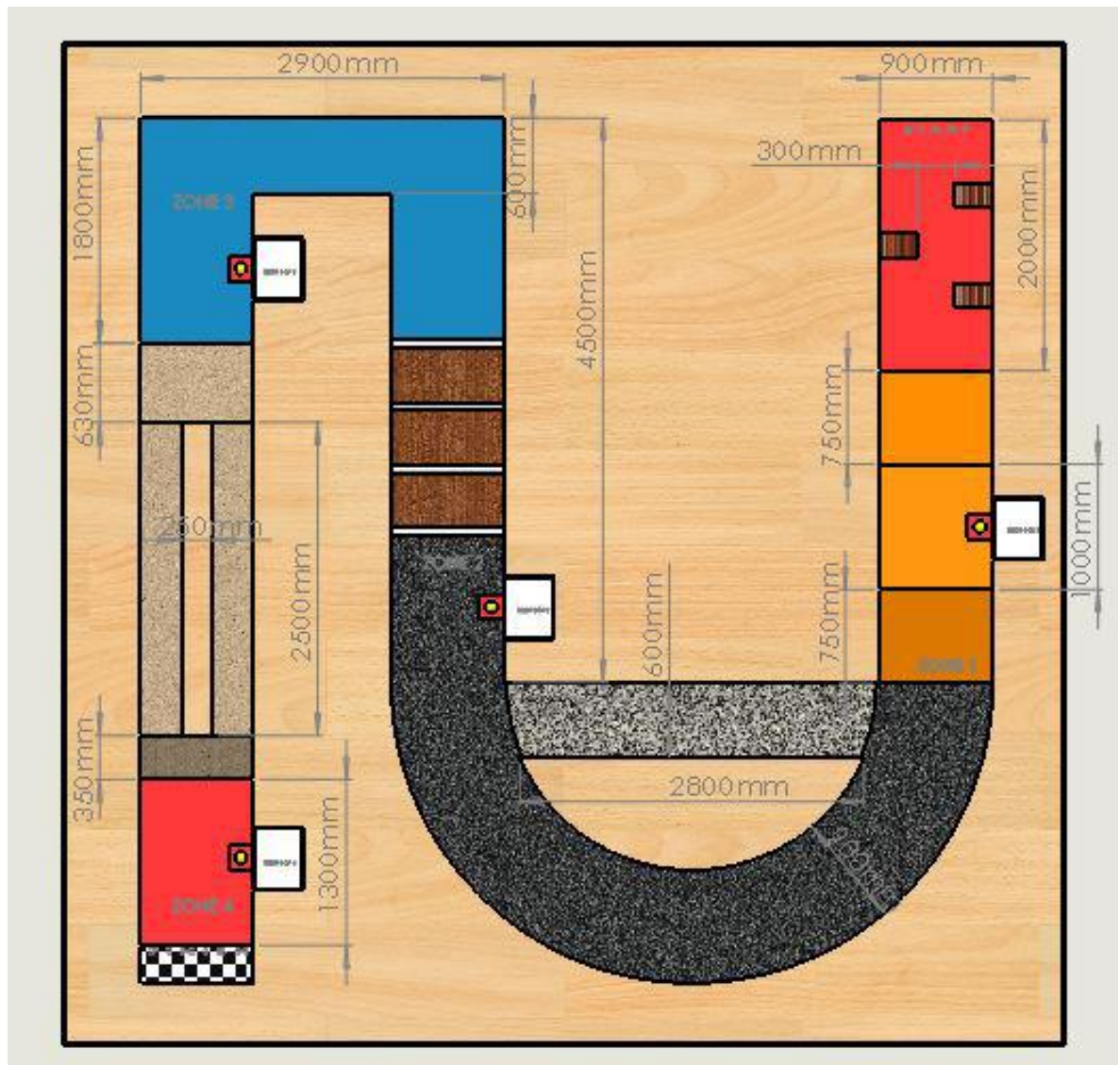
- > The teams have to build a manual robot (wired or wireless) which has to hit balls in the drop boxes at different locations in the track after crossing different terrains which is divided into zones.
- > The teams will be awarded points for putting the balls in drop boxes and also crossing the zones in the stipulated time limit.

ARENA

The schematic views of arena is as follows

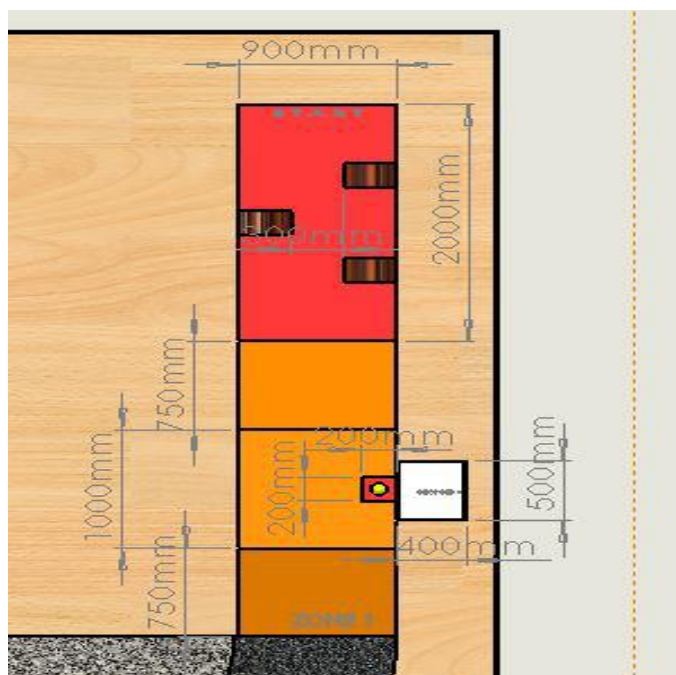
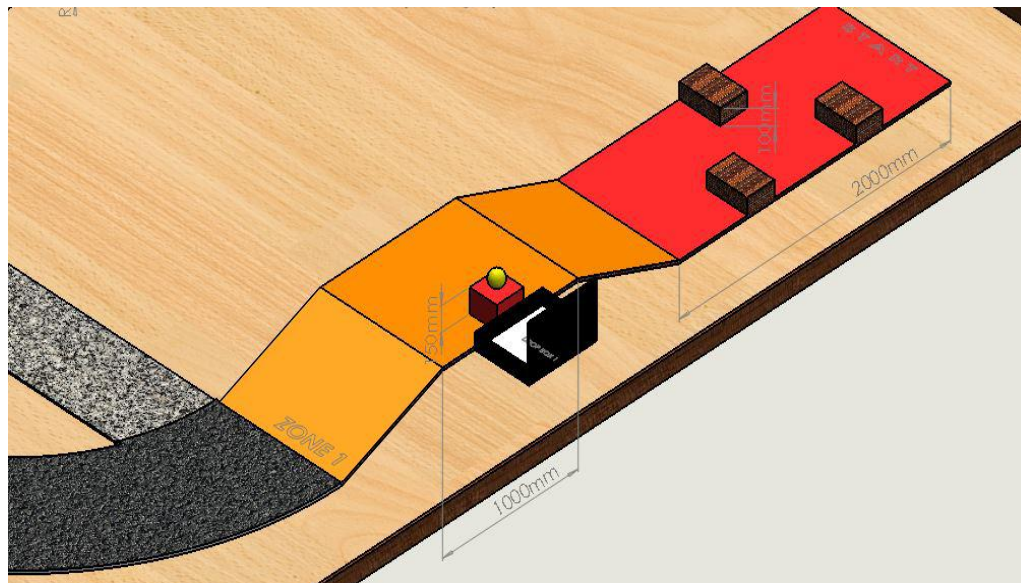




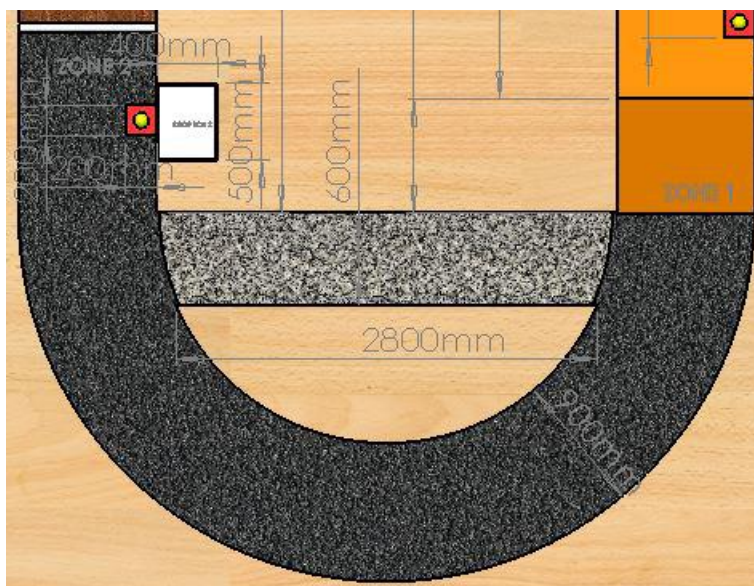
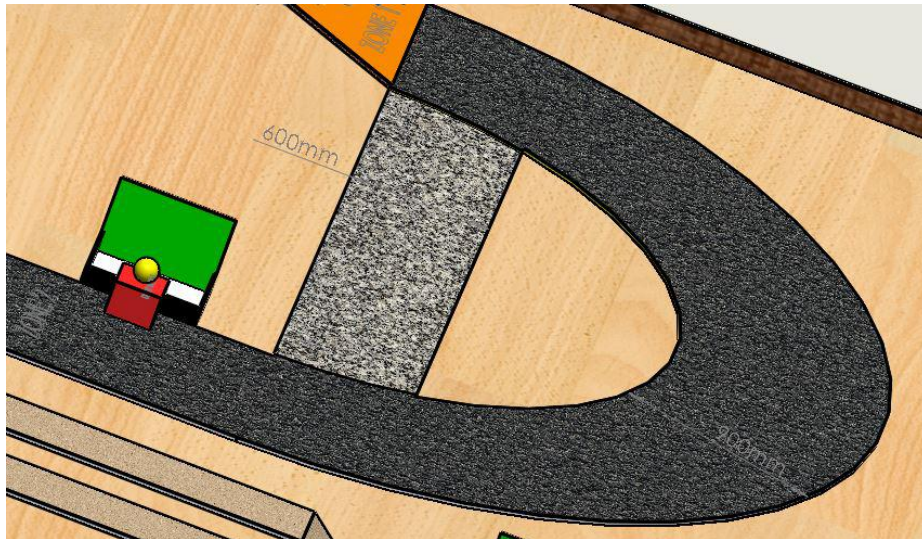


The arena consists of four zones which are as follows:

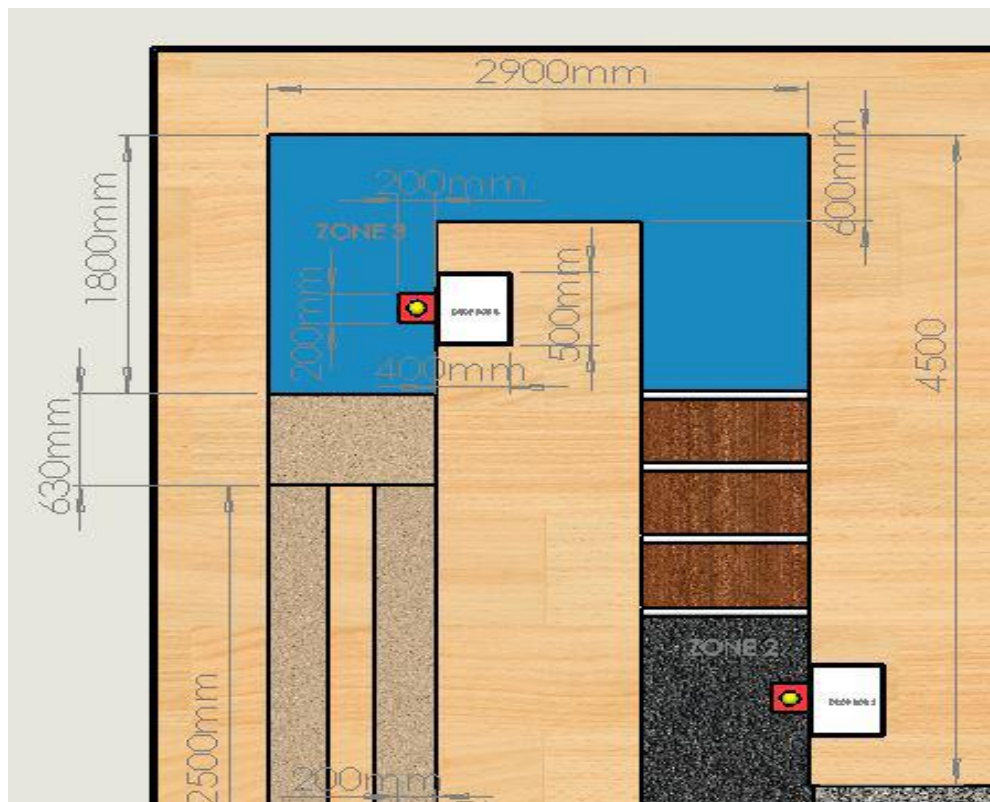
1. ZONE 1: It consists of the start line and a plain track with three blocks at certain distances following a slope of 20 degrees(both sides). At the top of slope is placed the first ball.



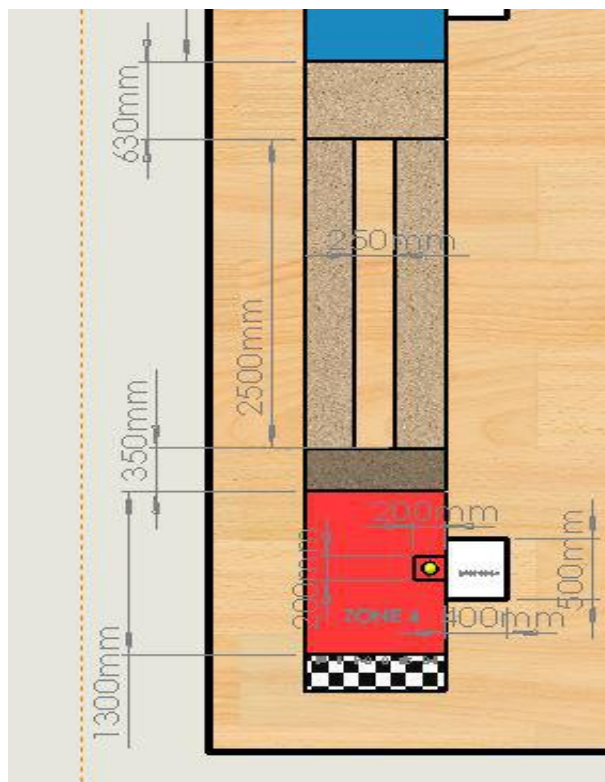
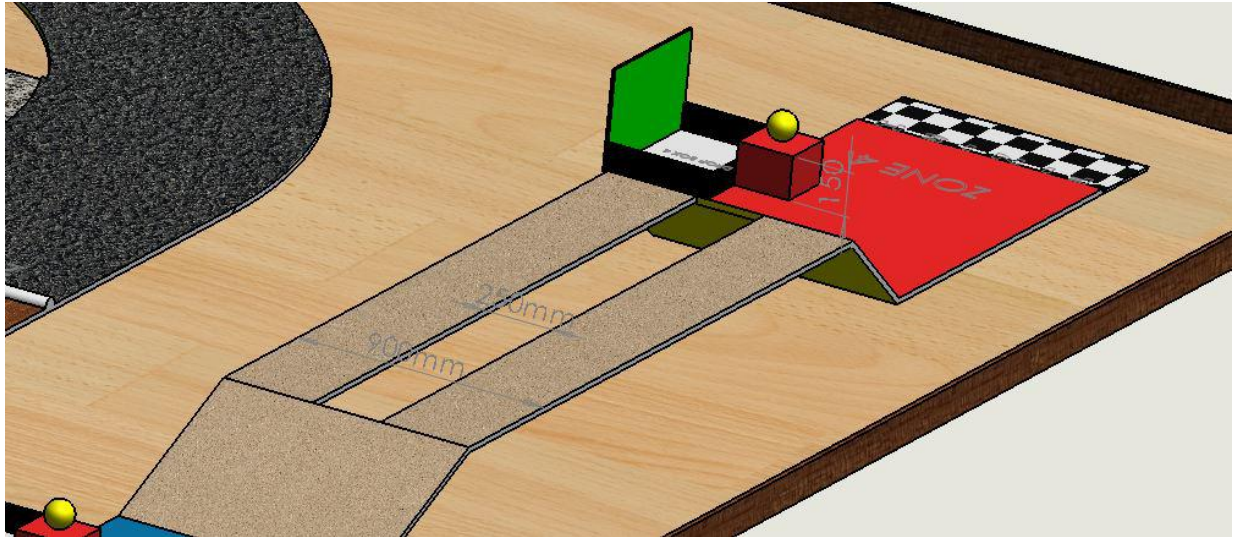
2. ZONE 2: There are two paths which come under ZONE 2, one is the straight path where the terrain is very rocky and other is a curved path where the terrain is less rocky and easier to traverse than the first one but the bot has to travel a larger distance. Hence the team can choose any of the paths. At the end of this zone second ball is placed.



3D perspective view of the experimental setup. The setup includes a blue water channel (ZONE 3) with a green screen and a red cube with a yellow ball. Dimensions are labeled: 900mm, 500mm, 350mm, 500mm, 150mm, and R300mm.



4. ZONE 4: This zone comprises a gaped bridge of upward inclination 25 degrees and downward inclination 40 degrees which is covered with sand, here the contestants should make sure that bot should travel such that its left wheels are on one side and right wheels on other side of gap. The fourth ball is placed at the end of the bridge, then comes the finish line.



NOTE : The dimensions of the ball stands are 200mmX200mmX150mm and the dimensions of drop boxes are 500mmX400mmX350mm (lXbXh) respectively.

GAMEPLAY

- >The bot should start from START line only.
- >The bot should move onto the next zone only after placing the ball in the drop box.
- > The bot should not go out of the boundary lines at any cost.(There will be penalty for it).

BOT SPECIFICATIONS

- > The maximum dimensions of the bot should not exceed 300mmX300mmX250mm.
- > The bot should be manual.
- > Any type of control including wired, bluetooth, RX TX etc can be used.

GAME RULES

- >The bot would be checked for safety before starting and will be disqualified if found unsafe for other participants.
- >Only one team member is allowed to handle the bot.
- > The bot will be liable for disqualification if it causes any kind of damage to the arena.
- >The bot should have a proper hitting mechanism to place the ball in the drop box.
- >If a bot gets disoriented in any zone then it can be placed in its original position but it has to start from the beginning of that zone.There will not be any penalty for it.
- > The total time given to cross the track is **4 minutes**.
- > Once the timer starts there will be no stop to it unless the bot has reached the final line or the time limit is crossed.
- > The team which scores most points will qualify for final round.
- > **In case of any disputes / discrepancies, the organizers' decision will be final and binding.**
- > **The organizers reserve the rights to change any or all of the above rules as they deem fit.** Change in rules, if any will be highlighted on the website and notified to the registered teams.

POINTS ALLOCATION

The points are allocated as follows:

1. Crossing the first zone: 10 points
2. Placing the first ball: 15 points
3. Crossing the second zone: 20 points
4. Placing the second ball: 30 points
5. Crossing the third zone: 30 points
6. Placing the third ball: 45 points
7. Crossing the fourth zone: 40 points
8. Placing the fourth ball: 60 points

POINTS DEDUCTION/PENALTIES

Points will be deducted in following cases:

1. If the bot goes out of the track: -25 points
2. If the bot hits any block in first zone: -10 points
3. If the bot falls off the sand bridge: -20 points
4. If the bot is unable to traverse the track in 4 minutes: -1 point per second after 4 minutes.

QUALIFICATIONS

Top 4 teams with maximum points will be selected for further round and in case of a tie the least time will be taken into account for deciding the better team.