TECHFEST 2023-24
PRAGYAN K-12
(ROBOSOCCER)

TASK

• Teams have to build a manually controlled Robo-soccer bot, which should be able to push or drag the ball in opponents goal, without gripping.

BOT SPECIFICATIONS

• The dimensions of the bot should be less than or equal to **300 mm X 300mm X 300mm** (lxbxh) and the bot should be under **5Kg**. failing which the team will be disqualified from the competition (the dimensions includes tires). An error of (±5%) is permitted.
• The bot must be controlled manually.
• Teams can use both wired as well as wireless control mechanisms. In the case of wired bots, the length of the wire should be a minimum of **2 metres** so that the wire remains slack at any instant of time. If the participants use a wireless mechanism they have to use either a dual-frequency remote, Bluetooth, or Wifi.
• The dimensions of the remote are not included in the size constraint of the bot.
• The Bot may have an onboard power supply or remote power supply any case.
• Participants are not supposed to use any readymade Lego components or readymade gripping mechanism. However, the participants are allowed to use ready-made gear assemblies.
• The mechanism used should be such that only one person will control the bot.
• Failing to meet any of the above specifications will lead to immediate disqualification.

POWER SUPPLY

• The participants should use an electric power supply i.e. the powersource should be on the bot or kept outside the arena. The power source must be non-polluting and must satisfy the safety constraints determined by the organizers.
• In the case of an electric power supply, the voltage between any two points should be less than or equal to 12V DC at all times during the run.
• AC power supply will not be provided and cannot be used in the competition.

ARENA

- Arena Dimensions: 10 feet X 6 feet.
- Goal post Dimensions: 24 inches X 12 inches.
- Penalty arc chord width: 2 feet 2 inches.
- Centre Circle diameter: 24 inches.
- The arena will have a plywood base with a green coloured carpet surface for the pitch.

GAMEPLAY

- At the beginning of each half, the ball will be kept within the center circle (see figure), and both bots must be outside the circle, within their own half of the arena. The team which wins the toss will decide, whether it first wants to attack or defend.
- The team which attacks will start from ¾th ground. The bot which will defend will start from the corner of the ground in his allotted half.
- After every goal, the ball will be placed within the circle and both bots must be outside the circle, within their own halves. The defending bot will be at ¾ from ground and the scoring bot will be at the corner of its own half.
- Each match will consist of two halves. The duration of a half will depend on the type of the match as follows:
    - Initial knockout matches – 2 minutes
    - Quarter and Semi-final – 3 minutes
    - Final – 4 minutes
- In case of foul, the non-fouling team must start the match from the center circle. Theother team must stay in its half till the play starts.
- In case of a draw, the tiebreaker will be as follows. Additional 2 minute time will be provided to play in which bonus will not be considered. The game will start at thebeginning of the half, and both bots may now enter the circle once play starts. Whicheverbot scores more goals, wins. If a foul is committed during the tiebreaker, the fouling teamis disqualified and the other team wins.
- If no winner is declared even after the tiebreaker (maximum time of play is 2 minutes), then the golden goal rule will be used to break the tie. Whichever team scores first shall be declared winner. In this case also if a foul is committed the opposite team will be declared winner.
- If a team earns a lead of five goals, it will be declared as the winner of the match.

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. No other team member is allowed to enter the arena.
- The bot will be liable for disqualification if it causes any kind of damage to the arena.
- The soccer bot can only transform to its size at the beginning. It cannot divide into multiple separate parts.
- Each team will be given a time span of 2 minutes at the beginning of each half to check the bot and fine tune. Referees will check the robot after every modification.
- If the bot becomes immobile during the match, the team will first be given 60 seconds to fix it, without any loss of points. If the team fails to fix it in 60 seconds, another 60 seconds will be given at the expense of 2 points. If the team does not repair the bot within this time, then that bot will be disqualified.
- No stalling of any kind is allowed.
- All bots must have their own power supply.
- Bots will be analyzed by the referee before a match. He will select or reject bots, taking into consideration the rules and dimension limits.
- The match will be paused in case of any entanglement of wires of both the bots.
- Any clamp in the structure of the bot should not grip the robot.
- The bot should not lift the ball in the air.
- In case one team is disqualified, the other team may be asked to play again.
- The decisions taken by the referees will be final.
- In case of any disputes, the decisions of the referees or event managers will be final.

- **The organizers reserve the right 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.

SCORING

- 3 Points for every goal scored.
- After 3 penalties, 1 point will be deducted for every penalty further.
- If the bot is immobilized during the match, 60 seconds will be provided, post 60 seconds, 2 points will be deducted for every minute.
- Winner will be decided on the basis of final points.

TEAM SPECIFICATIONS

- A team may consist of a **maximum of 4 members.**
- Students from different educational institutes can form a team.

ELIGIBILITY CRITERIA

- All students with a **valid identity card** from their respective educational institutes are eligible to participate.
- Students should fall under K-12 segment, strictly.

CERTIFICATE POLICY

- E-Certificates of participation will be given to all the teams present on the day of the event.
- Physical certificates will be provided to top 10 teams.

PRIZE MONEY

- The Prize money will be awarded to the **top 3 Winners** of the Final Round via physical cheques, and will be presented at the closing ceremony of the event.
  The Winners have to mail the following information (immediately after the announcement of the results) to info@pragyakalp.com

  Subject: Pragyan K-12 Robo Soccer, team id- your position (example- Pragyan K-12 Robo Soccer, CZ10005- 3 rdPosition)

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