



TECHNOXIAN IRAN

The **12th**
National Student and Open
robotics Competition **RobotixIran**

First **TechnoXianIran** International Competition

KISH-IRAN-2025
DATE: 23-25 June

WWW.ROBOTIXIRAN.COM
WWW.TECHNOXIANIRAN.COM

Robo Soccer (3v3)

Introduction

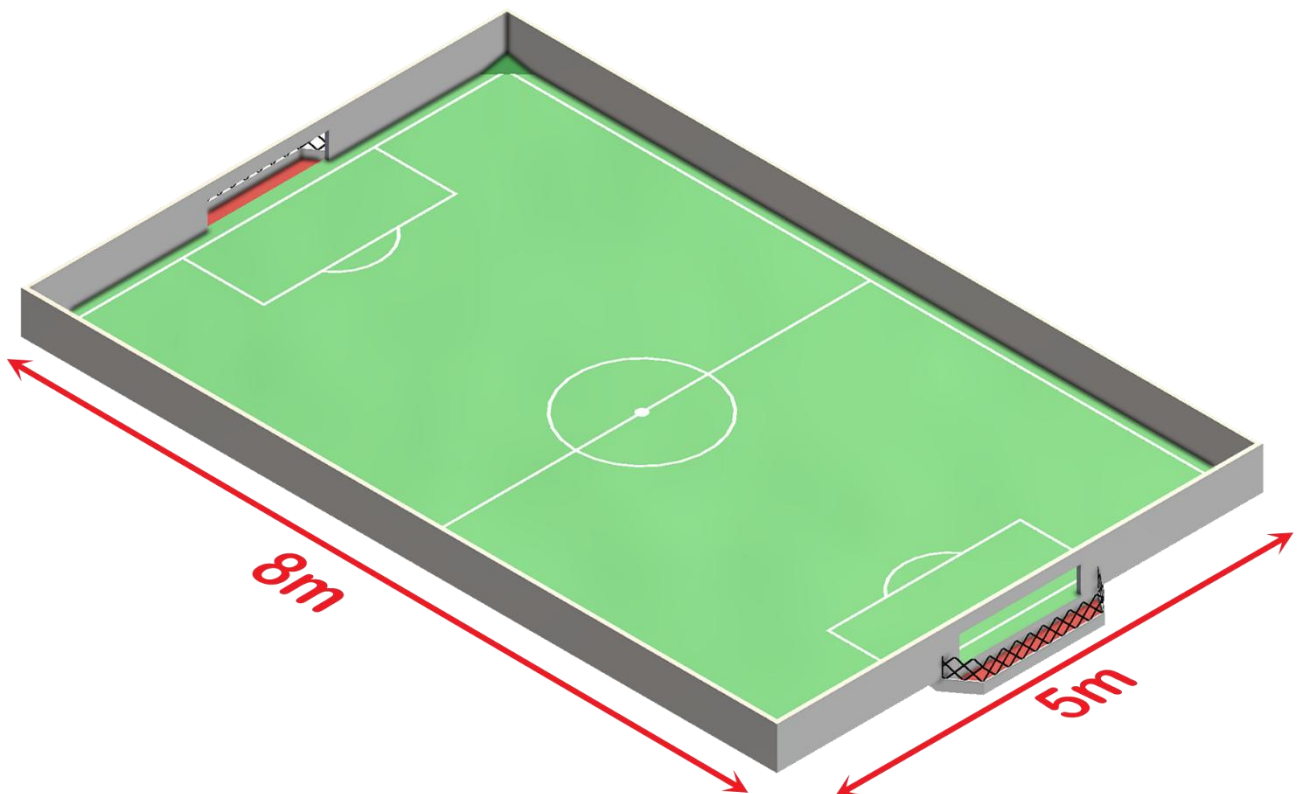
The soccer player robot competition is inspired by professional matches, designed to replicate the precision and skill of human players. Participants create robots capable of skillfully maneuvering and shooting the ball toward the opponent's goal. The event aims to foster creativity, technical skills, and teamwork among young individuals, providing an engaging and competitive environment.

Age Requirements

Participants must be between 8 and 16 years old.

Field Specifications

1. **Field Dimensions:** Approximately 8 meters in length and 5 meters in width, with a $\pm 10\%$ tolerance.
2. **Goal Dimensions:** About 1 meter in length, 60 cm in height, and 50 cm in depth, with a $\pm 10\%$ tolerance.
3. **Ball Specifications:** A ball with a diameter of 6.5 cm and a weight of 55 grams.
4. **Penalty Spot:** Positioned 140 cm from the goal line.
5. **Restart Points:** There are 7 designated points on the field for game restarts. One point is at the center of the field, and six other points are located on both halves.
6. **Field Material:** Carpeted surface.



Robot specifications

- Teams must build a robot capable of being remotely controlled to score goals against opponents.
- The robot's design is up to the team's creativity but must mechanically support ball movement and goal-scoring. For goal-scoring capability, the robot must include a ball-kicker mechanism.
- **Robot Quantity:** Each team must have three robots, one of which will act as the goalkeeper.
- **Robot Identification:** Robots must be labeled with numbers 1, 2, and 3. The goalkeeper must specifically be identified with the number 1 in order to make it easy for the referee to recognize.
- **Shooter Mechanism:** Robots must have a mechanism (kicker) to strike the ball; without it, participation is not allowed.
- **Dimensions:** Maximum dimensions are 30 cm (length) × 30 cm (width) × 15 cm (height). The dimensions should allow smooth movement across the field.
- **Weight:** The robot's total weight, including batteries and remote receiver, must not exceed 5 kg (with a 5% tolerance).
- **Power Source:** Robots can use batteries up to 12 volts, without any current limitations. The type of battery can be **gel cell, lithium, NiCad, or dry cells.**
- **Remote Control:** Wireless remote controls are compulsory.
- **Battery and Remote Receiver Installation:** Teams must designate a specific location on their robot for installing the battery pack and remote-control receiver. If this is not done, any consequences, including the robot's disqualification, will be the team's responsibility.
- **Battery Changes:** Battery replacement during the match is not allowed. Teams must ensure fully charged batteries before starting.

Competition Procedure

1. **Team Members:** Each team can have 3 to 5 members as core participants (the supervisor is not counted as a core member).
2. **Team Captain:** Before the match starts, each team must introduce one member as the team captain to the referee.
3. **Infrared Light Usage:** If distance sensors using infrared light are installed on the robots, the emitted light must not interfere with other robots.
4. **Participation in Other Leagues:** Individuals participating in this league cannot compete in other leagues due to the specific conditions of this competition.
5. **Match Duration:** Each match lasts a total of 10 minutes, divided into two 5-minute halves.

6. **Robot Usage:** Participants must use the same robot throughout the competition. Substituting robots during different rounds is not allowed.
7. **Robot Quarantine:** At the start of each round, robots are quarantined by the referee. Teams must prepare their robots, install the battery, and set up remote controls before the quarantine begins.
8. **Player Positioning:** Players must stand in designated areas behind their team's goal and control their robots from there. They are not allowed to leave these areas during the match.
9. **Technical Issues:** If a robot experiences technical issues or malfunctions during the match, it must be removed from the field for repairs. Repairs can be made outside the field, and the robot may re-enter the game with the referee's permission during a stoppage.
10. **Robot Stuck:** If two robots get stuck and fail to move effectively for 10 seconds, the referee will pick up the ball without stopping the game and place it at the nearest restart point to the incident (this point is determined by the referee's decision). The match continues without any interruption.
11. **Referee Commands:** When the referee announces a “stop,” all robots must immediately stop moving. When the referee announces “run,” the robots may resume play.
12. **Robot Arrangement:** One robot must act as the goalkeeper, while the other two robots act as attackers. The goalkeeper robot is restricted to a designated area (its own half of the field), while the attacker robots are free to move across the entire field.

Warnings and Penalties

1. Yellow Card:

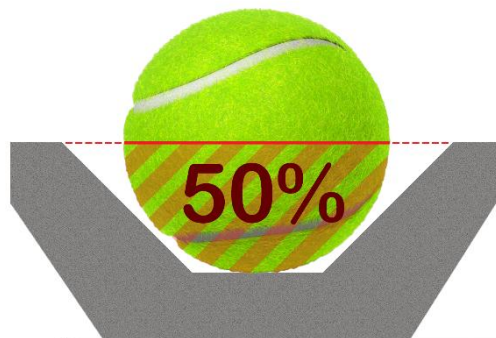
- The goalkeeper receives a yellow card if it completely crosses the centerline into the opponent's half.
- Robots causing damage to the field or other robots are penalized with a yellow card.
- Players exiting their designated control area will result in a yellow card for their robot.
- If the referee determines that the ball shooter mechanism is not being used properly, they have the right to issue a yellow card to the player's robot.
- Unsportsmanlike behavior, such as intentionally blocking opponents without ball possession, leads to a yellow card.
- If a robot intentionally hits another robot or disrupts gameplay unfairly, it will receive a yellow card.
- If the referee determines that the team is not working collaboratively on the field (e.g., playing individually), the team will receive a verbal warning first. For a second offense, one of the two attackers will receive a yellow card. **(The purpose of this rule is to encourage full team participation to develop better strategies based on football techniques.)**

2. Red Card:

- A player receives a red card after receiving two yellow cards.
- A red card is also issued if a player enters the field without permission or disrupts the match.
- A robot receiving a red card is disqualified from that match, but the game continues.

3. Ball Handling:

- Robots cannot completely enclose the ball. At least 50% of the ball must remain visible when carried by a robot.
- Referees will test ball-handling mechanisms during matches. Robots found violating the rules must be adjusted within five minutes or face disqualification.



Preparation Time: After the announcement of the match start time, each team has a maximum of one minute to prepare. After this one-minute period, the team must be present on the field; otherwise, it will be disqualified.

Score Sheet: The supervisor or one team member must sign the score sheet after the match is completed.

Referees:

- There are three main referees and one assistant referee in the competition.
- One referee is positioned in the center of the field, while the other two act as line judges on the sidelines.
- In emergency situations, such as injuries or other issues, the fourth referee takes over as a replacement.

Scoring Method:

- Competition Format: The competition will be conducted using the double-elimination method.

- **Team Selection:** Opponents are first determined through a draw and then placed in the competition bracket.
- **Match Duration:** Matches will be held in two halves of 300 seconds (5 minutes each), with a 150-second break between the two halves.

Tied games:

- If teams are tied, the game proceeds to extra time (two 150-second halves).
- If a tie persists, the match moves to penalty kicks, with each team taking three shots. Each player must take their penalty shots individually. If still tied, penalties continue in a sudden-death format.

Objections

- Objections must be submitted in the specified forms immediately after the competition or during the round. Late objections will not be considered.
- The final decision on disputes lies with the referees and the organizing committee.
- After the results are announced, no objections will be accepted.

Organizational Chart

- Teams are responsible for staying updated on any rule changes up to one week before the competition.
- Teams must register within the specified timeframe and submit a 1-5 minute video (max 100 MB) showcasing their robot's functionality and their motivation for participating. Videos should be emailed to technoxian.iran@gmail.com.
- Robots will undergo technical inspections before the competition.

Attention: Only one trophy and cash prize will be awarded to the winning team, not to individual members.

GOOD LUCK!