

# RANAVEERA

ISO  
20121:2012



ROBOVEDA  
BOOK

SREENIDHI'S ANNUAL TECHNICAL FEST ★ ISO 20121:2012 CERTIFIED

# ROBOVEDA '24

EXPLORE THE UNWRITTEN LORE...



## RANA VEERA

### 1. GAME AND RULES:

#### 1.1. PROBLEM STATEMENT

1.1.1. Design a wireless, manually controlled robot within the specified dimensions. The robot must effectively combat and defeat opponent bots while protecting itself, all within the given time constraints.

### 2. GAME FIELD AND OBJECTS:

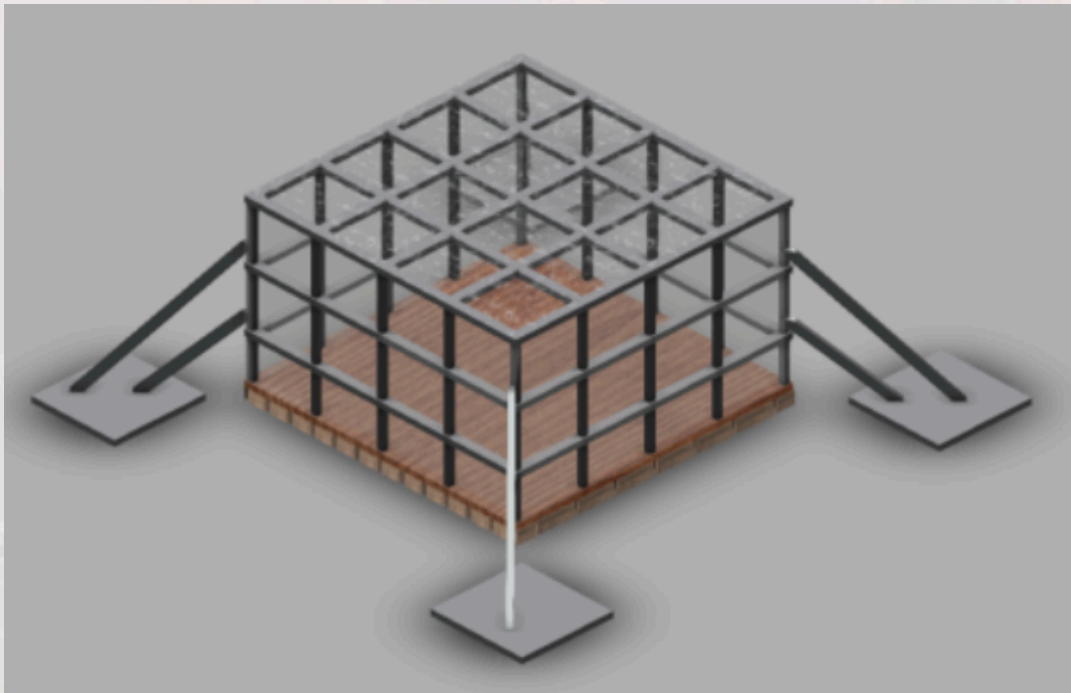
#### 2.1. ARENA

2.1.1. The arena will be a square with dimensions 4.5 \* 4.5 meters (1 \* b).

2.1.2. The arena will be bounded by polycarbonate sheets on all 4 sides, closed with polycarbonate sheets on the top.

2.2.3. Walls may have nails embedded on them.

2.2.4. The exact arena will be disclosed at the time of the event.





### 3. TEAMS:

- 3.1. There is no team limit.
- 3.2. Members of different institutions can form a team.
- 3.3. At most 3 people will be allowed to stay around the arena (one for controlling and the others for assisting). A team is allowed to play with one robot only.
- 3.4. It states that there can't be a change of robot between the match/round.
- 3.5. Ranaveera is an open event. There is no academic criteria to participate.

### 4. ROBOT:

#### 4.1. ROBOT SPECIFICATION

- 4.1.1. The robot must be wireless.
- 4.1.2. For wireless robots, use four-frequency remote control circuits or two dual controls.
- 4.1.3. The dimensions of the field, facilities, and equipment described in this document have an error of plus or minus 5%, unless otherwise stated.
- 4.1.4. The use of pneumatics and hydraulics is strictly prohibited.
- 4.1.5. All precautions must be taken to avoid a direct short of battery terminals, which could lead to a fire accident. Failure to take these precautions will result in disqualification.
- 4.1.6. No external AC power supply will be provided during the game.
- 4.1.7. The use of non-leak-proof batteries might lead to disqualification.

#### 4.2. ROBOT DIMENSIONS

- 4.2.1. The maximum dimensions of the robot should not exceed **750mm x 750mm x 700mm** (length x breadth x height) with a 5% tolerance, including its expanding arms, etc.,

#### 4.3. POWER SUPPLY FOR ROBOTS

- 4.3.1. The electric supply voltage to the bot should not exceed **48V** (5% tolerance) at any point during the game.
- 4.3.2. No external AC power supply will be provided during the game.





## 4.4. WEIGHT

4.4.1. The event will be held in one category:

- Category: 15 kg

## 5. SAFETY:

5.1. All precautions must be taken to avoid a direct shortage of battery terminals, which could lead to a fire accident. Failure to take this precaution will result in disqualification.

5.2. Team members must wear running shoes, helmets, and goggles during a match.

5.3. The use of explosives, fire, water, magnetic weapons, hammers, cutters, nets, glue, radio signal jammers and dangerous chemicals is prohibited.

## 6. THE COMPETITION AND MATCHES:

### 6.1. MATCHES

6.1.1. The players of each match will be chosen at random or will be disclosed during the event.

6.1.2. The total number of matches a team must play will depend on the number of participants.

## 7. COMPETITION RULES:

### 7.1. BASIC RULES

7.1.1. All robots must undergo a pre-check process before competing in the event.

7.1.2. After the pre-check process, the robot design must not be altered.

7.1.3. The qualifying round will be a one-on-one battle between two robots picked at random.

7.1.4. Matches will consist of 3 minutes of active fight time exclusive of any time-outs. Hence, it is not binding but advisable to keep battery capacity, power usage and machine defenses such that they can sustain a 3-minute fight.

7.1.5. Teams must start their robot from the starting line when the referee gives the signal.



- 7.1.6. Clashes are allowed an infinite number of times, but dragging or pushing the opponent's robot is allowed for a maximum of 10 seconds. After 10 seconds, the robots must move apart and return to their respective sides of the arena before the next clash.
- 7.1.7. There must be a 10-second interval between consecutive dragging or pushing.
- 7.1.8. All required accessories must be brought by the participants.
- 7.1.9. No technical assistance will be provided by the event organizers.
- 7.1.10. No practice runs will be allowed.
- 7.1.11. The use of IC engines in any form is not allowed.
- 7.1.12. Human interference (e.g., touching the robot) during the game is not allowed.
- 7.1.13. No external power supply will be provided at the event.
- 7.1.14. Using the same robot for different events will not be allowed, regardless of changes in components or team members.
- 7.1.15. The weaponry should be power-operated and should switch off when the power is unplugged.
- 7.1.16. The coordinator's and Head's decisions will be final and binding.
- 7.1.17. Breaks between matches are not allowed.
- 7.1.18. Using the same robot more than once in the same event will not be allowed.
- 7.1.19. Members participating in one team cannot participate in the same event with a different team.
- 7.1.20. Additional rules may be introduced prior to the match and will be communicated to participants.

## 7.2. SCORING AND PENALTIES

- 7.2.1. The event will be a knockout fight, where bots compete to be the arena winner.
- 7.2.2. The bot that manages to make the opponent's bot immobile will succeed. Immobile means if the bot cannot display linear motion of at least 2 inches within 15 seconds.
- 7.2.3. If a team fails to set up their bot in the arena within 60 seconds, the opponent will be given a walk-over.
- 7.2.4. Points will be awarded based on Attack, Defence, and Strategy.
- 7.2.5. The scoring schema will be disclosed at the time of the event.
- 7.2.6. Arguing with the referee/judge will result in a deduction of points.
- 7.2.7. Any team member touching any part of the bot apart from the controller is considered a violation.







## 8. DISQUALIFICATION:

### 8.1. A team will be liable for disqualification if

- 8.1.1. If argues with the opponents.
- 8.1.2. If fails to obey the instructions or warnings of the referee.
- 8.1.3. If fails to meet the bot specifications.
- 8.1.4. If makes a false start more than three (3) times before the referee's signal.
- 8.1.5. Any kind of intentional damage to the arena will not be tolerated, and if caused, the robot will be immediately disqualified.
- 8.1.6. Unfair play may lead to disqualification of the team, which will be decided by the coordinator of the event.
- 8.1.7. Misbehavior of any kind will not be tolerated, and the team will be disqualified from RoboVeda.
- 8.1.8. The robot should not harm the opponent or the field. Constantly damaging the arena may lead to disqualification.
- 8.1.9. A robot with a toy car base and gearbox as a machine part will be disqualified. Lego kits are strictly prohibited and will lead to disqualification.
- 8.1.10. Major arguments with the referee or judge will not be tolerated, and the event organizers have the right to disqualify a team in such situations.
- 8.1.11. Constantly damaging the arena may lead to disqualification.

### 8.2. Judging Criteria

- 8.2.1. Bringing an opponent's bot to a halt position within the time limit advances the team to the next round.
  - HALT: A robot is considered halted if it does not move for 15 seconds without being touched by the opponent.
- 8.2.2. If both robots can still move after the time limit, the judges will decide the winner.

Judging decisions will be based on the following parameters:

  - Aggression and defense points.
  - Extent of damage done to the opponent's robot.
  - Extent of damage received by the bot.
  - Robot operating skills.
  - Arena damage (which results in negative points).



## 9. COMPETITOR AND BEHAVIORAL RULES:

- 9.1. Teams participating in Ranaveera 2024 must report to the arena by 1:00 PM on 18-11-2024.
- 9.2. All participants are requested to thoroughly review this rulebook, as no point mentioned will be compromised under any circumstances. A copy of the rulebook should be kept handy during the event.
- 9.3. Misbehavior of any kind will not be tolerated and will lead to disqualification.
- 9.4. All dimensions, weights, and specifications of the field, facilities, and equipment described in this document have a margin of error of plus or minus 5% unless otherwise stated.
- 9.5. All participants will receive a Certificate of Participation.
- 9.6. Winners and runners-up will receive a Certificate of Merit.
- 9.7. All participants must bring their respective college ID cards.
- 9.8. Team Roboveda is not responsible for any damage to your robot, either on or off the event grounds.
- 9.9. In unforeseen circumstances, Team Roboveda will defer to the decision of the institution regarding event scheduling or cancellation. Only registered participants will be notified of changes to the event dates or cancellations. In such cases, the registration fee will be refunded.

### **Important Note:**

1. Under no circumstances or arguments will the decision of the Coordinator's Head or event organizer be overturned.
2. Event organizers reserve the right to alter gameplay duration or the number of rounds, with changes made fairly. Arguments on this matter will lead to team disqualification.
3. Actual playing round details and time durations will be announced to participants prior to the match.

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