

# Robotics Federation Kerala

## Robowar - Rule Book

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### 1. Introduction

Robowar is a competitive event where robots, designed and built by participants, battle against each other in a specially designed arena. The event is conducted in two categories based on the weight of the robots: 8kg and 25kg. The aim of the competition is to immobilize the opponent's robot or push it out of the arena. This event encourages participants to showcase their technical skills and strategic thinking. It also promotes teamwork, as participants often work in teams to design, build, and operate their robots.

### 2. Robot Specifications

#### 2.1 Weight Class

There are two weight classes in the competition:

- **Lightweight:** Robots in this category should weigh up to 8kg. The maximum dimensions for these robots are 35x35x35 cm with a tolerance of 10%. This category is designed for participants who are new to the field or have limited resources. It allows them to compete on an equal footing with other similar robots.
- **Heavyweight:** Robots in this category should weigh up to 25kg. The maximum dimensions for these robots are 50x50x50 cm with a tolerance of 10%. This category is for more experienced participants who have the resources and skills to build larger and more complex robots.

The weight of the robot includes all parts of the robot. For wireless robots, the weight of the battery is also included in the total weight. This ensures fairness in the competition as all components of the robot are taken into account.

## **2.2 Motor Specifications**

The motor used in the robots should have specifications within the defined limits. The power of the motor should not exceed 350W. The voltage should be a maximum of 24V and the motor should not exceed a speed of 1000 RPM. These specifications are designed to ensure that the robots are safe and that the competition is fair. A robot with a more powerful motor could potentially cause damage or pose a safety risk.

## **2.3 Weapons**

Only non-destructive weapons are allowed in the competition. This includes flippers and wedges. These weapons are designed to flip or push the opponent's robot rather than causing any damage. No damaging weapons are permitted in the competition. This rule is in place to ensure the safety of the participants and the spectators. It also encourages participants to focus on strategy and control, rather than brute force.

## **2.4 Control**

Both wired and wireless robots can be used in the competition. Wired robots must have a minimum wire length of 5m and above. Wireless robots must keep the battery inside the robot. This rule is designed to ensure that the robots can move freely in the arena without being restricted by the length of the wire. It also ensures that the weight of the battery is taken into account in the total weight of the robot.

## **3. Arena Specifications**

The arena for the competition should have minimum dimensions of 8x8x3 feet. The arena is designed to provide a fair and challenging environment for the robots. The size of the arena ensures that the robots have enough space to move around and execute their strategies. The height of the arena is designed to prevent the robots from flipping out of the arena.

## **4. Scoring**

Points are awarded based on the performance of the robots in the arena. Points are awarded for flipping the opponent's robot, immobilizing the opponent's robot, and pushing the opponent's robot out of the arena. There are no points for damages as this is a non-destructive Robowar.

This scoring system encourages participants to focus on strategy and control, rather than causing damage to the opponent's robot.

## **5. Safety**

As the event is conducted in an open area format, all participants are expected to adhere to safety guidelines to ensure a safe and fair competition. The use of non-destructive weapons and the specification of the motors are part of these safety measures. Participants are also expected to conduct themselves in a manner that ensures the safety of all participants and spectators.

This rule book is designed to ensure a fair and exciting competition while maintaining the safety of all participants. It is important that all participants understand and adhere to these rules. Any violation of these rules may result in disqualification from the competition.

Please note that this is a basic outline and you may need to add more specific rules or guidelines based on your event's requirements. Always ensure that safety is the top priority. It is recommended to have a technical inspection before the competition to ensure all robots comply with the rules. Also, consider having a briefing session before the competition to explain the rules to all participants. This will ensure a smooth and fair competition.

## **6. Event Coordination and Judging**

The event coordinator and the judges have the authority to disqualify any team that violates the rules. They also reserve the right to make necessary changes to the rules depending on the situation. This is to ensure the smooth running of the event and to maintain the spirit of fair competition.

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Remember, the event coordinator and the judges have the final say in any disputes or rule changes. Their decisions are made in the best interest of the competition and all its participants. Respect for their decisions is expected from all participants.

Good luck to all the participants. May the best robot win!