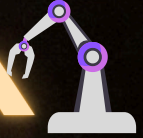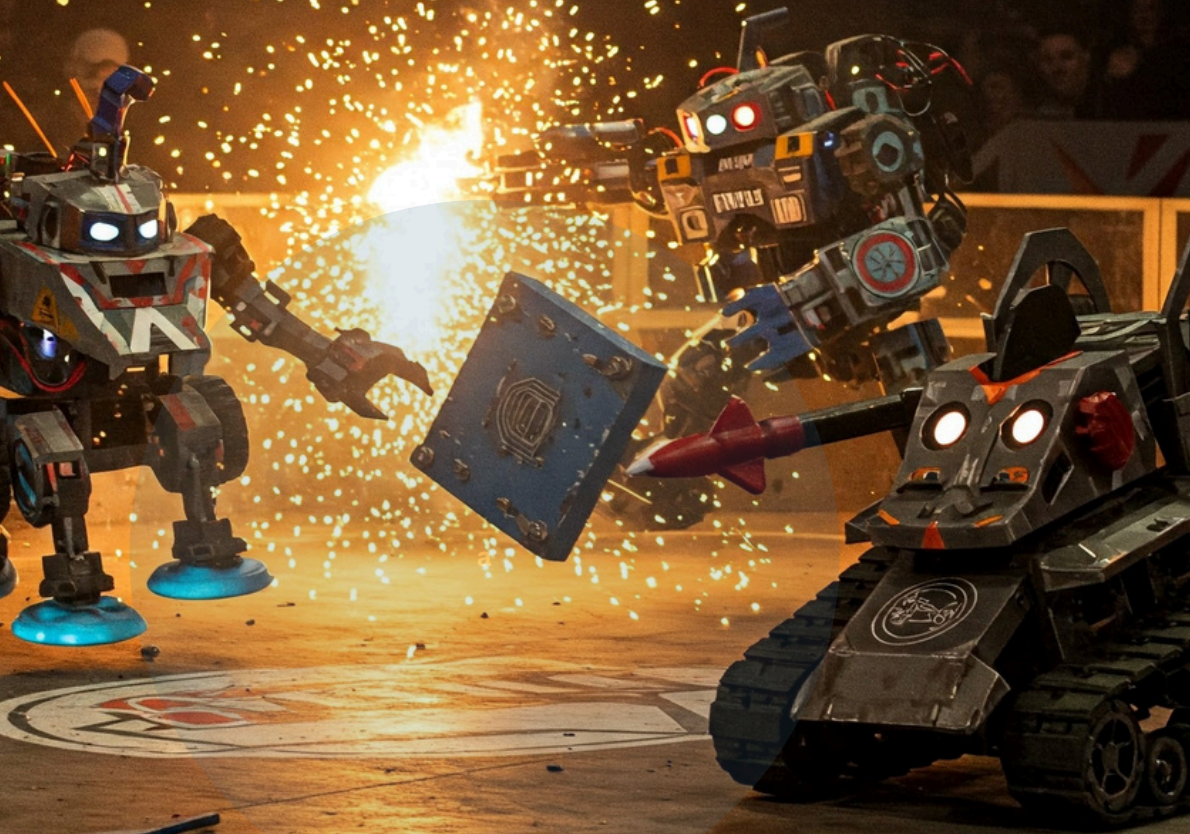MITE

Sentia 2025

presents

ROBO MANIA
ROBO WAR

MITE CAMPUS

3RD-4TH APRIL

ROBO WAR

About the event:

The Robo War 8kg category is a high-octane battle of engineering and strategy. Teams will pit their 8kgrobots against each other, showcasing innovative weapon designs, durability, and control. With a Double Elimination format, every team gets a second chance to prove their mettle. This is your stage to display technical brilliance and battle it out for victory.

Dimension and weight tolerance

Since we are mandating kill switches, the tolerance given is only for a Kill switch worth of weight. These tolerances are as follows.

Weight : 8kg	Tolerance: 1%

·An extra tolerance of 2cm in dimensions is allowed.
·The weight of the bot will be checked before and/or after every match.
·The total weight of all the bots must not cross the limits in the above point.

Robot Control Requirements

1.**Control System:**
·All robots must be controlled wirelessly, with all power supplies located onboard.
·No wired external connections are allowed during matches.

2.**Kill Switch and Control:**
·A kill switch is mandatory for all robots.
·Robots must maintain control over all functions and positions at all times. Judges or organizers may require teams to demonstrate control during a match.

3.**Autonomous Functions:**
·Autonomous features are permitted but must include the ability for the controller to remotely disable or override them at any time.
·An emergency stop (E-stop) function, controlled by the remote, is mandatory to disable autonomous functions in emergencies. The judges will declare such emergencies if required.
Any damage caused by autonomous functions is solely the team's responsibility.

4.Signal Transmission:

·Transmitter-receiver systems must function through polycarbonate sheets, metal bars, and barriers. Only remote controllers capable of this will be allowed.

·Teams must provide at least four frequencies for wireless control or two dual-control circuits to prevent interference with other teams.

·Frequency interference will not be grounds for a rematch or alteration of results.

5.Remote Control Systems:

·Off-the-shelf remote-control systems are permitted.

·Nonstandard or custom-built systems must be pre-approved by the organizers and judges.

6.Pairing and Setup:

·Teams must pair the wireless remote with the robot before placing it into the arena.

·No additional time will be granted for transmitter-receiver pairing after robots are placed in the arena. Failure to pair in advance may result in disqualification.

Battery system

·The robot should be powered electrically only. Use of IC engines in any form is not allowed. On board batteries must be sealed and immobilized-electrolyte types of batteries should be used (such as gel cells, lithium, NiCad, NiMH, or dry cells).

·All batteries should be onboard, only the weight of the remote controller will not be included.

·The electric voltage between 2 points anywhere in the machine should not exceed 48V DC at any point of time. Participants will have to bring their own converters for standard power supply according to Indian standards. All efforts must be made to protect battery terminals from a direct short and causing a battery fire, failure to do so will cause direct disqualification. In case of any emergency, the participants must stay calm and stay in the respective corners, the organizers will only be allowed inside the arena.

·Use of damaged, non-leak proof batteries may lead to disqualification.

·Special care should be taken to protect the on-board batteries. If judges find the battery is not properly protected, then the team will be disqualified immediately.

·Change of battery will not be allowed during the match.

·Robots with only on-board batteries are allowed.

·It is suggested to have extra batteries ready and charged up during the competition so that on advancing to the next round, there is no delay. If teams don't show up at their allotted slots within the specified time limit, they will be disqualified.

Team Specifications

1.Team Composition:
·A team can consist of up to 4 participants per robot.

2.Team Name:
·Each team must have a unique name. Names deemed inappropriate, offensive, or conflicting by the organizers will be rejected.
·Any change in the team's name must be communicated to the organizers.

3.Team Representative:
·Each team must designate a Team Representative (Leader) at the time of registration.
·All official communications will be made through the representative, who must provide valid contact details (phone number, email ID, etc.).

4.Robot Specifications:
·The robot's name cannot be changed during the event.
·Any design changes must be informed to the organizers.
·Teams must submit the robot's name and photo during registration. These details may be cross-checked at any time during the event.

5.Multiple Robots:
·Teams entering multiple robots in the same category must ensure each robot is visually distinguishable.
·A robot's uniqueness will be determined by a minimum 51% difference in parts.
  • Cosmetic changes (e.g., color, stickers) will not be considered.
  • Example: If two robots have the same structure but different side walls, the weight of the side walls will determine the difference.
·Robots with less than 31% difference may use one as a spare for the other.

6.Operator Restrictions:

·In categories other than, each robot must have a separate pilot. The same pilot cannot operate multiple robots.

7.Component Distinction:

·If two robots from the same team are competing, their components and parts must have noticeable differences. Failure to comply may lead to disqualification.

8.Abstract Submission:

·Teams must submit an abstract of their robot(s) during registration.
·All robots will be inspected against the submitted abstract and must meet the specified criteria.

9.Pre-Match Preparation:

·All robots must be fully assembled and ready at least 30 minutes before the competition starts.

Weapon guidelines and safety protocols

Permitted Weapons:

- Robots may use weapons such as magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers, etc., provided they adhere to the safety criteria detailed below.

Safety Requirements for All Weapons:

- All weapons must have a safety cover over any sharp edges to prevent accidental injuries.
- Each weapon must be equipped with a weapon lock to restrict motion when the robot is not in the arena. The weapon lock must only be removed once the robot is ready for battle in the arena.
- Teams found without a weapon lock outside the arena or welding zone will receive 1 penalty point per violation.

Prohibited Weapons and Mobility Requirements:

- **Weapons Not Allowed:**
  Solid and Liquid Projectiles: Including bullets, foam, liquefied gases, water, and flamethrowers.
  Invisible Damage Weapons: Such as electrical weapons, RF jamming devices, or other similar mechanisms.
- **Mobility Requirements:**
  All robots must have clearly visible and controllable mobility to participate.

Specific Weapon Regulations:

- **Spinning Weapons:**
  - Spinning weapons must stop moving within 60 seconds after power is cut using a self-contained braking system.
  - Spinning weapons must only be tested inside the arena. Testing outside the arena will result in disqualification.

- **Spring-Loaded Weapons and Flywheels:**
  - Springs must always remain unloaded and free outside the arena. Loading is only permitted during matches, and testing must occur exclusively within the arena under the supervision of the organizing team.
  - All spring-loaded devices, flywheels, and other kinetic energy storing mechanisms must be controllable at all times. Any unintended movement outside the arena or near the audience will result in disqualification for violating safety protocols.

Tournament Structure

1.Tournament Format:
·The competition will follow a 1 vs 1 format.
·Double elimination will be considered based on the number of registrations, and that format will be announced 2 days before the event starts.

2.Fixture Allocation:
·Fixtures will be drawn by the judges in the presence of the organizing team to maintain fairness. A chit system will be used to randomly assign opponents.
  - Judges and event coordinators have the right to changes the fixtures in case there is clash between teams with two bots, ensuring fairness. This rule is to avoid the matches between two bots of same team.
  - The change of fixtures will also be applicable for teams who got "By" Incase.
  - ·Once finalized, fixtures are absolute and will not be changed under any circumstances. Requests for changes will not be entertained.
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3.Match Timing Regulations:
·Match timings are fixed and will not be extended or preponed except in the case of the second finals match, where an extension may be allowed.
A minimum gap of 20 minutes will be maintained between consecutive matches for teams competing in the same category.

4.Attendance and Time Management:

·Teams must arrive on time for their scheduled matches. Excuses, such as managing multiple robots, will not be accepted.
·Failure to show up on time will result in a 1 penalty point being awarded to the team and forfeiture of that match.

Match Guidelines

1.Match:

·Each match will consist of 3 minutes of active fight time, excluding any time-outs.
- Teams are advised to ensure their robot's battery capacity, power usage, and defenses can sustain a full 3-minute fight.

2.Immobility criteria:

·Once bot seems immobile, the judge/referee will ask to show movement twice. If no movement is shown after that, a countdown of 10 seconds will start for him.
·Each call out for showing movement will be a 5 seconds time frame.
·In case of immobility at 2:41+ minutes, it will not be considered as a knockout.
·A linear movement of 100cm should be shown to be not considered immobile

3.Arena Regulations:

·Team Members: No team members are allowed inside the arena during matches. If a robot becomes immobile, it will be declared so unless judges determine the bots are stuck together. In such cases, teams will be given 20-30 seconds to separate under the supervision of judges or organizers.
- Fire or Smoke: Matches will not be stopped for fire, smoke, or any circumstance other than a tap out or a false start.

4.Exceptional Circumstances:

·Judges or organizers may halt or restart a match in cases of severe arena damage, such as lighting failures or other serious issues caused by impacts.

5.Maintenance and Time Management:

·Routine maintenance (e.g., battery charging) must be completed within the allotted time. Backup resources are recommended.
·In extreme cases, the 20-minute interval between matches may be extended at the discretion of the judges and event organizers.

6.Weight Check:

·Robots' weight will be checked before and/or after every match to ensure compliance with the weight category.

ROBO WAR

Judging Criteria

A judge allocates 6 points to the competitors for each of Control and Damage, and 5 points for Aggression. The bot with the most points is that judge's choice. If there is a panel of 3 judges, the bot that is chosen by at least two judges wins the match.

All the scorecard for all of the matches will be public.

When a judges' decision is required, a recording of the fight will be watched by a panel of judges. If both judges choose the same winner, that bot will win the fight. If the judges choose different winners, a third tiebreaker judge will watch the same recording of the fight and choose the winner.

The judging process and number of judges on each panel will only vary from these two scenarios if there are technical issues requiring the activation of contingency plans.

Additional Guidelines

·The judge's decision is the last decision (if appeal used, then after appeal decision is final).

·If the lights are destroyed or damaged, the match will be instantly paused, and the judges will take over.

·The corners will be chosen through the fixtures directly. No coin toss or mutual understanding will be entertained in any case.

·You need to take permission from coordinating or organization team to test your bot in arena.

·You cannot test your bot in the arena without appropriate approval of organizing team, judges or arena vendor team.

·No weapon testing to be done inside the pits

·Final weight check will be done just before putting the bot in the arena. No team member can touch the bot after the official weigh in.

·If any changes are made to the bot, the judges should be notified before the match.

Event-Specific Terminology

·Disabled: A robot is unable to function due to an internal malfunction or contact with the opposing robot.

·Disqualification: A robot is no longer allowed to compete in the ongoing Robo Wars Tournament.

·Immobilized: A robot is deemed unresponsive for a specific period, as judged by the referee.

·Knockout: Occurs when the actions of one robot render the opposing robot immobilized.

·Lifting: Happens when one robot lifts and controls the movement of the opponent by raising its drive mechanism off the arena floor.

·No Contact: A situation where neither robot makes contact with the other for a set period.

·Pinning: Occurs when one robot holds the opponent stationary using force to immobilize it.

·Radio Interference: When a robot becomes non-responsive or uncontrollable due to interference from the opponent's remote-control signal.

·Non-Responsive: A robot fails to exhibit any translational movement on the arena floor, as judged by the referee.

ROBO WAR

·Restart: A resumption of the match after a declared Fault or Timeout, once the robots are ready to continue.
·Stuck: A robot is trapped on the arena, an arena hazard, or the opponent, rendering it non-responsive.
·Tap-Out: The decision by a team's operator to concede the match to the opponent.
·Technical Knockout: A robot wins due to the opponent's immobilization, even if no direct action of the winning robot caused it.
·Timeout: A temporary pause in the match, usually called to separate robots or address other issues.

Arena

Arena and Judges details will be conveyed to every team 20 days before the event.

SCAN TO REGISTER

CONTACT

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