



Integration of Innovation and Intelligence

**SANKALP
2K20**

Presenting :- **Robowar**



Robowar

Weight Category – (15 Kg)

OBJECTIVE:

Design a manually controlled robot to defeat the opponent robot in a war within a specific amount of time.

PROBLEM STATEMENT:

The participating team needs to design and construct a manually (Wired / Wireless) controlled robot capable of driving the opponent's robot into the dead pit zone either by pushing, dragging, lifting and throwing, or making robot immobile or by any other means within the specified time.

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DESIGN SPECIFICATIONS:

- ✓ *Bot size is limited in the dimension 500*500*500 (all dimensions are in mm).*
- ✓ *The weight of the machine should not exceed 15 kg.*
- ✓ *The supply may be on-board or external supplied.*
- ✓ *The bot should not be destructive.*
- ✓ *Robots having on board power supply will be counted as 0.85*Actual Weight [Weight of adaptors and the remote controller will not be counted].*

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GENERAL RULES:

- ☐ *Maximum 4 number of members are allowed in each team.*
- ☐ *Each team must have only operator and each operator must operate a single bot.*
- ☐ *Robot dimensions have to be within the given specifications.*
- ☐ *AC Supply 220V/50 Hz will be provided to each team for triggering the controller.*
- ☐ *The team will not be provided with any battery eliminators for charging batteries.*
- ☐ *No chemicals are allowed.*
- ☐ *Implementation of any sucking devices or glue which shall stick the robot on opponent's robot or the floor of the arena, will result in disqualification.*
- ☐ *Jammers are not allowed.*

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- ☐ *Every match will be continued for 3 min and if both the robots remained on the arena after the fixed time, then the elimination will be done by considering their attacking game to which points will be given.*
- ☐ *No penalty for harming the opponent's robot though any mechanisms except those mentioned earlier.*
- ☐ *Decisions of the jury will be final and binding.*
- ☐ *Hammers and lifters are allowed to destroy the opponent's robot and but no extra points will be awarded for that. Cutters, hydraulics, fire or any liquid or chemical weapon are strictly prohibited.*

Battery and Power:

- *The machine must be powered electrically. Use of an IC engine in any form is not allowed. On-board batteries must be sealed, immobilized-electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cells).*

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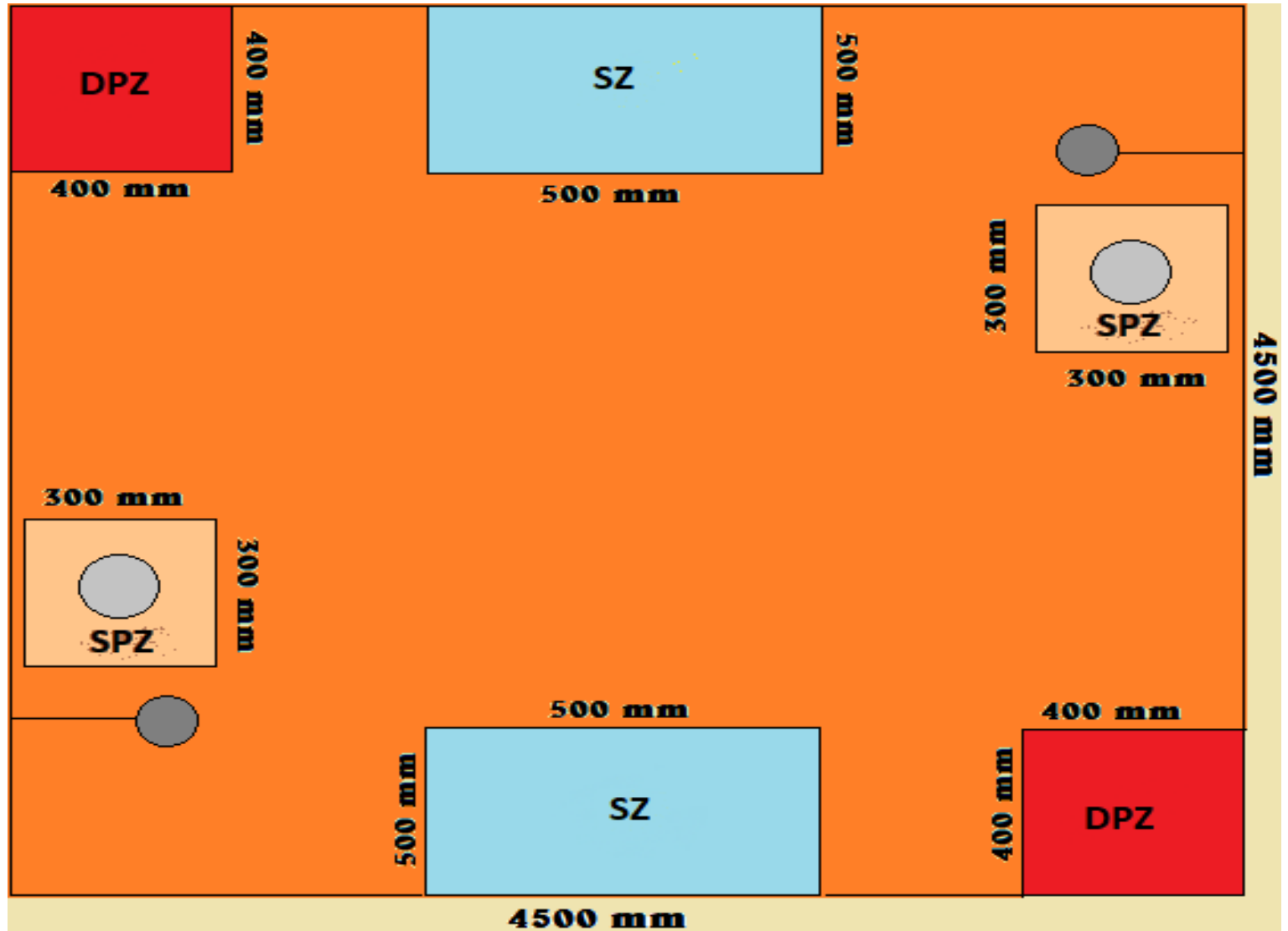
➤ *The electric voltage between any 2 points on the machine should not exceed 25V DC at any point in time. Participants will have to bring their own converters for standard power supply according to Indian standards.*

Match Duration and Type:

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 defences such that they can sustain a 3- minute fight. Match will be a regular 1 on 1 combat between 2 bots.

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ARENA SPECIFICATION:



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- ❖ **PLAYZONE** : 450 * 450 CM
- ❖ **DPZ (DEAD PIT ZONE)** : 40 * 40 CM
- ❖ **SZ (START ZONE)** : 50 * 50 CM
- ❖ **SPZ(SPIKE ZONE)** : 30 * 30 CM

ZONE:

DEAD PIT ZONE:

The zones marked as DPZ are the pits of dimensions 40 * 40 * 20 cm. If any robot falls into the pit by itself or by other robot in the arena, the team loses the match and is eliminated for that round. The organizers are not responsible for any kind of damage done to the robot due to falling into the dead pit zone.

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START ZONE:

These are the zones marked as SZ. These are the starting zones where the robots will be placed before starting of each match. The dimension of the START ZONE is 50 X 50 cm.

SPIKE ZONE:

*It is a rectangular zone and size is 30 * 30 cm. It consists of 2 spikes of length 15 cm each, which would be triggered automatically if any robot enters by its own or being pushed by opponent's robot. The spikes would come up and go down at very high speed if robot enters the spike zone.*

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SOME IMPORTANT POINTS:

- *The match fixtures will be decided by drawing numbers by each team.*
- *The number which the team gets will be final.*
- *Organizers are liable to change fixtures at any time if required.*
- *Any kind of nuisance or use of inappropriate words by any team will lead to disqualification.*
- *The actual arena may vary from the specified arena.*

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Team Specifications:

- 1. Each team can consist of maximum four members.*
- 2. Each team member should be a student of an Authorized college. Students from different colleges can also form a team(student must come with their own college id with SANKALP id).*

NOTE:

The event coordinator can disqualify the bot if he feels that the bot is violating the rules or if it causing any damage. Points of the team can be deducted by the judge if any team's conduct is not up to the mark.

SAFETY RULES:

- 1. Special care should be taken to protect the on- board batteries, robot without proper protection will not be allowed. Each event has safety inspections. Judge will ask the team members to disclose all the features of the robot.***
- 2. Teams can test their robot in a safety place (Crowd-less area)***
- 3. In-case of any help, please feel free to ask the organizers.***
- 4. Once the robots have entered into the arena, no team member can enter into the arena at any point of time. In case if a fight has to be halted in between and some changes have to be done in the arena or condition on the robot(s), it will be done by organizers only.***

For further enquiry contact the following event co-ordinator

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