**Yantra Samar (Robo-War)**

Design a wired/wireless, manually controlled machine that is capable of totally overpowering its opponent on the war-front and push it onto the various weapons (pushers, flappers, wedges) which will be present on the arena.

**GAME PROCEDURE**

* During the match only two team-members will participate in competition, one member will control the bot and the other member will control the arena weapons (pushers & flappers). Teams are allowed to switch members in different matches.
* Setup time: 60 seconds.
* Match duration: 6 minutes.
* Winning criteria: Team can either win by direct knockout or if the time runs out and there's no knockout or both bots are inactive, the winner will be decided by the final points (points are earned by attacking opponent team with arena weapons, point system will be briefly described in the Scoring section).
* A robot is declared immortal/victorious if its opponent becomes totally inactive. A robot will be declared inactive if it cannot display any movement for a time period of 30 seconds.
* Knock out rounds: Teams will be divided in the group of two's and the winner of the match will go to the next round.
* The final match duration will be of 10 minutes.

**SPECIFICATIONS**

**Bot dimension & fabrication:**

* The initial dimension of bot should not exceed 50cm x 50cm x 50cm. However there is no limitation on bot dimension once the match starts.
* Any machine component should not be detached (intentionally) during any point of the war.
* The weight of the machine should not exceed 25 kgs. (Excluding remote control and remote control wires).
* In case of a wireless bot weight will be counted as (0.8x actual weight).
* Readymade gear boxes, parts, chassis, control circuits and remote control can be used.
* Bot control:
* In case of wired bots, the wires should remain slack at any instant during the fight. All the wires coming out of the machine should be stacked as a single unit. Also, the wires should be projected 1000 mm above the ground to avoid entanglement.
* In case of wireless system, it should have a minimum four frequency remote control circuit or two dual control circuits or a transmitter-receiver paired module so that the frequency interferences with opponent team can be avoided (in case of any interference in the wireless systems, they will not be considered for rematch or in the results).
* Remote controls that are readily available in the market may also be used.

**Battery & power:**

* The machine can be powered electrically only. Use of an IC engine in any form is not allowed. Batteries must be sealed, immobilized-electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cells).
* The electrical voltage at any point of time in the machine should not exceed 40 V DC/AC.
* 230V (AC) power will be provided.(wired bots)
* In case of wireless bot batteries should be placed on the bot also teams cannot use 230V (AC) external supply.
* In case of wired bots teams can use external batteries.
* 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.

**Mobility: Methods of mobility include-**

* Rolling (wheels, tracks or the whole robot).
* Non-wheeled robots having no rolling elements in contact with the floor and no continuous rolling or cam operated motion in contact with the floor, either directly or via a linkage. Motion is "continuous" if continuous operation of the drive motor(s) produces continuous motion of the robot. Linear-actuated legs and novel non-wheeled drive systems come under this category.
* Jumping and hopping is not allowed.

**Pneumatics and hydraulics:**

* Participants can use pneumatic and hydraulic weapon systems but use of external pressure/ liquid cylinders are not allowed. Cylinders should be placed on the bots.
* The outlet pressure of the source/tank should not exceed 8 bar.
* Robots can use pressurized, non-inflammable gases/liquid to initialize their pneumatic mechanisms.
* The used pressure should be indicated by means of temporarily fitted pressure gauge or there should be a provision to measure the cylinder pressure on the bot.
* The storage tank and pressure regulators used by teams need to be certified and teams using pneumatics are required to produce the Safety and Security letters at the Registration Desk at the venue. Failing to do so will lead to direct disqualification.
* You must have a safe way of refilling the system and determining the on board pressure.
* All pneumatic components on board a robot must be securely mounted. Particular attention must be made to pressure vessel mounting and armour to ensure that if ruptured it will not escape the robot. The terms 'pressure vessel, bottle, and source tank' are used interchangeably
* Weapons Systems: Robots can have any kind of cutters, flippers, saws, hammers, lifting devices etc. as weapons, with the following exceptions:
* Liquid projectiles
* Acid based Weapons
* EMP generators
* Any kind of flammable liquid
* Flame-producing weapons
* Any kind of explosive material
* Nets, glue or any other entanglement devices
* High power magnets or electromagnets
* Radio jammers

**Team Size:** 02 - 04 Participants

**Maximum teams from an Institute:** 03

**Fees**: INR 200/Team

**Minimum Teams criteria for** **validation of cash prize:** 03