

March 25th to 27th 2019

BATTLEGROUND

INTRODUCTION:

Passionate about bots, love soccer and it gives you goosebumps when watching someone scoring a goal? Or you just like to watch things get crushed from fierce competition? The path to glory passes through the alley of destruction, lethal combats, violent bots, and flying blades and soccer strategies! Merge your technical know-how with the ferocious player in you!

Make your bot fight for the ultimate glory or land up in the junk yard!

So folks, fight smart, be innovative and play. Seriously, play because This WAR is not only about scoring a goal, but also staying ALIVE!!

Problem Statement

Design a wired, manually controlled machine that is capable of knocking out the opponent and is able to score a goal and finally be able to score the maximum points.

General Rules:

1. The bot can be wired or wireless.
2. The competition will be played on a knock-out basis and the winning will depend on the scoring of a basket.
3. The bot will be inspected for safety before the event begins. If found to be unsafe for the participants/spectators, it will be discarded.
4. The organizers reserve the right to change any or all of the rules as they deem fit. Changes in rules, if any, will be highlighted on the website.

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5. Violation of any of the rules will result in immediate disqualification.
6. The bot cannot be split into two sub-units. Two distinct parts connected by a flexible cable will be considered separate units.
7. Lego kits, readymade kits, car bases and development boards are not permitted. Readymade gear boxes are permitted.
8. Any bot is not allowed to pick/lift the ball. If it does, the ball will be shifted to its original position.
9. If a bot remains immobile for 30 seconds, then it can demand a timeout of 1 minute (obviously with negative points), afterwards it will be disqualified.
10. If a bot cuts the wires of another bot (intentionally or accidentally), then it will be disqualified immediately.
11. Only 3 members of the team will be allowed inside the arena area.
12. In all cases, the judges' and coordinator's decision will be final and binding.

Team Specifications:

A team can consist of minimum 3 and maximum 5 members. Members can be from different institutions and different departments.

Robot Specifications:

The size of the bot can be maximum of 45x45x40(length*breadth*height)cm.

Weight Classes:

1. Weight of the robot should not exceed 15 kg (pneumatics/tanks included).
2. Weight of external power source (batteries and adaptors) will not be counted.
3. Weight of wireless wheeled robots will be counted as 0.75 times the actual weight.
4. The robots can be of **ROLLING** or **WALKING** type.

Mobility:

All robots must have easily visible and controlled mobility in order to compete.

Methods of mobility include:

1. Rolling (wheels/tracks/whole robot).
2. Non-wheeled robots having no rolling elements in contact with the floor and any 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.
3. Jumping, Hopping and Flying/Hovering (airfoil using, helium balloons, ornithopters, etc.) is not allowed.

Robot Controller Requirements:

1. Bots may be wired or wireless. Autonomous bots not allowed.
2. In case of wired bots, the minimum length of the wires should be maximum of 5 meters. 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. Care should be taken so that wires do not get entangled.
3. 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 frequency interferences with the opposing team can be avoided (in case of any interference in the wireless systems, they will not be considered for rematch or in the results).
4. Remote control systems from toys might be used. Remote control systems available in the market may also be used.

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Battery & Power:

1. The machine can be powered electrically only. Use of an IC engine in any form is not allowed.
2. The electrical voltage at any point of time in the machine shouldn't exceed 40V.
3. 230V (AC Power) will be provided.
4. In case of wireless bots batteries should be placed on the bot.
5. In case of wired bots external batteries can be used.
6. On-board batteries must be sealed, immobilized-electrolyte types. Permitted batteries: Gel cells, lithium, NiCad, NiMH, or dry cells.
7. Use of damaged, non-leak proof batteries may lead to disqualification.

Pneumatics & Hydraulics

1. Participants can use pneumatic and hydraulic weapon systems but use of external pressure/ liquid cylinders are not allowed. Cylinders should be placed on the robots.
2. The outlet pressure of the source/tank should not exceed 8 bars.
3. Robots can use pressurized, non-inflammable gases/liquid to initialize their pneumatic mechanisms.
4. The used pressure should be indicated by means of a temporarily fitted pressure gauge or there should be a provision to measure the cylinder pressure on the robot.
5. 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.
6. You must have a safe way of refilling the system and determining the on board pressure.
7. All pneumatic components on board a robot must be securely mounted. Particular attention must be paid to the 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.

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Weapon 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 EMPgenerators Explosives

The Event:

- 1)The event will be in 2 rounds.
- 2)The maximum duration of 1st round will be 7 minutes.
- 3)The 2nd round will be disclosed during events.
- 4) Either the bot has to basket the ball or destroy the opponent and kick the bot out of arena.

Ball and Basket dimensions:

The diameter of the ball will be 5 centimeteres

Round 1:

The length of the goalpost will be 30 centimeteres.

Round 2:

To be disclosed.

Scoring:

Scoring will be at the sole discretion of the organisers.

Arena for Round 1:

