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RULES BATTLE BOTS  
SWEDEN

*Antweight Robots*

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Revision 2

# 1. Robot specifications

- 1.1 The robot must not be a finished commercial product. If you start from a commercial product, it must be significantly modified.
- 1.2 The size of the robot is not limited.
- 1.3 The weight of the robots must not exceed 454 g (1 lb).
- 1.4 The robot must have an accessible mechanism that allows it to safely turn off its drive and weapons, without having to dismantle the robot.
- 1.5 The robot must have the ability to deactivate wirelessly.
- 1.6 Should the robot lose contact with its remote control, it must automatically turn off its drive and weapons. This is required to pass the "Radio fail-safe" test, more information is given in the event rules.
- 1.7 The robot can be fully autonomous or controlled via remote control.
- 1.8 Radios can use the following frequencies: 27 MHz, 40 MHz, 418 MHz, 433-434 MHz, 868 MHz and 2.45 GHz. All radios must comply with all relevant rules and regulations.
- 1.9 The robot is not allowed to fly.
- 1.10 It must be possible to operate the robot in the arena.
- 1.11 The following weapon systems are not allowed:
  - Devices that intentionally interfere with opponents' control systems (EMP weapons, radio jammers, etc.)
  - Gas, powder, glue or liquid-based weapons
  - Explosive or fire-based weapons
  - Electric shock weapons
  - Nets or entangle weapons
  - Laser weapons
  - No types of projectiles.
- 1.12 The robot's protection must not contain any parts of the unauthorized systems from §1.11. For example, the robot must not be protected with netting or fabric in which the opponent is likely to get caught.
- 1.13 Batteries or electrical systems should not exceed 24 volts.
- 1.14 The robot should be equipped with a clearly visible and durable weapon lock. E.g. a security print, clamp or protective cover.
- 1.15 All sharp weapons must have protective covers outside the arena. All protective covers shall be made clearly visible.
- 1.16 The robot should be equipped with a clearly visible ON/OFF status indicator.

## 2 Arena

- 2.1 The dimensions inside the arena are 200x200x130 cm.
- 2.2 The inner frame is 15 cm high and painted white with mixed stickers.
- 2.3 Arena's floor consists of black plywood.
- 2.4 The arena has two entrances and their size is about 120x98 cm.
- 2.5 Inside each entrance, there is a marking on the floor to place the robot.
- 2.6 The arena has lighting in the ceiling in the form of LED lights and fluorescent lamps.



## 3 Competition rules

- 3.1 The competition will be conducted in two stages:
  - a) Group phase
  - b) Elimination phase
- 3.2 During the group phase, robots will play matches in groups one on one in all combinations.
- 3.3 The number of groups and the number of robots in the group will be determined by the organizers after the registration is closed and will depend on the number of registered robots.
- 3.4 The winner of each group is promoted to the elimination phase where matches are played with single elimination.
- 3.5 After each completed phase, the result will be presented.
- 3.6 Depending on the number of registered participants, the group stage can be skipped. In that case, the robots directly participate in the elimination phase.
- 3.7 Matches will be held based on the schedule specified by the referee.
- 3.8 If a robot does not show up to the match at the appointed time, the contestant will be contacted by the referee.
  - a) If the robot is unable to participate, you lose the match.
  - b) The referee can postpone the match by 5-10 minutes if the referee deems it will give the robot the opportunity to participate. If the robot does not show up after that time, you lose the match.

## 4 Match Rules

- 4.1 The matches will last for a maximum of three minutes. The match ends before the time limit if the judges declare a winner or if any team gives up.
- 4.2 A robot wins the match in the following cases:
  - a) Knockout which is when the opponent is immobile for 5 seconds and a judge counts down 10 seconds during which the opponent still does not move.
  - b) The opponent withdraws from the fight.
  - c) The opponent's robot is disqualified, gets a foul or gets more than one warning.
  - d) After 3 minutes if none of the above has happened then the winner is chosen by the judges.
- 4.3 When the referees have to choose a winner of the match, they judge based on the following criteria:
  - a) Aggression, the intensity and frequency of attacks.
  - b) Control, how well a robot dictates the flow of the match. To score points here, the robot must put the opponent in a bad position, such as holding it, getting it stuck, or turning it upside down.
  - c) Damage, how much damage has been done to the opponent.
- 4.4 The contestants choose an entrance to the arena. The robot is placed on the mark in the arena with the front of the robot facing the entrance.
- 4.5 Only after the start command from the judge can the robots move or activate their weapon.
- 4.6 A robot may hold its opponent for a maximum of 10 seconds. After that time, the robot must release the opponent and give it enough space to break free.
- 4.7 During the group stage phase, the winner is awarded one point.
- 4.8 After completing the group stage, the robot with the most points is declared the winner. If there is a tie, additional matches will be run to determine a winner.
- 4.9 The winner of the final becomes the winner of the competition.

## 5 Event Rules

- 5.1 Weapon locks and/or protective covers must be on the robot while it is outside the tournament arena.
- 5.2 All robots will undergo a technical inspection on site before the competition to ensure that they meet the robot specifications in section 1.
- 5.3 All robots must undergo the "Radio Fail-safe" test. The test ensures that the robot enters a safe state should its radio communications be disrupted.
  1. The robot is activated and the participant is asked to drive around and activate the weapon.
  2. The participant must then switch off their remote control.
  3. The robot must then stop completely and be motionless within 60 seconds of the remote control being switched off.
- 5.4 The contestants must follow the event organizers' and judges' instructions. Event organizers have the final say in any problems that may arise at the event.
- 5.5 Damaged batteries pose a fire hazard. If the battery is damaged during the competition, it must be replaced immediately and disposed of in a safe place designated by the event organizers.
- 5.6 Each team is responsible for the safety of their robot.

**For questions, contact the organizers:**

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