

# RULES OF ROBOTICS TOURNAMENT

## “ XV Robotic Arena ”

### Combat Raptor

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#### Section I

##### General

###### § 1

1. This document regulates rules of the tournament in category “Combat Raptor”.

#### Section II

##### Robot Specification

###### § 2

1. Robots can't be pre-built, commercial constructions.
2. Dimensions of robots are not limited. Though, it is necessary for a robot to fit through arena's entrance.
3. Weight of robots cannot exceed 1 lb (454 g), extended by precision of measuring equipment.
4. Robot must include a mechanism allowing to turn off its drive and weapon safely after losing connection with a transmitter.
5. Robot must be equipped with a clearly visible, durable weapon lock (e.g. a safety pin crippling a blade)
6. Weapon lock must remain in the robot while it is placed outside tournament arena or test arena appointed to use before tournament begins.
7. Robot must be equipped with ON/OFF state indicator, clearly visible for a referee in any robot's position and orientation (e.g. high power LED).
8. All the devices listed above will be put under an examination during a technical inspection.

9. Technical inspection will take place before the tournament begins. It will be held by the referee or referees at certain time and in appointed place.

### § 3

1. Robots may be fully autonomous or depend on remote control.
2. Remote control receiver and transmitter must operate within frequencies legal in Poland state:
  - (a) 26,995 MHz,
  - (b) 27,045 MHz,
  - (c) 27,095 MHz,
  - (d) 27,145 MHz,
  - (e) 27,195 MHz,
  - (f) 34,995 – 35,225 MHz,
  - (g) 40,665 MHz,
  - (h) 40,675 MHz,
  - (i) 40,685 MHz,
  - (j) 40,695 MHz,
  - (k) 2,4 GHz,
  - (l) 5 GHz.
3. Robots can't contain any devices which intentionally disrupt opponents control system.
4. Robots can't contain any parts that allow it to permanently hover above the arena, such as turbines, helium balloons etc.
5. Any parts that could damage the arena are not allowed. This does not include weaponry used with an intention of damaging opponent's robot, which may unwittingly scratch or damage arena's surface or its walls.
6. Devices that can store gas to restrict field of vision on the field, as well as flammable liquids, gases and powders are not allowed.
7. Robots weapons can't contain gunpowder or any other explosive materials.
8. Robots functionality cannot be dependent on varying environment during tournament, such as lighting (from dusk to bright reflectors), smoke, loud music or laser effects. The show may be lit by regular lightbulbs, halogens, energy saving lightbulbs, fluorescent lamps, LEDs and other lightsources common in households. Organizers have no control over street lighting near windows of the building. During the show it will be forbidden to use camera flashes and other intense light.

### **Section III**

#### **Arena Specifications**

##### **§ 4**

1. Arena is a 144x144x144 cm cube.
2. Arena surface is made of black coloured steel.
3. Side and top walls are made from clear acrylic glass.
4. The side walls inside the arena are secured with a wooden band in black with a height of 1-10 cm.
5. Referee decides whether the arena is in operable state and whether it should be replaced
6. Exterior area of the arena is at least 70cm around the arena.
7. Exterior area might be of any colour.
8. Exterior area might be of any material.
9. Exterior area will be free of any obstacles during the fights.

## **Section IV**

### **Competition**

#### **§ 5**

1. Competition will be conducted in two stages:
  - (a) elimination phase
  - (b) finals
2. In the elimination phase robots will play matches in groups one versus one in all of the combinations.
3. Size and number of groups, as well as number of places in group granted with promotion will be stated by the organisers after closing the registration and will depend on the number of registered robots.
4. The number of submitted robots in one section for one participant can not be more than 1.
5. Robots promoted to finals phase will play matches as a single-elimination tournament.
6. Each phase results announcement will occur after finishing the phase.
7. Depending on the number of registered participants, elimination phase may not be held. In that case robots take part directly in finals, played in single-elimination mode or one versus one in all of the combinations.

#### **§ 6**

1. Matches will be held based on the schedule given by the referee.
2. Time between one robots matches will be at least 40 minutes.
3. If a robot does not show up for the match on scheduled time the contestant will be rushed by the referee.
4. If the robot will not show up for the match within 5 minutes after being rushed, it will lose by default.

## **Section V**

### **Winner Selection Rules**

#### **§ 7**

1. Two robots take part in a match.
2. The match consists of one encounter.

#### **§ 8**

1. Robot wins the match in case there is:
  - (a) A knockout, which is when after the opponent is immobile for 5 seconds and a referee counts down 10 seconds during which the opponent still doesn't move.
  - (b) The opponent withdraws from the fight.
  - (c) Opponent's robot is disqualified, receives one offence or gets more than one warning.
  - (d) After 3 minutes none of the above has happened. The winner is then chosen by the referee. Referee counts each robot activity such as collision or attack as 1 point. The robot who gain more points will win the battle.

- (e) In the case of a battle between two robots with a defensive design, or if the robots themselves cannot inflict powerful damage to the opponent for any reason, the winner will be the robot, which is the most active and uses all possible elements of its design and arena to damage the opponent's robot. In this case, the judge also calculates the points according to the same criterion mentioned in the paragraph above

### **§ 9**

1. Before beginning of the match contestants standing near the arena should bow before each other according to referee's instructions.
2. Corners of the arena in which the start of the round will take place are chosen by the referee.
3. Only after placing a robot in appointed corners of the arena, contestant shall turn on power supply of their robot and remove a safety weapon lock. Radio transmitter must remain turned off.
4. Contestants have 120 seconds to place robot in the aforesaid part of the arena.
5. After closing the arena cage contestants may turn on the transmitters.
6. Robots can start moving only after the start command given by the referee.
7. Before the start of round robots cannot move or take any action resulting in taking advantage over their opponent (e.g. spreading ploughs, scanning surroundings etc.). During this time contestants are committed to leaving the inner area of the arena. The referee decides if this rule was violated.
8. In case of no reaction for the "start" command the round is repeated. If after three consecutive rounds the start will not occur, referee decides of further course of the match.

### **§ 10**

1. Match should be played again in case there can't be chosen a clear winner.

### **§ 11**

1. In the elimination phase the victor is awarded with one point.
2. The classification in every group is stated based on (in case of the same number of points, next item is considered):
  - (a) Points in decreasing order.
  - (b) Result of a direct 1 vs 1 match.
  - (c) Coin toss.
3. The referee may decree additional match between interested contestants instead of coin toss.
4. In the finals, match victory grants promotion to the next round.
5. The winner of the grand final becomes the winner of the competition.

## Section VI

### Violations and Penalties

#### § 12

1. The contestant that takes any of following actions gets a warning:
  - (a) Enters the inner area of the ring before the referee announces the end of a round or a pause.
  - (b) Preparations for the match restart take more than 40 minutes.
  - (c) Their robot will not remain immobile until the start command given by the referee.
  - (d) Takes any other action that is at odds with fair-play rules.
2. If a contestant gets two warnings, he loses the match.
3. Each of following actions is a reason to immediately pause the match and stop the match clock:
  - (a) A robot emits smoke
  - (b) Both robots move but do not enter physical contact with each other.

#### § 13

1. The consequence of fulfilling any of these conditions by a contestant results in disqualification:
  - (a) The contestant behaves in unsportsmanlike manner or does not comply with fair-play rules (i.e. uses vulgar or offensive language or insults the opponent or the referee).
  - (b) The contestant damages opponents robot on purpose outside of the match.
  - (c) The contestant indisposes others to play the match by intentionally damaging or defiling the arena.
  - (d) The contestant's robot due to malfunction is not able to fight in all the elimination phase matches.
  - (e) The contestant due to late arrival for elimination phase is not able to fight in all the elimination phase matches.
  - (f) The contestant's robot during a match is not compatible with the specification stated in section II.
2. If there is suspicion of incompatibility with the specification during a match, the referee is committed to interrupting the match and immediately take the technical inspection.
3. Repeated technical inspection of a robot may also be taken at the request of opponent.
4. The result of disqualification in the final phase is match loss.
5. The result of disqualification in the elimination phase is cancellation of the results of all the matches the contestant participated in and awarding all opponents with victory by walkover.