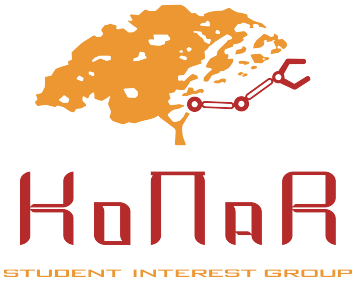
RULES OF ROBOTICS TOURNAMENT

“ XII Robotic Arena ”

Rescue

“KoNaR” Student Interest Group
Facoulty of Electronics
Wrocław University of Science and Technology



Section I

General

§ 1

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

Section II

Robot Specification

§ 2

1. Robots can’t be a pre-built, commercial construction.
2. Robots must fit in a 50x50 cm square extended by precision of a measuring equipment.
3. Height of robots is not limited.
4. Robots can’t weigh more than 5000 g extended by precision of a measuring equipment.

§ 3

1. Robots may be fully autonomous or depend on remote control.
2. Remote control can be applied using Bluetooth, infrared or radio communication.
3. Remote control reciever and transmiter must operate within frequencies legal within Poland:
   (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.

Section III

Object Specification

§ 4

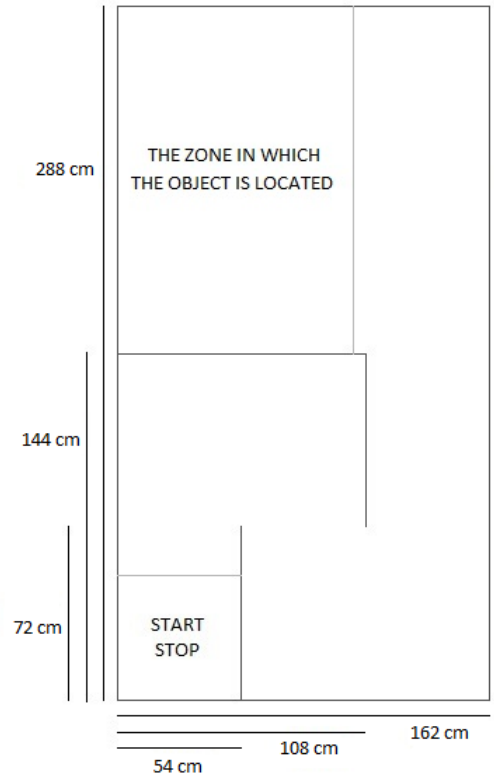
1. Height of the object is within 10 to 30 cm.
2. Width of the object is within 10 to 30 cm.
3. Weight of the object is within 100 to 1000g.

Section IV

Maze Specification

§ 5

1. General zones and shape of the maze:



2. The size of the labyrinth is given with tolerance ±1 cm.
3. The outside wall shall enclose the entire maze.
4. Walls of the maze shall be 12 mm wide and over 100 mm high.
5. Walls of the maze are white coated plywood with red top.
6. Floor of the maze is white coated plywood (or similar material).
7. Posts of the maze are white coated aluminum or 3D printed using white filament.
8. Safe zone of the arena shall be at least 70 cm wider than the arena.
9. During the match Safe zone shall be clear of obstacles and foreign objects.

Section V

Competition

§ 6

1. Competition will be conducted in two stages:
   (a) Elimination phase,
   (b) Finals.
2. During elimination phase each robot is given unlimited tries on the course.
3. Matches in elimination phase will be held based on the schedule given by the referee.
4. 6 best constructions from elimination phase will take part in finals.
5. Matches in finals will be held in reverse order to the elmination phase.
6. During the finals each robot is given only three tries on the course.
7. As a result of referee's decision, there can be only final stage. Therefore:
   (a) Each robot can take part in final stage (only after succesful registration process)
   (b) Matches in finals will be held based on the schedule given by the referee.
8. Each phase results announcement will occur after finishing the phase.

Section VI

Winner Selection Rules

§ 7

1. Exploration of the maze by the robot is called a match.
2. Maze is considered solved after the robot has succesfully found and transported the object to the starting zone.
3. After match start the object will be anywhere in the zone designated to it.
4. Timer is started on referee's mark and stopped after both the object and the robot are fully in the starting zone.
5. Time is measured by a referee using a stopwatch.

§ 8

1. Before the match start team places the robot in the starting zone according to referees instruction.
2. Match is started on referees mark.
3. Robot shall leave the starting zone on referees mark.

4. Shall the robot cross start line before match start, match is to be conducted again. It is concidered a falstart.
5. Robot that has three falstarts shall be disqualified.
6. Match shall not be longer than 5 minutes.
7. In case the robot is stuck and no longer able to move, referee may stop the match and it will be counted as a loss.
8. Match can be stopped on the request of the starting team and it will be counted as a loss.

§ 9

1. Each time the robot touches a wall, 5 seconds are added to the run time.
2. If the robot does not move autonomously, 120 seconds are added to the run time.
3. Final classification of the phase is based on the lowest run time achieved by a robot.
4. In case three first places can't be clearly chosen while sorting by shortest time, referees will decide on how to proceed.