RULES OF ROBOTIC TOURNAMENT

“ XIV Robotic Arena ”

LineFollower Light

“KoNaR” Student Interest Group
Faculty of Electronics, Photonics and Microsystems
Wrocław University of Science and Technology

Section I

General

§ 1

1. This document regulates rules of the tournament in category “LineFollower Light”.
2. In case of 3 or less robots, the category is played as a demonstration and no prizes will be awarded for it.

Section II

Robot Specification

§ 2

1. Robots can’t be pre-built, commercial construction.
2. Robots must fit on a standard A4-size paper with allowed tolerance of 5%.
3. Height of robots is not limited.
4. Weight of robots is not limited.
5. Communication with robots during matches is forbidden.
6. Starting and stopping of the robots remotely is an exception from the point above.

§ 3

1. Robots must be fully autonomous.
2. Robots must be designed so that they can be started at the sign given by the judge.
3. Robots CAN’T be equipped with ”EDF” (Electric Ducted Fan) or other active devices for better adhesion.

4. Robot, who is registered in "LineFollower Light", can't be registered at the same time in "LineFollowerTurbo".
5. 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

Route Specification

§ 4

1. Route is defined by black line (with width up to 2 cm) placed on a white background.
2. Surface with route can be built from a many connected components. Any set offs on the components' connection will be possibly eliminated.
3. At a distance of 210mm away from the line (smaller dimension of A4-size paper) can't be other line or the end of the route.
4. The route can be a closed loop.
5. The route can include right angle or crossroad.
6. Crossroads should be driven straight through.
7. The route can't have hills.
8. The route can't have breaks in line, bifurcations or any obstacles.
9. The route area is limited by a rectangle, which fully includes the route. The rectangle will be defined along with the selection of the exact route run.
10. The gates (for time measurement) have to be placed at two sides at least 170mm away from line.

Section IV

Competition

§ 5

1. Competition will be conducted in two stages:
   (a) Elimination phase,
   (b) Finals.
2. In elimination phase, each robot has a right to unlimited number of rides.
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 the finals.
5. Order of rides in the finals is inversely proportional to ranked place in the elimination phase.
6. The shape of finals' route is shown just before final phase.
7. In finals, each robot has a right to only 3 rides.
8. 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.
9. Each phase results announcement will occur after finishing the phase.

Section V

Winner Selection Rules

§ 6

1. Before start of the ride, the participants are placing the robots on the start line as instructed by the referee.
2. The activation of the robots occurs at the signal of the judge.
3. The false start happens when robot exceeds the start line before the signal from the judge.
4. First false start restarts the ride.
5. Second false start makes ride as unfinished.
6. Leaving the route by the robot occurs, when the robot's contour gets away from route.
7. Each robot, after leaving the route, has to get back on the route by itself.
8. If the robot gains the advantage by leaving the route, the ride is getting unfinished.
9. The referee decides, if the robot gained the advantage.
10. If the robot leaves the route area, the ride is getting unfinished.

§ 7

1. Time of overcoming the distance is the time counted from passing the start line to moment of passing the finish line.
2. Passing the start/finish line means that any component of the robot has passed it.
3. Time of overcoming the distance is measured by gate or by the referee with stopwatch (if the gate will crash).
4. The gate has at least 1 sensor, placed 1cm above the route's surface.
5. It is recognized that the robot has passed the finish line only if any of the sensors will notice it.
6. There is a 3 minutes limit for passing the route.
7. If the ride takes longer than 3 minutes, it is considered unfinished.

§ 8

1. If the phase is taking place on 1 track, the shortest time of ride is taken into consideration in final classification of the phase.
2. If the phase takes place on more than one track, the final classification of the phase takes into account the sum of the shortest travel times of the robot from each track.
3. If selection of 3 first places, based on the shortest times of the ride in phase with limited rides, won't be possible, the rules of the further competition are determined by the referees.
4. Final classification of the phase is determined on the rules defined in this paragraph.