Robots' Intellect 2020
"Golden" bag search

1.   The task

An autonomous mobile robot has to, without any help from any person, drive from the starting point to the searching area (indicated by specific markings), find a "golden" bag and bring it back to the start in under 1 hour.

2.   General rules

1.   It is strictly forbidden for robots to injure any participants or viewers.
2.   It is forbidden for robots to damage the course, obstacles or any other items of organizer's inventory, unless it is explicitly a part of competition.
3.   Robots must be autonomous. During the match human input isn't allowed, unless it's specifically allowed by competition.
4.   It is forbidden to intentionally cause any harm to other participants or robots.
5.   Robots must be registered until organizer's specified date.
6.   Robots must pass qualification before participation. Robots that are late for qualification must get competition coordinator's permission to pass qualification after official qualification time.
7.   During qualification, each robot will be assigned a unique number, which must be put on the robot, in a clearly visible location.
8.   Competition coordinator has the final say on all questions and problems during the competition.
9.   The organizers keep the right to alter/edit the rules, accordingly informing the participants about it.
10.   Violation of the rules above will result in disqualification or criminal liability.

3.   Requirements

1.   Robot weight is not limited.
2.   Robot measurements may not exceed 1x1x1 m.
3.   Robot may fly.
4.   Robot can move only within course perimeter.
5.   Robot should be resistant to rain.
6.   Robot power supply should be easily disconnectable, for safety reasons.

4.   The obstacle course

4.1 Bag

1.   Weight - 1 ±0.05 kg.
2.   Size won't exceed 25x30x30 cm.

3. It will be a bag made of fabric.
4. Photo of the bag will be published 2 weeks before the event.
5. On each of the attempts, the position of the bag may be changed to prevent a preliminary accurate designation of the bag's coordinates.

4.2 Track

1. Track perimeter will be marked with yellow belt, placed between 0 m and 1 m. It is marked in track layout (1 fig.) in color yellow.
2. Robots start / finish in track layout (1 fig.) is marked in green.
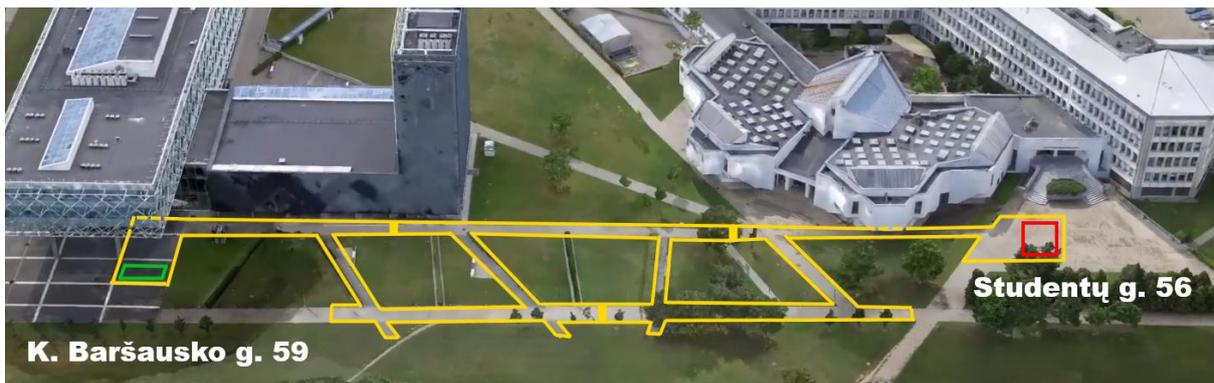3. "Golden" bag will be placed inside it's zone. In track layout (1 fig.) this zone is marked red.

Figure 1: Track (K. Baršauskas g. 59 - Studentų g. 56, Kaunas)

4.3 Ramp

The course will include a ramp. Ramp's side edges will be marked with bright color. The path will narrow down before the ramp to 125 cm. and will widen out after the ramp.
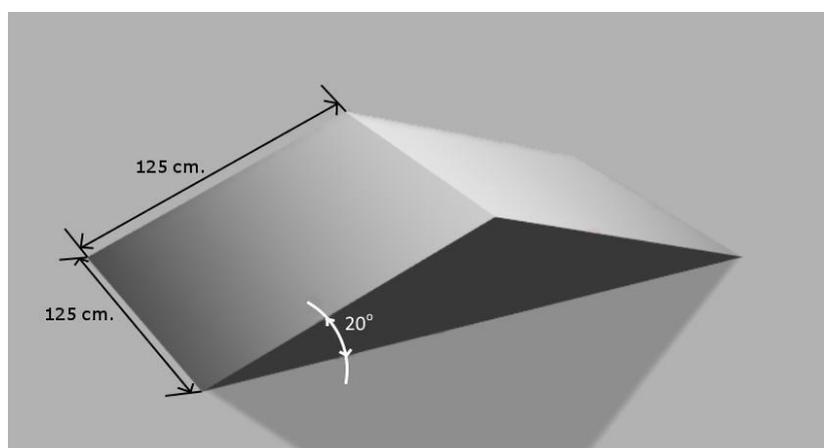

Figure 2: Ramp

4.4 Other obstacles

The course will have obstacles placed by the organizers (e.g.: a tunnel, a hill, debris, wet floor, etc.). The number of obstacles is unlimited.

5.   Team

1.   Team can't contain more than 5 people.
2.   The number of robots presented by a team is unlimited.

6.   The process

1.   Prior to the start an independent jury will check each robot.
2.   At the start of competition all robots must be lined up at the starting line (the starting positions for each robot will be randomly decided before the beginning of the competition).
3.   The first attempt is obligatory.
4.   If the technical difficulties will not be solved after the first attempt, the robot will be disqualified.
5.   There will be four attempts, 60 minutes between each of them and with 2-5 minutes long intervals between participants.
6.   Each robot during its attempt must complete the track in less than 60 min.
7.   If the robot drops the bag, both the bag and the robot will be returned to their starting positions.
8.   If no team completes the objective, the main prize will be returned to the contest prize pool.
9.   If no robot completes the entire track, a part of the main prize will be awarded to the team whose robot completed the largest part of the course.
10.   If a contestant wins the event, they must submit the robot's code to be checked for cheating.
11.   Any offence to the rules will result in a failed attempt.

7.   Remarks

It is allowed to set the GPS coordinates of the course's corners up to an hour before the first attempt, but not in the last 15 minutes before start.