X Challenge

ROBO ~motion

Drag Race

Last modified: 01.02.2024

1. General Information:

1.1. The purpose of the competition is to promote robotics, fun and fair-play competition.

1.2. The category is divided into several competitions. These are:

1.2.1. LEGO Drag Race

1.2.2. Drag Race

2. Definitions:

2.1. General Definitions:

2.1.1. Team - a group of people consisting of Participants and Competitors who independently created at least one Robot or its algorithm, participating in the Competition. Due to the multiplicity of the Competition and its categories, the representation of the Team is limited to a maximum of 10 people (not including any guardian).

2.1.2. Constructor - the person or people participating in the competition who created the Robot in question.

2.1.3. Organizer - a person who supervises and influences the course of the Competition, wearing a name badge with the inscription Organizer.

2.1.4. Robot - a mechatronic device powered by electricity that moves autonomously and responds to its environment to a certain, noticeable degree.

2.1.5. Identical robots - robots, having a similar design and using similar algorithms. The final determination of the identity of robots is decided by the Chief Judge.

2.1.6. Judge - the person who supervises the competition on the day of the Competition.

2.1.7. Category Judge - a person who supervises the proper course of the categories entrusted to him, having a decisive vote on issues / disputes that are described in the regulations of the category.

2.1.8. Chief Judge - a person who supervises the proper course of the Competition taking place within the XChallenge, having a decisive and final say in issues/disputes both those described in the regulations of a given category and general regulations and those that are not included in the regulations of a given category or general regulations.

2.1.9. Participant - a person who takes an active, or passive part in the competition. It can be a competitor, judge, organizer or spectator.

2.1.10. For the competitor, see Constructor.

2.2. Category Definitions:

2.2.1. Measuring gate - a component of the system for measuring the Robot's transit time.

2.2.2. Passage time - the time measured by the Measuring Gates located at the Starting Place and at the Finish. The start and end of the run time counting takes place after the Robot passes through the corresponding Measurement Gates.

2.2.3. Finish - a place located on the Route equipped with a Measurement Gate, unambiguously indicating the end of the Route.

2.2.4. Starting Place - a place located on the Route equipped with a Measuring Gate, unambiguously indicating the place where the robot is placed in order to start the Trial.

2.2.5. Trial - a trip along the Route performed by the Robot, in which the Trip Time is counted.

2.2.6. Route - a continuous line located on the board, indicating the path of movement of the Robot.

2.2.7. Stopping field - a place designed to stop the robot.

2.2.8. Open Route - this is a Route where the Starting Place and the Finish are located in different places.

2.2.9. Test Route - this is the Route intended for testing the Robot. It is made of the same material as the Route intended for the Trials and is made available to competitors during the competition in the service area.

2.2.10. Tunnel drive - a high-speed electric motor with blades attached to the rotor, used to increase the robot's thrust by the force of the air recoil.

3. Category Specification:

3.1. The competition involves Robots whose goal is to drive the designated Route in the shortest possible time, but not more than 2 minutes.

3.2. The basic criterion for ranking the Robot Trials is the times obtained, from the shortest to the longest.

3.3. If the robot does not complete the run within the specified time limit, the trial in question is not scored.

3.4. The trial is started at the sign of the judge. After its completion, the competitor must take the robot from the route, however, it is not allowed to enter the route, therefore, when it is impossible to take the robot without entering the route, it will be pulled from the route by the judge or technical staff.

3.5. There is no limit to the number of competing robots of a given Team, however, one robot can participate in a maximum of 4 categories, with the proviso that in one category it can compete in a maximum of 2 competitions (for example, one robot can participate in Drag Race, LF Standard, LF Turbo Enhanced and Micro Sumo, however, it cannot simultaneously compete in Drag Race, LF Standard, LF Turbo and LF Turbo Enhanced).

3.6. No two Identical robots are allowed to compete in the competition.

3.7. The trial is scored when the Robot independently travels the designated route within the specified time limit.

3.8. Teams have a Test Route at their disposal during the competition.

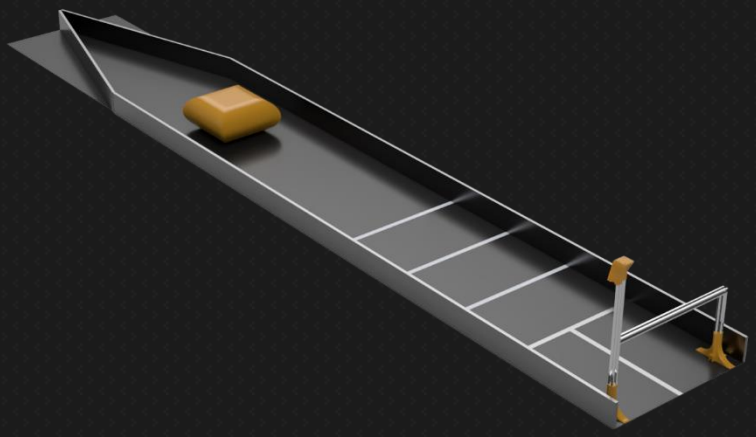
3.9. A Competitor's Robot may complete any number of Trials, however, the Robot that has not previously completed a run has priority to start.

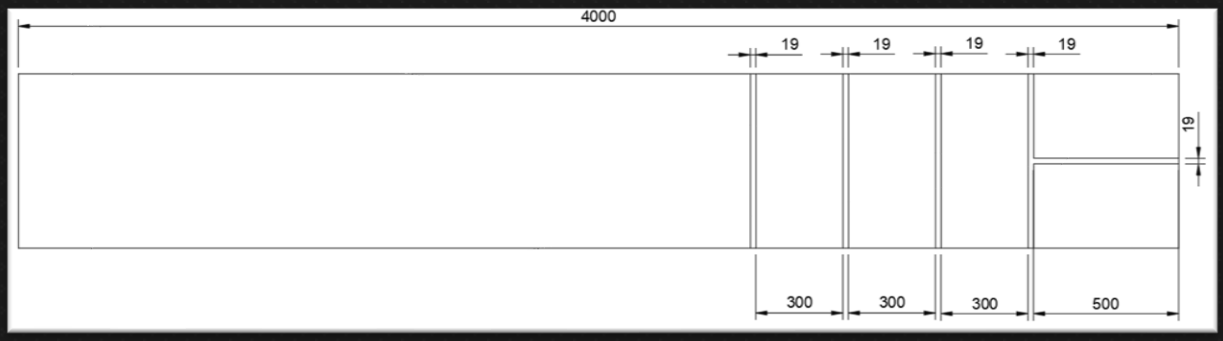
3.10. The Organizer provides a table, chair and access to an electrical outlet to the Team. Other needs must be communicated to the Organizer via email by writing to xchallenge@dolinawiedzy.pl. The Organizer is not obligated to meet these needs, but is obligated to notify if they will be met.

3.11. The robots can be viewed by participants throughout the competition, and Team members undertake to politely answer any questions from Participants.

4. Robot and route specifications:

4.1. The robot must not intentionally endanger the life or health of the Competition Participants.
4.2. The robot must not destroy objects or things within its range as a result of intentional or incorrect operation.
4.3. The dimensions of the Robot must not be greater than:
  4.3.1. 300mm - applies to the total length,
  4.3.2. 210mm - applies to the total width,
  4.3.3. 210mm - refers to the total height.
4.4. The robot must move autonomously.
4.5. Communication with the Robot during the Trials is prohibited. Remote starting and stopping of the Robot is allowed.
4.6. Robots equipped with a Tunnel Drive are allowed, applies to Drag Race competition only, in LEGO Drag Race competition Robots cannot be equipped with tunnel drive.
4.7. Robots in the LEGO Drag Race competition must be made only of LEGO bricks, motors and sensors. It is not allowed to use other elements in the robot (motors and sensors that are not manufactured by LEGO, elements printed on 3D printers, etc.).
4.8. The material of the Board on which the route is located will be published soon.
4.9. The route will be 19 mm (±1 mm) thick insulating tape taped to the board.
4.10. The run time is counted by measuring gates. The measurement starts when the robot is detected by the Measurement Gate located at the Start Place, the measurement ends when the robot is detected by the Measurement Gate located at the Finish Place.
4.11. In case of failure of the measuring gates, the Organizer may measure the time with a stopwatch.
4.12. Behind the finish line is a braking zone planned according to the following design to allow competitors to safely brake the Robot. The organizers have drawn 4 perpendicular lines in the braking zone that are 30cm apart from the course line to allow the Robots to detect the end of the course and start braking. The first perpendicular line starts about 50cm behind the measuring gate and thus does not affect the Robot's travel time. The lines, as well as the ground, are made of the same material as the rest of the route. The entire braking zone is about 4 meters long. The walls, which narrow down at the last meter of the braking zone, like the rest of the route are lined with soft sponge to protect the Robots from damage. About a meter behind the last perpendicular line there is also a cushion, which can be pulled off the arena at the request of the competitor.





5. Rules of the games:

5.1. The games are conducted under the supervision of the Judge.
5.2. In case two or more Robots have the same time, an additional Trial will be conducted between them.
5.3. The judge has the right to stop the Trial when he/she deems that the rules of these regulations are being violated or when the robot is unable to complete the Trial.
5.4. The Organizer provides the Competitors with a Test Track in the service area for the duration of the competition.
5.5. The robot must move completely autonomously. Any communication with the robot during the Trial risks failure to pass or disqualification of the Competitor. The decision to penalize the Competitor is made by the judge. Remote starting and stopping of the robot is allowed.
5.6. The robot must move along the Route in accordance with the direction of movement indicated by the Judge.
5.7. The time limit for passage is 2 minutes.
5.8. The robot must not damage the route or interfere with measuring instruments.
5.9. The robot in the course of the run may not touch the walls of the board - it is allowed to bounce off the walls once, however, the robot may not touch the walls more times - such a run is not included in the ranking.

6. Litigation, Liability and Disqualification:

6.1. Any disputes related to the category described in these rules shall be decided by the judge of the category.
6.2. Any disputes and situations not described in these Regulations shall be decided by the Chief Judge.
6.3. Responsibility for all actions of each member of the Team shall be borne by the Team.
6.4. In case of non-compliance with the rules of fair-play by one of the members of the Team, the Chief Judge has the right to impose a penalty on the Team in the form of disqualification.
6.5. In the case of behavior of a member of the Team that violates: moral standards, good manners, human dignity, religious feelings or safety of the Participants, the Chief Judge has the right to impose a penalty on the Team in the form of disqualification.
6.6. Disqualification of a Team shall invalidate all results obtained by the Team on the day of the Competition.
6.7. The disqualified Team is required to return all prizes won on the day of the Competition.
6.8. The decision of the Chief Judge is final.
6.9. Preparation of all arenas (and their condition) is the responsibility of the Organizer, who appoints technical staff to maintain the condition of the arenas. The Competitor has no right to interfere with the condition of the arenas or to "clean" the arena on his own. However, the Competitor may request the Judge to clean the arena before his/her approach, then if the Judge finds, in such a situation, the need to clean the arena he/she shall summon the technical service responsible for the maintenance of the arenas. Otherwise, if the Judge determines that there is no such need the Competitor may begin his approach or abandon it altogether.
6.10. The organizer reserves the right to amend these regulations.

7. Registration for the Competition:

7.1. In order to participate in the XChallenge Competitions, it is necessary to create and activate an account on the xchallenge.pl platform by the date to be announced on XChallenge social media. This will be estimated to be September - October 2024. The next step, after creating an account, is to add to your account all the Robots with which the Participant wants to take part in the Competition. Once the Robots have been added to the account, the other constructors of the Robot can be added to each Robot. The registration process described in this section is necessary for each Constructor, Guardian and each Robot. Any Constructor or Robot that is not registered by this date in the registration process will not be allowed to participate in the XChallenge Competition as a Competitor.

7.2. In order to enter a given Competition and its category, it is necessary to confirm one's arrival on the day of the Competition at a specially designated point located near the main entrance. During the confirmation of arrival, the staff will verify the Participant in the system and issue the Participant with an entry package containing, among other things, a special named RFID tag, and verify which of the entered Robots have arrived ready for the Competition by confirming the arrival of each Robot. All Robots that are not confirmed in the system will not have the opportunity to be included in the final ranking, which is equivalent to not being able to win any place in the Competition.

8. Consents:

8.1. Registration of a Robot in the competition implies consent to the publication of basic information about it, i.e. the name of the Robot, the name of the Team, the name of the University or Institution, photos, videos and the place taken by the Organizers and Partners of the Competition without informing the Constructor or the Team.

9. Organizers:

RoboLAB
Local STEM Incubator

RZIT
RZESZOWSKA GRUPA IT

FUNDACJA WSPIERANIA EDUKACJI
PRZY STOWARZYSZENIU
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