



REGULATIONS OF THE COMPETITION

“SADAK ATU”

Age of participants: 10-14 years.

Team: 1-2 people.

Robots: autonomous robots.

Equipment used: no restrictions.

language : no restrictions.

Description of the task: In the " Sadaq atu" test, autonomous robots compete in the speed of completing the route and the accuracy of shooting at targets. The robot's task is to complete the route as quickly as possible and accurately hit all the targets. The winner is the team whose robot demonstrated the best mobility, accuracy and rate of fire.

1. Requirements for robots

1.1. The use of any parts, including those made by yourself, is permitted in the design of the robot.

1.2. The maximum width of the robot is 250 mm, length is 250 mm, height is 250 mm. During the entire race, the robot is prohibited from changing its dimensions so that they exceed the permitted ones.

1.3. If the robot is equipped with moving elements, then when measuring the robot, these parts must be in the maximum position.

1.4 During the competition, robots may change size after launch.

1.5. The robot must be autonomous.

1.6. The robot must be brought assembled on the day of the competition.

1.7. It is prohibited to use liquid, powder and air substances as weapons (arrows must be physical and safe for others).

1.8. The design of the robot must include a device for shooting arrows at a distance.

1.9. The robot must not damage the surface of the competition area in any way, nor pose a danger to others. The robot must be designed in such a way as to exclude the possibility of injury to people. Otherwise, the team may be removed from the competition and disqualified.

2. Requirements for the landfill

2.1. The field is a white banner measuring 1200×2400 mm (Appendix No. 1).

2.2. The color of the following line is black, the line width is 25 mm.

2.3. The starting area (green) and the finishing area (red) are 30x30 cm squares, within which the robot must be located entirely at the start and finish.

2.4. Targets 120 mm high (± 20 mm) are installed on the field . Each target consists of a support and a hitting zone of 50 mm x 65 mm (± 8 mm) . Targets with supports of two colors are placed on the field: six green ones and four red ones (Appendix No. 1).

2.5. Targets are placed in special zones at the beginning of the competition day according to the draw. The placement zone is a purple square on the field measuring 30x30 mm.

3. Procedure for holding the competition

3.1. On the day of the competition, the judges determine the location of the targets by drawing lots.

3.2. Before the start of the competition, the team is given 1 hour to debug and test the robot.

3.3. Before the start of the attempt, all participants hand over their robots to an area inaccessible to them (quarantine). If during the inspection a violation in the robot's design is found, the judge gives 3 minutes to correct the violation.

3.4. If it is impossible to correct the robot, the team is not allowed to attempt.

3.5. During the competition, participants may take robots only from the quarantine zone and only at the command of the judge.

3.6. The maximum time to complete the task is 2 minutes.

3.7. The team starts the competition at the judge's signal. The robot must be completely located in the "Start" starting zone. After the judge's command, one of the operators starts the robot.

3.8. Green and red targets are placed on the training ground. Robots must, moving along the trajectory, shoot down the maximum number of green targets with arrows and return to the finish line. Touching red targets is prohibited.

3.9. The end of an attempt is recorded in one of the following cases:

3.9.1. The robot stopped in the "FINISH" zone.

3.9.2. After 2 minutes from the start of the attempt.

3.9.3. The participant prematurely interrupted the attempt by saying the word "Stop".

3.9.4. The participant touched the robot.

3.9.5. If the robot is unable to continue the competition and/or the robot loses motor activity for 20 seconds (determined by the judge).

3.9.6. The robot left the polygon with its projection. black line.

3.9.7. The robot left the black line of the trajectory with its projection.

3.10. The competition is held in two runs. Each team makes one attempt in two runs. After the first attempt, the team quarantines the robot until all participants have completed the test. 30 minutes are given to prepare for the second attempt.

4. Counting points and determining winners

4.1. The attempt with the maximum number of points is counted.

4.2. The team with the highest number of points will be declared the winner.

4.3. In case of a tie in points in the best attempt, the winner is determined by the highest points in the less successful attempt.

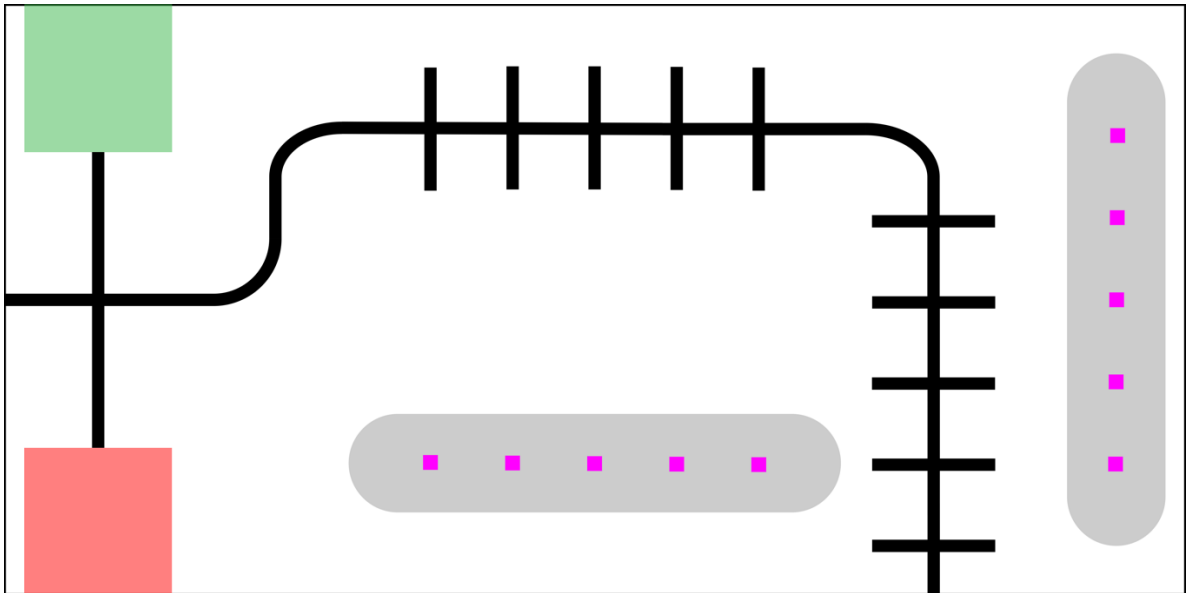
4.4. If teams score the same number of points in two attempts, the team that spends the least time on completing the task is declared the winner.

4.5. Accrual of points:

Criterion	Points
The robot hit the green target with an arrow (only counts if the arrow was released and separated from the robot).	15 p. x 6
The robot hit the red target	-10 p. x 4
Robot has finished – the robot's projection is completely in the finish zone, awarded if the points for other criteria are non-zero	10 p.
Maximum:	100 p.

5. Permissible simplifications when conducting selection stages

5.1. No restrictions on the overall dimensions of the robot.



Polygon and game elements

Fig. 1. Polygon

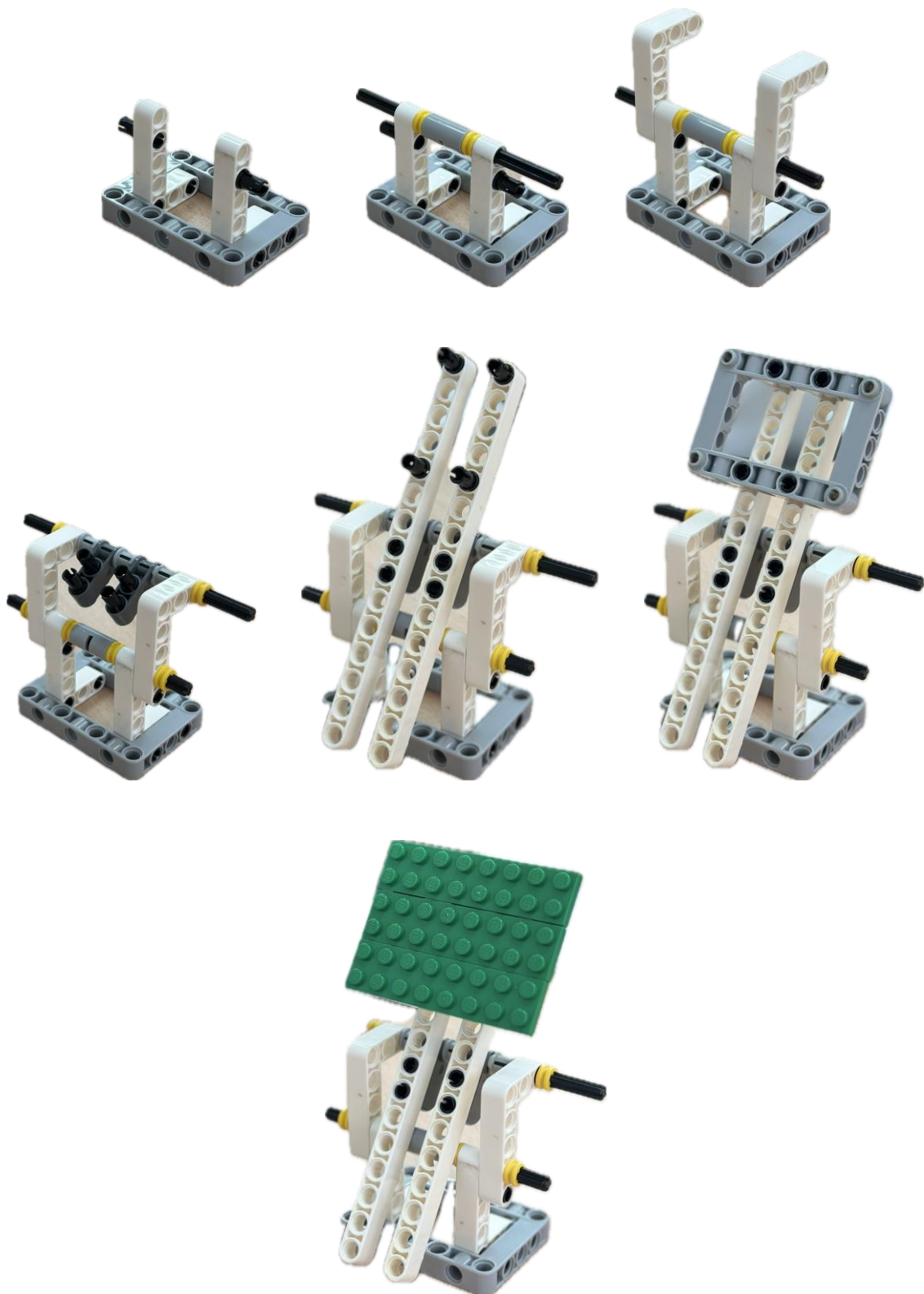


Fig. 2. Target assembly procedure
(example, the original may differ slightly in assembly)

Note: The plates are installed in the color of the target. Instead of plates, it is also possible to use thick cardboard, thin plastic and other similar materials.

Methodological recommendations

Education sets or other safe construction set elements as arrows.

Recommendations for judges

1. Time is recorded in the training ground area using a timer.
2. If the attempt was interrupted by agreement with the judge or by the judge himself, the points scored by the team are recorded in the protocol and the maximum time of 2 minutes is recorded.

Recommendations for organizers

1. Each team is provided with a work space (table, 2 chairs).
2. The field is placed in a place accessible to spectators.
3. Team leaders are not allowed to participate in the competition.