Appendix
to the Regulations on the X International Festival of Robotics,
Programming and Innovative Technologies "RoboLand 202 5"

REGULATIONS OF THE COMPETITION
"MINIFOOTBALL OF CONTROLLED ROBOTS"

Age of participants: 10-14 years.

Team: 2 people.

Robots: controlled by an operator.

Equipment used: no restrictions.

Programming language: no restrictions.

Robots in the team: 2 (additional - 1 spare).

Description of the task: In this competition, teams need to prepare robots that are capable of scoring as many balls as possible into the opponent's goal in a controlled mode without breaking the rules of the game. The game involves four robots controlled by four participants, two from each team. The game is played with a tennis ball. The team that scores the most balls into the opponent's goal wins the match. Students and mentors must adhere to such behavior that does not contradict the mission of the competition and does not hinder its conduct. What is valuable is not what you win or lose, but how much you learn.

Changes in the 2025 regulation:

1.3. The dimensions of the robots are determined in a vertical position, taking into account all the maximum protruding parts. A robot positioned in this way must fit into a cylinder with an internal diameter of 240 mm. The robot must be no more than 220 mm high. The dimensions of the robot will change annually (for more details, see the Methodological Recommendations).

1. Requirements for robots

1.1. A team may use no more than three robots. The number of robots on the field is no more than two. Also, at the discretion of the team, it is possible to have a third robot, which is kept in reserve in case of a breakdown of a robot from the main team.

1.2. There are no restrictions on the controller, motors, or parts used to assemble the robots.

1.3. The dimensions of the robots are determined in a vertical position, taking into account all the maximum protruding parts. A robot positioned in this way must fit into a cylinder with an internal diameter of 240 mm. The robot must be no more than 220 mm high. The dimensions of the robot will change annually (for more details, see the Methodological Recommendations).

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

1.5 All robots must have a sturdy handle to allow them to be quickly lifted or placed on the field. The handle must be easily accessible, for example from the top of the robot. The dimensions of the handle may exceed the height limit of 22 cm, but the part of the handle that exceeds the height limit of 22 cm cannot be used to attach components to the robot.

Note: In this competition, it is recommended to design a robot of a cylindrical shape. Robots of this shape are better suited for this competition. Cylindrical robots have fewer hooks during the game, and such robots also have an advantage when guiding and controlling the ball. When assembling, try to ensure that there are no parts in the robot's design that can be hooked.

1.6. The weight of one robot is no more than 1 kg.

1.7. Participants in the competition must mark their robots in some way so that their belonging to the same team is visible (for example: robots are painted in the same colors, distinctive team symbols are applied, etc.). This must not affect the gameplay.

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

1.9. The ball capture zone is any internal space limited by the robot and the straight surface attached to its protruding parts. This means that the ball should not penetrate the concave surface of the robot more than 3 cm. Moreover, another robot must be able to capture the ball.

1.10. The robot may not hold the ball. The only exception is when the rotating drum is used to impart dynamic backspin to the ball in order to hold it. This action is called "dribbling".

1.11. During the game, the ball must touch the field and always be “in sight” in such a way that other robot players have access to it.

1.12. It is recommended to equip the robot with an external plastic or cardboard cylindrical casing with holes for the impact mechanism.

1.13. Elements intended to destroy the enemy robot are not allowed in the design of robots.

1.14. The robot body must not damage the surface of the competition area in any way, otherwise the team may be removed from the competition and disqualified.

1.15. One robot is controlled by one operator.

1.16. The operator controls the robot remotely using a PC, smartphone, tablet, or using a control panel.

1.17. It is permissible to use a Bluetooth connection to communicate between robots, but only if this does not affect the functionality of other robots.

2. Requirements for the landfill

2.1. The field is a special white polygon, 2400×1200 mm in size (it is permissible to use laminated chipboard, banner field). The height of the walls is 10-15 cm.

2.2. The field is marked with:

2.2.1. Red lines, 50 mm wide, separating the central part of the field from the team zones.

2.2.2. One black mark in the center of the field to designate the neutral zone. And two on each side of the field - starting pads for robots, also acting as neutral zones, for placing the moo when it goes out of bounds.

2.2.3. Gate placement area.

2.3. The playing field is placed on a flat surface without any slopes.

2.4. The dimensions of each gate are 300 mm in width, 100 mm in depth and 150 mm in height. The gates are fixed to the base of the field.

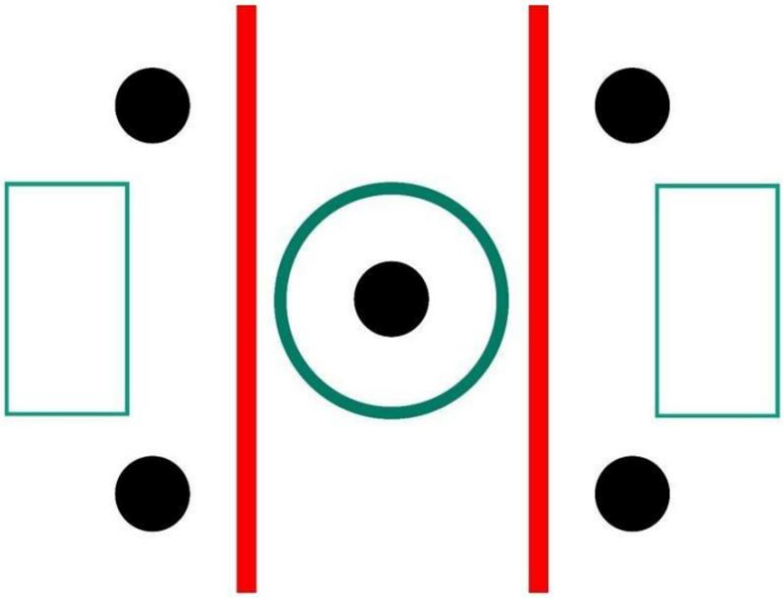

Fig. 1. **Example of a game polygon**

3. Procedure for holding the competition

3.1 Preliminary settings:

3.1.1 Participants will be given time to prepare;

3.1.2. Before the start of the match, participants have 30 seconds to prepare for the match.

3.2. The operator is located on his side of the field.

3.3. Competition conditions:

3.3.1. It is allowed to physically block the opponent's robot if the opponent is in possession of the ball at that moment. Otherwise, blocking is prohibited.

3.3.2. In case of violation, the first warning is issued. In case of repeated violation, the ball is moved to the middle of the field and the robots continue the game from the starting positions.

3.4. Game duration:

3.4.1. The match consists of two 2-minute halves. Extra time may be assigned by decision of the referees.

3.4.2. The first and second halves of the game are played by changing sides of the field; the team is given 1 minute to change sides of the field.

3.4.3. The stopwatch is started together with the referee's signal to start (whistle). The stopwatch runs throughout the entire half (2 minutes), without stopping the time (except for time-outs taken by the referee).

3.4.4. By the referee's decision, the team is penalized with one goal for every minute of delay. The team is considered to have lost with a score of 0:5, in case of failure to appear or unpreparedness within 5 minutes.

3.4.5. If the difference in goals scored in a match reaches 10, the match is ended early.

3.5. Start of the game:

3.5.1. The team that chooses the goal in the first half is determined by drawing lots.

3.5.2. Each half of the match begins with the ball being placed in the center of the field.

3.5.3. All robots must be on their half of the field on the black marks.

3.5.4. Robots must not move (wheels must not rotate).

3.5.5. The referee places the ball in the center of the playing field. At the referee's command, the stopwatch starts and the robots begin to move.

3.5.6. Any robot that starts playing before the referee's signal will be removed from the field for one minute.

3.5.7. In the second half, the teams change goals.

3.6. The game stops at the referee’s signal (whistle), the robots must stop moving.

3.7. The referee may take a time-out to repair the playing field, for a referee meeting or to clarify the rules of the competition. During this period, the referee stops the match stopwatch.

3.8. The decisions of the referee on the field are not discussed by the team participants and coaches and are final.

3.9. Teams may not speak negatively towards opponents or judges, otherwise the team may be disqualified and removed from the competition.

4. Game moments

4.1. Goal:

4.1.1. A goal is scored when the ball completely crosses the goal line, provided that no violation of the rules was committed by the team that scored the goal.

4.1.2. After a goal is scored, the game starts again from the center of the field.

4.2. Ball out of bounds:

4.2.1. The ball will be considered out of bounds, if he left the field.

4.2.2. After the announcement “the ball is out”, it is placed on the nearest black mark, without giving an advantage to either team.

4.3. Blocking:

4.3.1. If the situation on the field does not change within 5 seconds, the referee has the right to move the ball to the nearest black mark.

4.3.2. If robots interfere with each other's movement, then, at the judge's discretion, the robots may be moved apart by the judge to a minimum distance from each other, sufficient for them to begin moving freely.

4.4 Group defense:

4.4.1. Group defense is considered a situation when more than one robot of the defending team touches the goal.

4.4.2. In the case of "Group Defense", the robot that makes the least contribution to the game is placed in the center of the field.

4.5 Pushing. If two robots are touching each other, the ball is between them and one robot pushes the other, the ball is immediately moved by the referee to the nearest unoccupied black mark.

4.6. The robot is damaged:

4.6.1. The robot is considered damaged in the following cases:

4.6.1.1 The robot is not capable of independent movement;

4.6.1.2. When two robots are tightly coupled, as a result of which both cannot continue the game;

4.6.1.3. In case of significant loss of parts by the robot, when further movement of the robot poses a danger to the robot itself, other robots or the field – at the discretion of the judge.

4.6.2. The referee or players, with the referee's permission, may remove a damaged robot (or robots) from the playing field.

4.6.3. A damaged robot must remain outside the playing field for at least 15 seconds (or 30 seconds at the referee's discretion).

4.6.4. A damaged robot may be repaired and/or replaced with a spare one, after which, with the permission of the referee, it may be returned to the mark closest to the goal it is defending.

4.6.5. After a robot collides with another robot, the referee may return the robot to its playing position.

5. Counting points and determining winners

5.1. The tournament is held according to the Olympic system.

5.2. The results of each match are calculated based on the number of goals scored. The team that scores the most goals is considered the winner of the match.

5.3. During the qualifying round, teams will be awarded 3 points for a win, 1 point for a draw and 0 points for a loss.

5.4 Teams will be selected for the final based on the following criteria:

5.4.1. Number of points scored.

5.4.2. Number of goals scored.

5.4.3. Difference in the number of goals scored and conceded.

5.4.4. The result of a match between two teams in a personal meeting.

5.5. If the score in a Final Round match, played according to the play-off ("knockout") format, is tied, the match is not stopped and the game continues until the first goal is scored.

5.5.1 If a goal is not scored after 2 minutes of extra time, the goalkeepers will be removed, in the case of two attackers, the team can choose the robot to be removed.

5.5.2 If a goal is not scored after another 2 minutes, the team with the highest ranking at the end of the qualifying round will be awarded.

Appendix No. 1

Organizational recommendations

1. The walls of the field must be strong enough and well secured to withstand the pressure of the robots.

2. It is recommended to use a box from a standard labyrinth as a playing field.

3. The surface of the field inside the goal must be absolutely flat and strictly horizontal.

4. Each team is provided with a work space (table, 2 chairs).

5. It is better to locate the playing area closer to the spectators, as opposed to the place where the participants prepare.

6. Team leaders are not allowed to participate in the competition.

7. Appoint a team of judges consisting of at least three people for each field.

- 2 people stand along the long sides and control the movement of the ball, announce a goal, and monitor compliance with the rules

- The 3rd person records the total time of the match, as well as the time the damaged robot is off the field.

Appendix No. 2

Methodological recommendations

1. Every year, the maximum permitted robot size (in diameter) will decrease by 20 mm. Thus, in 2025, the maximum permitted diameter will be 240 mm, in 2026 – 220 mm. The size will not change further.

2. The maximum permitted height of the robot will not change and will be 220 mm.