ARCHERY (Τοξοβολία)

PARTICIPATING AGE CATEGORIES
Primary 4th – 6th, Gymnasium, Lyceum, University, Special

(Based on the Categories of the other Robotex Cyprus Challenges)

A. GOAL

The goal of the Robot Athletes is to accurately achieve the center of the target, using their mechanisms and a common rubber.

The sport requires accuracy, engineering and correct calculations.

The regulations are based on the respective regulations of the Minoan Robotics Competition and have been adapted at various points for the organization of Robotex Cyprus.

B. TEAMS – COACHES

1. Teams and not individuals participate in the Games.

2. Each group can consist of two (2) – five (5) persons. The regulation applies as in the other Robotex Cyprus challenges for the participation of up to one person of age category X in a team of the next age category X+1.

3. Each team should nominate one (1) Robot Operator (from this point forward referred to as Operator).

4. Only the Operator is allowed in the waiting area or play area. The rest of the team will remain in the team area or watch the game from the audience. If a team does not adhere to the above rule and its members roam the field then the team will be disqualified.

5. The team is allowed to change Operators in every round it makes on the track in order for all the members of the team to engage in the sport, but this is not mandatory.

6. Each team is allowed to have only one robot. It is forbidden to change the robot during the competition.

7. Teams are not allowed to share the same robot.

8. If a team has a serious problem with its robot is only allowed to change the microprocessor of the robot after permission from the Head judge.

C. ROBOT ATHLETE - ATHLETE CATEGORY

The competition is open to Robot Athletes constructed with LEGO and ARDUINO kits.

All Robot Athletes compete together in their age category.

1. The Robot Athlete must be autonomous.

2. Its maximum dimensions must be 25 cm Width x 25 cm Length and its mass up to 600 gr.

3. To confirm the specifications listed above, the Robot Athlete will be weighed and must comfortably fit into a control box.

4. The control box measures 25 x 25 cm plus two (2) millimeters tolerance. That practically means that only robots with maximum width and length 25 cm will be accepted to compete. It is emphasised that the two (2) millimetres tolerance refers to the control box only and not to the size of the robot. Tolerance is given so that the robot can easily fit in the control box.

5. The Robot Athlete should be placed in the control box without applying pressure.

6. The Robot Athlete must not damage the track or pose a threat to spectators in any way.

7. The Robot Athlete must have a start and stop button.

8. It is forbidden to use pneumatic devices / hardware in any category of robots.

9. Regardless of the robot category, only one microprocessor, 4 motors and 4 sensors are allowed.

D. TECHNICAL CONTROL

1. The initial technical inspection will take place on the day of the Games at a place and time to be determined by the Organizers.

2. Technical inspection includes inspection of the robot according to the conditions described above. If he does not meet the specifications, he will not be allowed to compete and will be automatically disqualified from the event.

3. If a team is not in place during the initial scrutineering, this results in the team being automatically disqualified from the match.

4. A secondary technical check is also carried out before each round in the match.

5. It is mandatory for the Robot Athlete Operator to have and wear safety glasses. Protective equipment is mandatory on the playing field before and during matches.

6. The lack of protective equipment in whole or in part will be reason for the team to be disqualified from the Sport.

7. The maximum weight of the arrow is 30gr and it will be weighed.
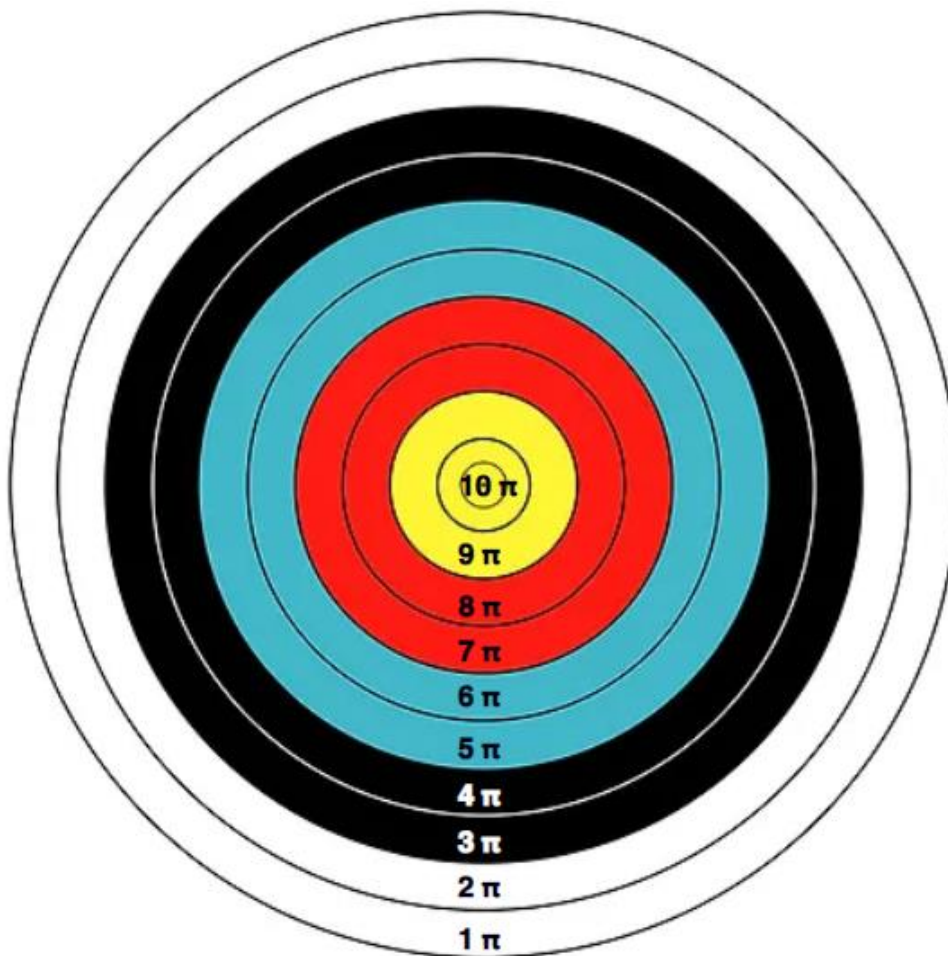
E. TRACK

1. The Race track has dimensions of 236 cm Length x 114 cm Width x 5 cm Perimeter Barrier Height.

2. Its color is white and the texture of the tarpaulin is printable.

3. It has a 5 cm thick black frame around the perimeter.

4. On one side in width it has a blue rectangular frame with dimensions of 105 cm x 40 cm.
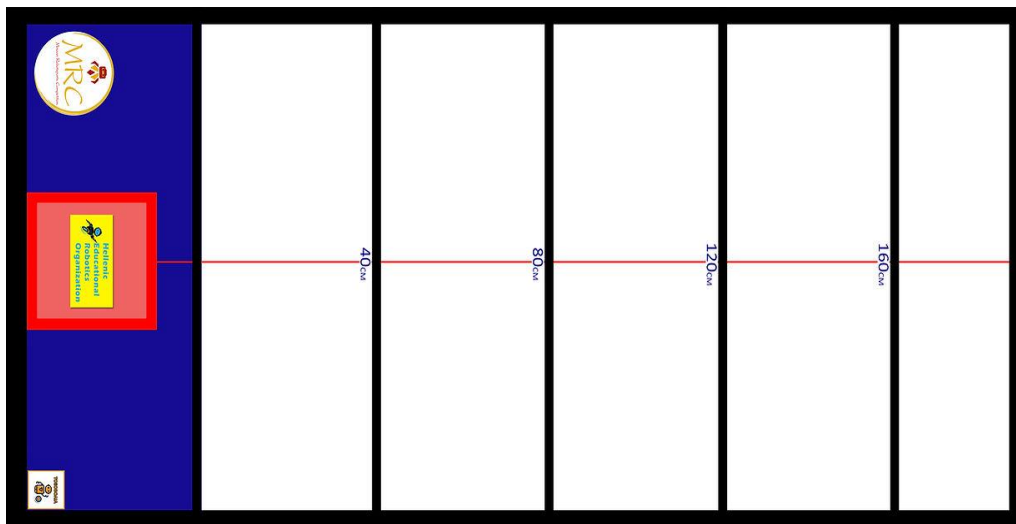
5. In the middle of it and on the edge there is a red square frame with dimensions 30 cm x 30 cm where there is a base with dimensions 25 cm Length x 25 cm Width x 10 cm Height (Robot Athlete position).

6. The target is a styrofoam circle with a total diameter of 40 cm.

7. The target has 10 zones with 10 concentric circles.

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8. The highest score one can achieve with one shot is 10 points if it hits the center of the circles. Each shot on subsequent rings reduces the score by 1 point. The goal of every Robot Athlete is to collect as many points as possible.

9. If an arrow touches 2 circles, the circle with the highest score counts.

10. If an arrow misses the target, there is no point.

11. The center of the target is directly opposite the Robot Athlete at a height of 35 cm from the surface.

12. The Competition arrow should weight up to 30 gr. The team must make their own dart, which must have a rounded tip and not be dangerous to use.

DOWNLOAD TARGET FOR PRINT & PRACTICE

DOWNLOAD FULL MAT FOR PRINT & PRACTICE

F.   THE COMPETITION - RACE

PREPARATION

1. The Robot Athlete is placed in the position (base) on the track with the front of the robot facing the target.

2. The Operator takes a position behind the Robot athlete and having previously put on the protective equipment.

START - PROCESS OF THE RACE

1. The Robot Athlete must start autonomously, five seconds after its Operator presses the Start-Stop button (time delay). During these five seconds, the Operator must move back a few steps for safety reasons.

2. The Robot Athlete must shoot his arrow towards the center of the target.

3. In the first attempt the target is placed 40 cm from the black line, in the 2nd at 80 cm from the black line, in the 3rd at 120 cm from the black line and in the 4th at 160 cm. The effort is made every time in the total distance.

4. The Robot Athlete must compete in all 4 distances before the next Robot Athlete takes his turn.

5. At each distance the Robot Athlete should adjust its height autonomously either after pressing the start button or by using a sensor. Manual adjustment is prohibited. The only contact the Operator can have with the Robot Athlete is the button press after the arrow feedback. Any violation will void the Robot Athlete's attempt and receive 0 points at the distance where the violation occurred.

6. The points that the Robot Athlete earns in each round are the total of the points in all distances.

ROUNDS – ATTEMPTS

1. The race consists of 6 rounds.

2. In each round the Robot Athlete will compete in all 4 distances on the track based on the order to be announced by the organizing committee.

3. If an Operator in a round is not in his position, he loses the round and the next Operator takes the turn. The Operator who lost the round will have to wait until all the other teams' efforts have been completed and his turn comes again in the next round.

4. The referee records the points that the robot athlete achieved at all 4 distances of a round.

END OF AN ATTEMPT

1. When the Robot Athlete competes in all 4 distances.

2. If the Robot Athlete experiences a technical problem.

3. If the Robot Athlete during an attempt proves to be unable to shoot the dart in a straight line and this poses a danger to him, the referee or the participants on the playing field.

BAN A TEAM

In the following cases the team is excluded from the Sport and will have to withdraw.

Team results are not taken into account and are not included in the list of competition results.

1. If a team's Robot Athlete does not comply with the requirements set forth in the rules of the Sport and the team refuses to accommodate him.

2. If the Operator behaves in an inappropriate or indecent manner, swears or provokes or verbally or otherwise attacks teammates or the referees.

3. If it is detected that the Robot Athlete does not work autonomously but with remote control, bluetooth, wifi etc.

WHAT IS ALLOWED AND WHAT IS PROHIBITED

Allowed

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- The use of common tires of independent diameter and independent thickness.

- The use of a nail with a rounded tip to make the arrow.

- Use a toothpick or a bamboo skewer to make the arrow, but be careful to remove the point of the spike that can cause injury.

- The use of a thick embroidery needle with a round tip.

Not allowed

- Robot Athletes to use parts that can harm spectators, referees or even their Operators.

- The use of adhesives to increase adhesion to the Athlete's mounting surface.

- Breaking the Robot Athlete into pieces or expanding it in any way during the match.

- Remote control.

- The use of pneumatics.

- The wireless connection (bluetooth) with a computer or any other electronic device during the match. Teams found to have connected their robot wirelessly (team members or coaches) during the match will be disqualified from the Sport.

G. WINNING TEAM

For each age group separately:

1. A ranking is made based on the total points achieved by the teams in the category.

2. The team with the highest total points in any of the rounds takes the first place, the team with the next highest distance takes second place, etc.

3. In case of a tie, the second-best total points is considered. If a tie still occurs, the third-best total points is taken into consideration. In case of a tie still exists, the teams compete in an additional game to decide the winning team in the category. In this process, ten (10) minutes are given to the team to improve their Robot.

Applying the practice followed at Robotex Cyprus, a final attempt (best-of-the-best) will be held between the teams with the highest score in each category. For this final round, the teams make only one attempt and a ranking is made to highlight the winning team.

NOTES

The maximum number of players in MINOAN ROBOTSPORTS GLOBAL OLYMPIAD that takes place annually in Heraklion, Crete is only three (3) and the competition is executed based on the rules outlined here.