DIRECTORATE GENERAL OF VOCATIONAL AND TECHNICAL EDUCATION

100 CENTURY OF EDUCATION

TÜBİTAK

TİKA

INTERNATIONAL MEB ROBOT COMPETITION

17th INTERNATIONAL MEB ROBOT CONTEST

EGG COLLECTING ROBOT CATEGORY GUIDE

2025

Education, Technology, Production from Roots to the Future

İÇİNDEKİLER

EGG COLLECTING CATEGORY RULES

1. INTRODUCTION

This competition is carried on by racing robots that have technologies like sensors, mechanics and artificial intelligence. Two robots race in competition area at the same time. Theme of competition was inspired by turtles “caretta caretta” living under control in our country’s coasts where they laying their eggs. It will be implemented by collecting small colored eggs which are distributed to competition area and bringing them to collection fields. Scores will be given according to the number of eggs collected in a specific time.

The aim of this game is to collect all eggs which have same color with its corner area that robot started and leave them all in this area.

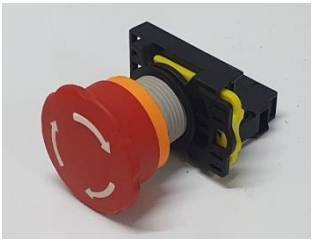
2. SPECIFICATION OF ROBOT

2.1. DIMENSIONS AND WEIGHT LIMITS

Maximum robot dimensions are 30x30x30 cm and weight limit is 3kg.

2.2. OTHER SPECIFICATIONS

There must be an accesible emergency button (red colored mushroom type push button), and 10cm lenght RGB led stript placed horizontally and has same color with its corner area. There will be no any different color light or indicator on top of robot except the color of its corner area.



Red colored mushroom type push button

Led (red, blue)

Robots must move autonomously. After starting, robot cannot split but extend. Robots which break to this rule will be disqualified. Dangerous and extremely disturbing robots or competitors may be disqualified.

3. COMPETITION AREA

3.1. DIMENSIONS OF COMPETITION AREA

- Competition area has 250x250 cm dimensions and encircled with colored frame which has 8cm height.
- Material is white hardboard.

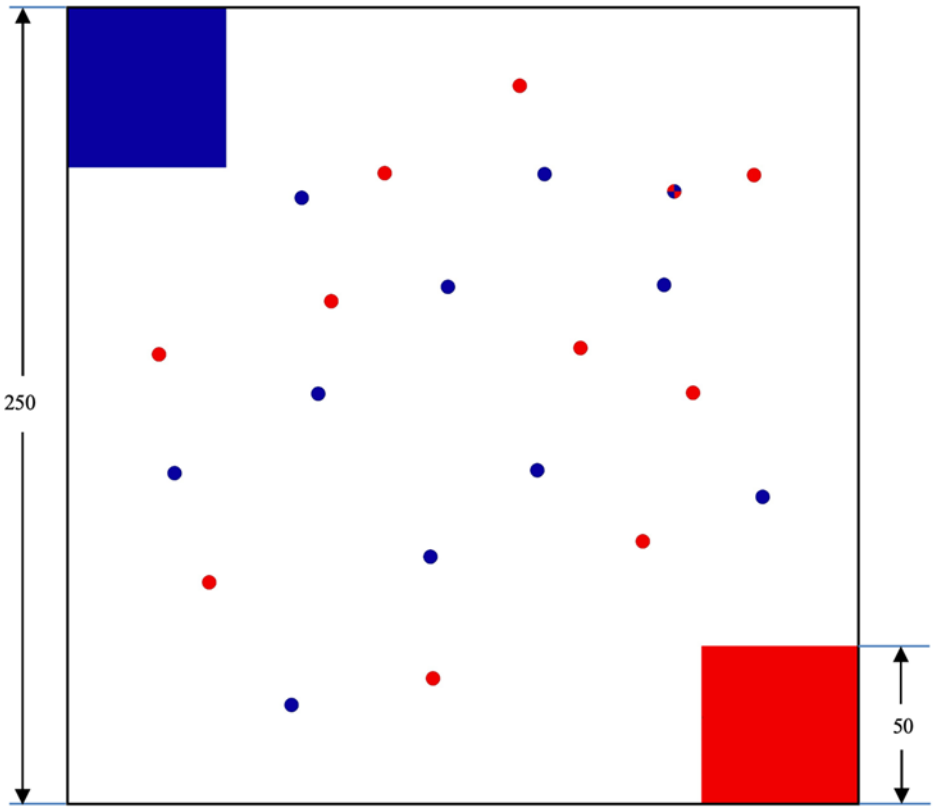


Figure 1 *Caretta Caretta Competition Area*

3.2. EGG COLLECTION FIELDS (CORNER AREAS)

Fields (red and blue) have dimensions (50x50cm) and they are located cross corners of the competition area. Remain part of competition area is white colored and all eggs include red, blue and tricky are spreaded out in this area.

3.3. CARETTA CARETTA EGGS

Eggs are cylindrical shape with 40mm diameter and 20mm height, colored red (RAL3020) and blue (RAL5013). They are made by plastic or wooden material and maximum 40gr weight. They have same color with the color of corner areas.

Red colored eggs and corner area : RAL3020

Blue colored eggs and corner area : RAL5013

Tricky egg color code : RAL5013-RAL3020

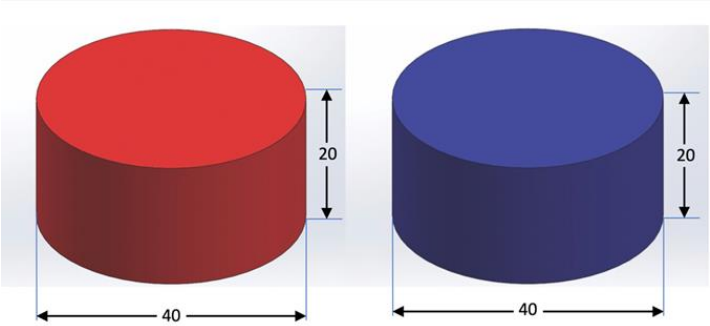


Figure 2 *Blue and Red Eggs*

3.4. TRICKY EGG

It is a same size with others but mixed colored egg which is placed randomly on ground of competition area by the judges. In white area, there is also tricky egg as 21th egg which is colored both red (RAL5013) and blue (RAL3020). It is not compulsory to take this egg from white area.

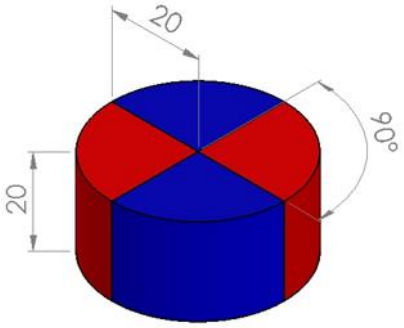


Figure 3 *Tricky Egg*

4. GAME FORMAT AND EVALUATION

4.1. ROBOT PRODUCTION REPORT

It is the report documenting that the robot that the applying student and the advisor will participate in the competition is designed by them and the production process. The report will be uploaded to the system by selecting the relevant robot name from the production

reports section under the management menu after entering the username and password information to robot.meb.gov.tr.

The report includes:

- Materials used in the construction of the robot,
- Explaining the construction process of the robot,
- The language used to program the robot,
- The total cost of the robot,
- It should include photos of the robot's production stage, its final form, the robot's name and the school's logo.

4.2. GAME

4.2.1.STARTING GAME

- Within 5 minutes, robots must be brought to judge desk when they invited to game. If robot was not brought in this period, judge announces that it lost the game.
- 10 pieces red /blue eggs and one tricky egg will be placed randomly by judge.
- The corners (starting field /collection field) are determined by the way of judge's draw lot. Robots start from the color/ corners and they have to collect eggs which are same colored with the color of it's corner.
- When judge gives the start signal, robot runs for collecting.
- The leds showing the colour/corner colour of the competitor robots determined as a result of the draw must be lit during the competition. In cases where it does not light up, it can use its 5 minute technical break right. If the leds that determine the corner colour do not light up, the robot is disqualified.
- Competitors place their robots manually in starting field. During the game, it is prohibited to touch robots. If necessary, the referees may stop and restart the game without waiting for the competition time.

4.2.2.GENERAL RULES

Eggs laid in the starting area are collected by the corner judges. A representative egg is considered collected only if the following conditions are met.

- Eggs are considered to have been laid in the egg collection area that are completely outside the robot.
- Representative eggs are also considered to have been laid if they are perpendicular or on top of each other in the collection area.
- Eggs on the line where the collection area and the white area intersect are also considered to have been laid in the area.
- If the representative egg touches the ground in the collection area and remains motionless for 1 second, it is collected by the referees. Eggs that arrive in the collection area as a result of pushing or bumping are considered to have been laid.
- If the immobilized egg in the collection area is picked up again by any robot before the referee has a chance to pick it up, the referees will accept this egg as laid by the robot that laid it first.
- The robot or robots that do not lay at least one egg in their corner at the end of the time will be deemed to have lost the game.
- During the game, the robot will lose the game if parts with a total weight of more than 10 g fall on the field.
- If the robots get stuck on each other or on the walls, they will wait until the end of the competition time.
- For the robot that is determined to have started early by the referee, the race is restarted with a warning. The robot that starts early twice is eliminated.
- No substance used in the robots should be of a nature to harm the spectators, competitors, the competition track and the competition materials. Water, oil, flammable, flammable liquids and gases and dangerous chemicals must not be used.
- The Competition Organization Committee has the right to change the rules when it deems necessary.

4.2.3. FINISHING GAME

- The game ends when the representative eggs are collected from the collection area or by the referee's decision after the completion of the 3-minute time limit set by the referees.

- The competitor who leaves 10 of his/her own balls in the white area is considered to have completed his/her task and the game is over.
- At the end of the competition, if the competitors in the field request, the competition is repeated 1 time.
- The robot that collects the most points at the end of the time is deemed to have won the game.
- In case of equality, the robot that lays its egg first wins the game.

4.2.4.TECHNICAL TIME-OUT

- At the beginning of the competition, it can be taken a technical break by the request of the competitor without moving.
- Technical time-out can be taken only 1 time in a competition.
- Technical break time is 5 minutes.

4.2.5.SCORING

Scoring is done after the robot lays at least one egg of its own color in its own corner. The judges collect the eggs gathered in the dropping area.

- If the egg left in its own area is the same as the field color, 1 point is increased;
- 2 points are deducted if the egg laid in its own area is different from the field color;
- If the penalty egg, which was laid as the 21st egg in the white area, is left in any of the collection areas, 3 points are deducted from the robot of the color left;
- Eggs of the opponent's color left in the opponent's area are credited to the opponent plus 1 point;
- Eggs of the opponent's own color left in the opponent's area have no effect on the score

4.3. MATCHING

In case the number of robots is low or with the decision of the competition organizing committee, the tournament system can be applied at any stage of the competition.

4.3.1.TOURNAMENT METHOD

The winning robot will get 3 points and the losing robot will not get any points. In case of equality of points at the end of the competition, both robots will receive 1 point each. In case of a possible point equality in the ranking at the end of the tournament, the results obtained in the competitions (average) are taken into account. If the equality continues, the lighter robot takes the top place in the ranking.

4.3.2.ELIMINATION METHOD

In elimination system, robot which gets better score then other goes to next tour.

5. WARNING FOR COMPETITORS

The general rules regarding the competition applications and the category are written in the “Application Guide”. Please read the rules carefully.

6. CONTACT

Competitors should make their questions by selecting their categories from the information menu after logging into the “robot.meb.gov.tr” system. Questions other than category messages will not be answered. The responsibility in this regard belongs to the competitors.