

REPUBLIC OF TURKEY
MINISTRY OF NATIONAL EDUCATION
The Directorate of Technical and Vocational Education

14. INTERNATIONAL
MEB ROBOT CONTEST
EGG COLLECTING ROBOT
CATEGORY RULES

2020-SANLIURFA

EGG COLLECTING (CARETTA CARETTA) CATEGORY RULES

Theme

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.

1. Specification of Robot

1.1. Dimensions and Weight Limits

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

1.2. Other specifications

There must be an accesible emergency button and 10cm lenght RGB led which has same color with corner

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.

2. Competition

2.1. Dimensions of Competition Area

Competition area has 250x250 cm dimensions and encircled with colored frame which has 8cm height. Frame may be painted with any color.

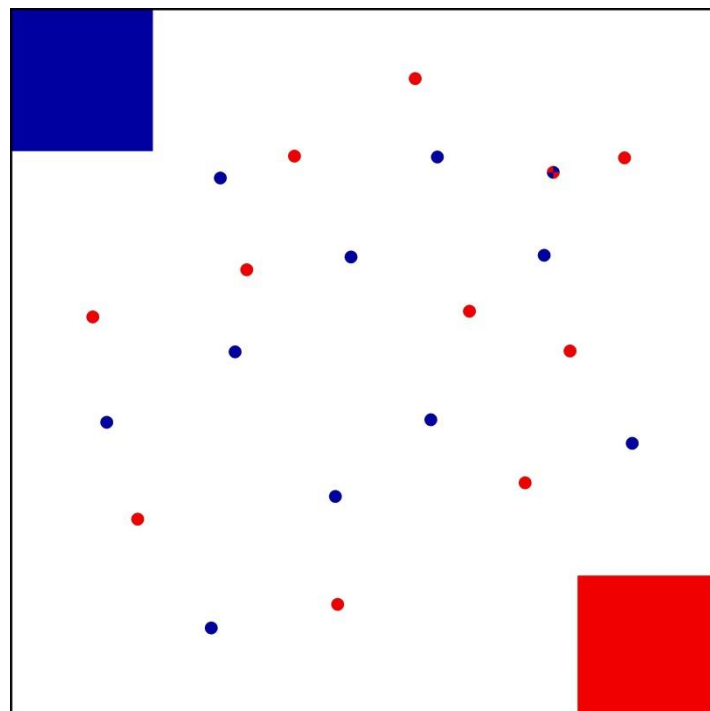


Figure 1 Caretta Caretta Competition Area

2.2. Egg Collection Fields

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.

2.3. Caretta Caretta Eggs

Eggs are cylindrical shape with 40mm diameter and 20mm height. They are made by plastic or wooden material and maximum 40gr weight. They have same color with the color of competitor's corners.

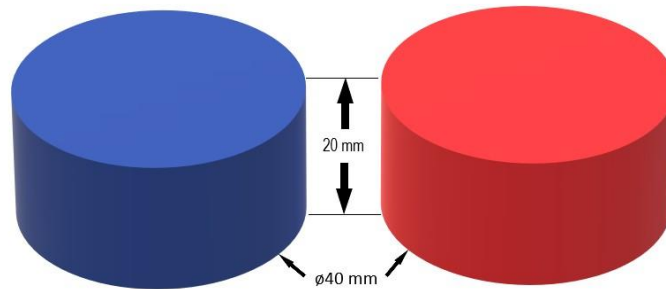


Figure 2 Blue and Red Eggs

2.4. 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 and blue. It is not compulsory to collect this egg from white area.

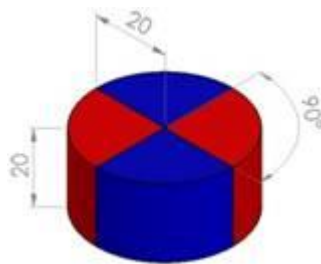


Figure 3 Tricky Egg

3. Game

3.1. Starting Game

The corners (starting field /collection field) are determined by the way of judge's draw lot. 10 pieces red /blue eggs and one tricky egg will be placed randomly by judge. Robots start from the 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. Competitors place their robots manually in starting field. During the game, it is prohibited to touch robots.

Teams have 5min to come competition area after invitation announcement. Teams are disqualified if they don't come in 5 min.

3.2. Game Objective

The goal of this competition is to put all the eggs that have the same color with the field from which the robot started, into the starting area.

3.3. Scoring

Eggs in collection fields will be taken by corner judges. Eggs are taken into consideration only if the following conditions happened;

- If egg is on the ground of collection field without moving,

- Egg should not be inside or under the robot in the collection field. They should be located outside of robot and not be surrounded by any of robot parts.
- Even if the eggs stacked on top of each other , it is assumed that they are collected.
- If the eggs are put on border of collection field , it is also assumed that they are collected.
- Once an egg is leaved in collection field, it is assumed that this egg is leaved by robot even if another robot take it again before judge's collecting

Scoring is given according to followings;

- If egg has same color with its collection field, it is counted +1 point,
- If egg has different color than its collection field, it is counted -2 points,
- If robot picks the tricky egg and places it one of collection fields, robot gets -3 points,
- If the opponent's eggs are placed to opponent's field, they are counted for opponent's score as +1 point

When robots lock on each other or on the walls , it is waited until the end of game time. At the end of game, robot that gets better score than its opponent wins the game and it can go to next tour.

3.4. Finishing Game

Game duration is 3 minutes. When robot collects its 10 balls from white area and leaves them into its own field , it finishes the task and game is over. At the end of duration, robot which gets best score wins the game. If any piece of robot which is over than 10gr drops to ground, robot will be disqualified. At the end of game, robot which could not collect and leave at least one egg to its own corner assumed lost the game. In case of equality, the robot lighter than other one can go to next tour

3.5. Time Out

When robot is started before the judge's signal, starting is repeated. If it happens two times, robot is disqualified. Time is over when all eggs are collected or gaming time (3 min) is up. Robot which gets best score wins the game.

4. Matching

4.1. Tournament method

If there are not so many robots registered to the competition, tournament method may be applied. Winner gets 3 points, looser gets 0 points. In case of equality on ranking list , average scores will be considered.

4.2 Elimination method

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

Notice : Following color codes will be used for eggs and competition area;

Red egg and its collection field	: RAL3020
Blue egg and its collection field	: RAL5013
Tricky Egg	: RAL5013-RAL3020