



# One Minute Game

## Shoot the Ball robot

### JUNIOR

## GAME RULES



## Section 1 Participants

### Article 1

- 1.1 One member per team.
- 1.2 Every team may or may not have teacher/mentor by each team must have only 1 person (1 teacher or mentor can supervise multiple team).
- 1.3 Each participant can play only one team.

## Section 2 Playing field and components

### Article 2 Playing field dimension

- 2.1 The playing field is flat but may have joints less than 3 mm. in height and the field have size 120 x 120 cm. There are path lines as shown in Figure 1.
- 2.2 The black line wide around 2.5 cm.

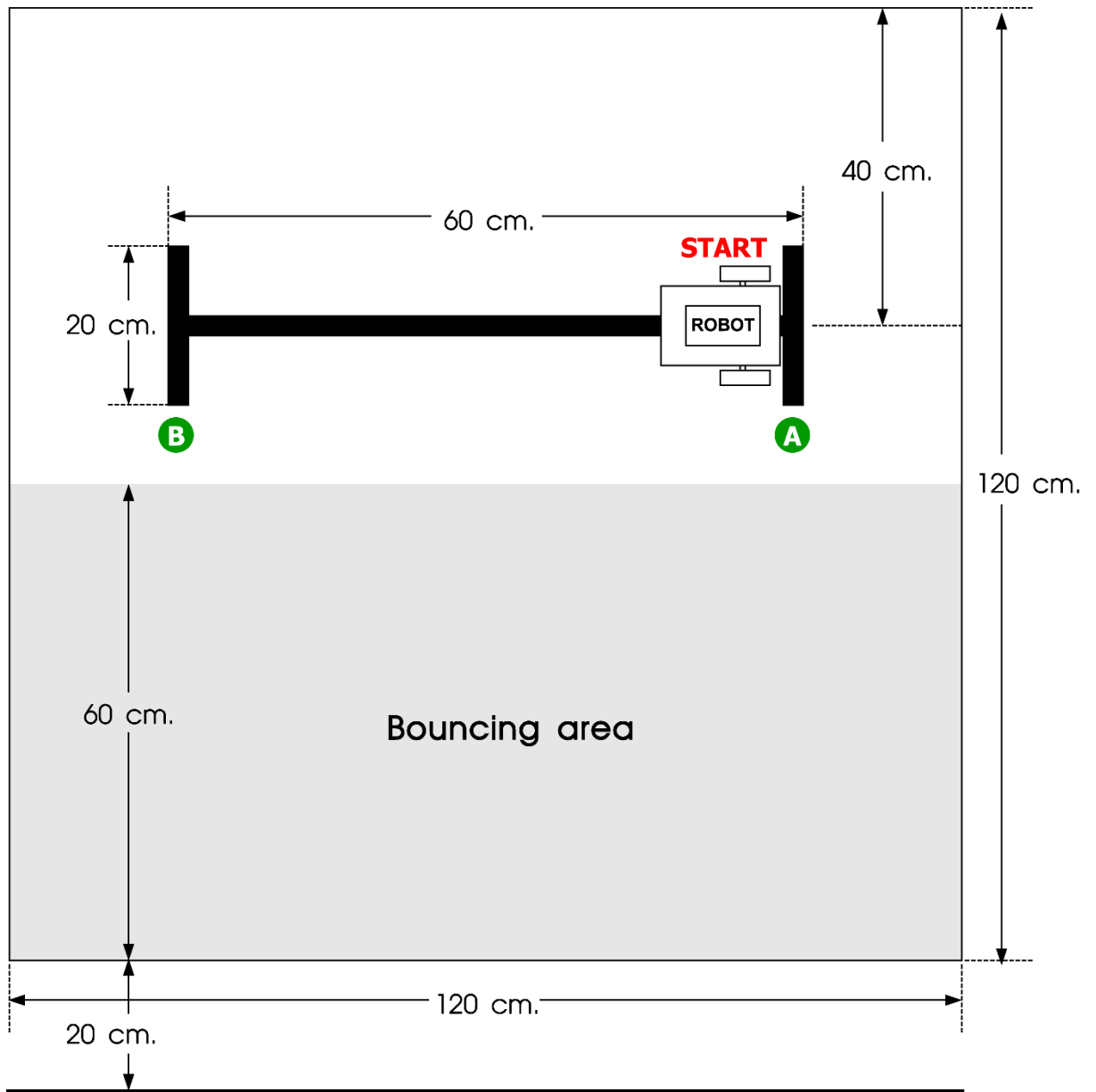
2.3 There is bouncing area for dropping the ping-pong ball.

### Article 3 Size of the ping-pong ball

3.1 The ping-pong ball diameter is between 3.5 to 6 cm.

3.2 Allow any color.

3.3 Competitors must bring their own the ping-pong balls as needed.



Participant must stand far from the playing field at least 20cm.

**Figure 1 : The playing field of the Shoot the ball game.**

## **Article 4 Lighting and magnetic conditions**

Team must prepare the robot to work under lighting conditions in the playing field which the lighting condition may differ in the competition.

## **Section 3 Robot requirements**

### **Article 5 Technical features**

- 5.1 The robot size must not exceed than 20 x 20 cm. No height limit and it must be placed in a rectangular box within 20 x 20 cm. that the referees have prepared before the competition.
- 5.2 Any type of wheeled robot is allowed. For microcontroller rules, the sole decision rests with the individual country representative or the committee in the absence of a country representative. Please contact your individual country representative/committee for more information.
- 5.3 The number of movement motor maximum is 2.**
- 5.4 The number of sensor maximum is 2 and no limit of any sensor type.**
- 5.5 The robot must be programmed to work automatically. Participants must be prepared to deal with any possible radio waves or infrared light during practice and competition.
- 5.6 Robot must install the container that have diameter not exceed than 15 cm., height is not more than 10 cm. for receiving the ping-pong ball. Do not fall out of the robot while doing missions.
- 5.7 Robot cannot be separated or expanded while playing the game.
- 5.8 No limit on the source of all mechanical parts and accessories. It can be hand-made, formed from 3D printer, or modified from toy.
- 5.8 Fixing screws and nuts or any fixation component in the robot must be securely firmly. If during the playing have any piece dropped or broken onto the playing field, the referees will not remove it and allowed to continue the competition. Referees cannot held responsible for consequences during removal of a loose piece from the playing field.
- 5.9 No limit for the computer properties used to program the robot.
- 5.10 No limit for power supply features.

## **Article 6 Containing the ping-pong ball**

- 6.1 Robot must prepare the container for receiving the ping-pong balls following the rules. It is prohibited to put any material into the container.
- 6.2 If the ping-pong ball bounces out of the container during running the game, point is not counted but participant can bring it back for re-shoot.
- 6.3 The referee will count the score from number of the ping-pong balls in the container after timeout of the playing only.
- 6.4 Participant can replace the new container when it full of ping-pong balls. For the pinbg-pong balls that have already been received, please separate them to wait for the referee to count after timeout.

## **Article 7 Prohibition of making the robot**

There must not installed any parts or equipment that can any way damage the playing field.

## **Section 4 Mission**

- A. The participant shoot the ball into a container that installed on the robot. The robot must move along a line between point A and B at speed at least 30 cm. per second.
- B. **The robot must turn around when it reaches points A and B. Only move backward is not allow.**
- C. To shoot the ball, it must bounce on the bouncing area specified in Figure 1 only once first.
- D. If the ball does not fall into the container, participant can be re-shoot that ping-pong ball.
- E. The time of playing is only 1 minute. After time out, the referee will count the score from the number of the ping-pong ball inside the container plus the number of the round moving from point A to B and B to A of the robot.

## **Article 8 Preparation before playing**

- 8.1 The participant prepared the balls and container that will receive the ball as needed.
- 8.2 Place the robot over the line at point A by facing any direction.
- 8.3 No testing before playing.

## **Article 9 Start of playing the game**

- 9.1 The playing will begin when the participant turns switches on to run the robot operation and back to stand in position 20 cm. away from the competition field. The stopwatch starts counting the time after that the robot must move automatically and independently without any control from any device.
- 9.2 The participant shoots the ball on the playing field to bounce to the container on the robot.

## **Article 10 How to play**

- 10.1 When the game starts, the participant turns on the robot and presses the button at once to start. The robot moves out from the starting point.
- 10.2 When leaving the starting point, the robot must move along the line between points A and B with speed at least 30 cm. per second. So, the robot must not take time more than 5 seconds for moving between point A and B.
- 10.3 If the referee found that the robot moving too slow, the referee will order to terminate the playing and clear the score that get in that round.
- 10.4 After timeout, the referee will count all the ping-pong balls that robot received plus the number of the around moving between point A to B of the robot as the final score. Record this score to ranking.

## **Article 11 Retrying**

Did not allow for retrying or restart in this game.

## **Article 12 The playing time**

- 12.1 The playing time is 1 minute.
- 12.2 No testing time before starting.

## **Article 13 Scoring**

- 13.1 When robot move around between points A and B complete, will get 1 point per round.
- 13.2 The balls that robot received in container is equal 1 point per ball

13.3 After timeout, the referee will combine the scores from the number of the around moving between point A to B of the robot and the number of the balls in container.

### **Article 14 The end of playing**

14.1 Timeout 1 minute.

14.2 The referee ordered to terminate the playing due to the robot move too slow.

14.3 The robot move slipped out of the line.

### **Article 15 Starting of the robot**

The starting of the robot is possible with a single press of a switch or button on the robot. After that, the robot will work automatically.

### **Article 16 The lack of progress**

16.1 If the following cases happens for more than 10 seconds shall be deemed to lack of progressed in this game.

16.1.1 The robot does not move

16.1.2 The robot is spinning all the time.

16.2 If the robot lack of progressed, the referee will order to terminate the playing and count the number of balls that robot received plus the number of the around moving between point A to B of the robot before lack of progress is happened.

## **Section 5 The game format**

### **Article 17 Format of competition**

17.1 In the first round is a playing to collect points. Each team completes its own mission to earn scores.

17.2 Every team has chance to complete the mission at least 2 times Choose the best scores to be placed in the rank.

17.3 The top 4 teams with the highest scores will ahead to the final round.

17.4 The finals round will be played on the same rules as the first round.

## **Article 18 Ranking**

- 18.1 The top 4 teams with the highest scores will ahead to the finals round.
- 18.2 Team 5th to 8th won the 3rd runner-up award.
- 18.3 Team 3th and 4th in the finals won the 2nd runner-up award.
- 18.4 The 2nd place scoring team in the finals won the 1st runner-up award.
- 18.5 The highest score team in the finals won the Champion of competition.
- 18.6 For first round, in the case of equal scores team with more the total ball points will get the better ranking.
- 18.7 From rule 18.6, if they are equal will be considered to be ranked together.
- 18.8 If the teams playing in the finals have equal score, will have to play again. The team with more scores will be the better ranking.
- 18.9 From rule 18.8, if still got equal score, the referee will count the score from the number of balls that robot can receive only. The team with more scores will be the better ranking.

## **Section 6 Fouls**

### **Article 19**

The participants who act insulting, abusing an opponent, whether verbally or physically, or lets the robot make noises, express messages or act in a disrespectful manner will be disqualify.

### **Article 20**

If the participants do any of the following, will be deemed to be fouls as well:

- 20.1 Do any act that interferes with the opponent's robot.
- 20.2 Enter the opponent's field, throw, or bring any piece or equipment into the opponent's field.
- 20.3 Take any action that causes the competition to be stopped without justifiable reason.
- 20.4 Acts of any kind that is disrespectful to the competition.
- 20.5 Take any action that contradicts or does not accept the decision of the referee without sufficient justifiable reason.

## **Section 7 Punishment**

### **Article 21**

Those any participants do the action following the Article 19 and 20 will be ordered to terminate the playing and count the score as received.

### **Article 22**

If the mentor does the action following the Article 19 and 20, all the teams that mentor supervised will be disqualified.

### **Article 23 Conflict of judgment**

During the competition, the referee's decision is final.

## **Section 8 Identification of the robot**

### **Article 24**

The identification of the names or numbers of robots participating in the competition must be always made clearly and easily visible.

