REGULATIONS «GIRLS FIREFIGHTING»

Original Authors: Kelly Olvi

Edited by: Organizing Committee ROBOTEX CYPRUS

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1. Introduction

The original Girls Firefighting competition as designed and implemented at Robotex International in Estonia addresses all females around the world to encourage them to participate and learn about technology and engineering.

2. The Aim

The aim of the original Girls Firefighting competition is to raise more women in engineering and ICT specializations. We have set it as priority to change the ratio of boys and girls in robotics competition fields.

We hope to see many eager girl participants, whose passion for robotics, technology, programming, electronics, mechanics and everything digital era related, would persist and pass the correct message to all the women and girls in the world that “we can do it in technology as well”!

3. Objective

The objective of the competition is to create a robot that is capable of locating and extinguishing four (4) randomly placed candles, without touching them, inside a field outlined by a black line.

4. The Team - Eligibility of Participation

1. The competition accepts participation of teams and not individuals.
2. The team consists of two (2) – five (5) persons; females only.
3. **Only one player** of category X is eligible to participate in a team of the immediate higher category. That is:
    - A player of category «4th – 6th Grade Primary» is allowed to participate in a team of category «Gymnasium»
    - A player of category «Gymnasium» is allowed to participate in a team of category «Lyceum».
4. The opposite of the rule 3.3 above does not apply. That is, one player of category X is not allowed to participate in a team of any lower category. For example, a player that belongs in category «Lyceum»” is not allowed to participate in a team of category «Gymnasium» or «4th – 6th Grade Primary» etc.
5. The coach of the team is not allowed to participate in the same competition with his/her team.

6. The team defines its leader who will be responsible for the communication with the Organizing Committee and the judges, for the technical control process and for operating the robot during the competition.

5. Robotic Platforms, Categories and Levels

1. The competition is organized for the platforms, categories and levels shown in the table below.

Competition	Robotic Platform	Primary 4th -6th	Gymnasium 1st – 3rd	Lyceum 4th – 7th	University	Special (Adults & Soldiers)
GIRLS FIREFIGHTING **(ΝΕΟΣ)**	ARDUINO, RASPBERRY Pi, ARM, ESP, SELF-DEVELOPED ROBOT	√	√	√	√	√
LEGO GIRLS FIREFIGHTING **(ΝΕΟΣ)**	LEGO EV3, LEGO SPIKE PRIME	√	√	√	√	√

6. The Robot

1. The robot must be autonomous.
2. The maximum dimensions of the robot at registration and at the beginning of the try are 200x200mm (length x width). The robot can expand during the competition up to 300x300mm (length x width).
3. The robot can weigh up to 3kg.
4. The robot must have a start and stop button or a remote control (recommended).
5. Robots are forbidden to damage the field and endanger the spectators.
6. Robots can use any type extinguisher to put out the candle fire but are not allowed to damage the field and endanger the spectators.
7. The field has to stay clean after the try. If needed, a member of the Organizing Committee will clean it quickly right after their try.

7. The Field

1. The field area is white with dimensions of 2.5 x 3.5 m. The field is made out of white PVC polyester fabric which has B1 flame resistance.
2. The circles are made out of the same PVC material and placed on top of the field.
3. The field is surrounded by a 25mm black line, as seen on the picture below. There is an extra 200mm white area outside the black borderline.

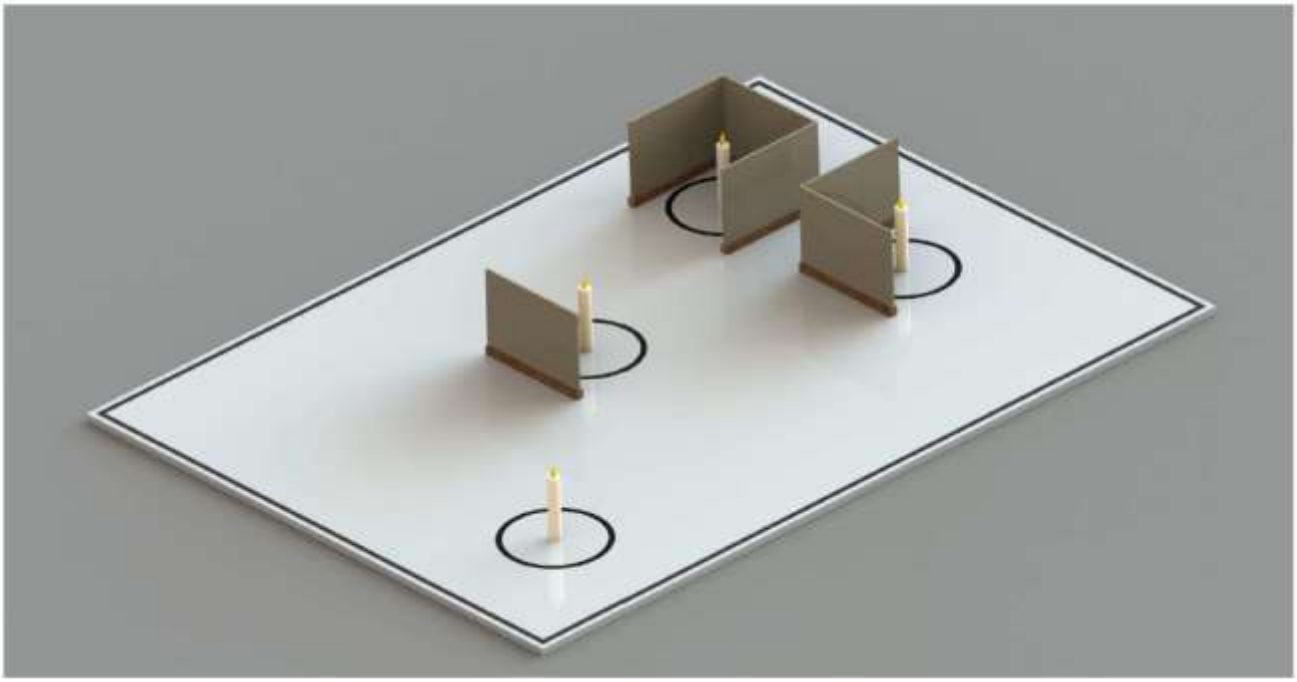

Figure 1: Example of the field and candle combination

4. The competition area dimensions are 3.5 x 4.5m, which includes the field.
5. Candles and walls will be randomly placed for every try. There will be a minimum of 10 different combinations of candles and walls prepared for the challenge.
6. Candles stand at the centre of a white circle, surrounded by a 25mm width black circle.
7. The candles have a 50 mm diameter and 100-400mm height. (NOTE: In Estonia the candle heights vary according to age groups. Winning teams should refer to the rules of Robotex International)

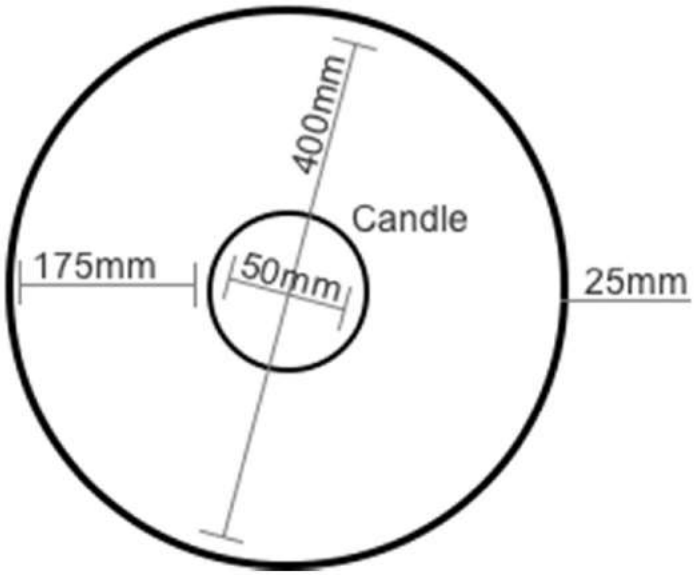

Figure 2: Candle & Circle with Black Line Perimeter

8. For all competing categories the candles are blocked by walls:
    - 1 candle - No wall
    - 1 candle - 1 wall
    - 1 candle - 2 walls
    - 1 candle - 3 walls
9. The wall widths vary from 200mm to 350mm and are 400mm tall. They are held up by wooden bases that are 45mm tall and may span the approximate width of the wall.

    NOTE: Two walls may have gaps between the connections.
10. The challenge may be held in areas with natural light present which may change the lighting conditions of the track. Be prepared to engineer around this natural condition.

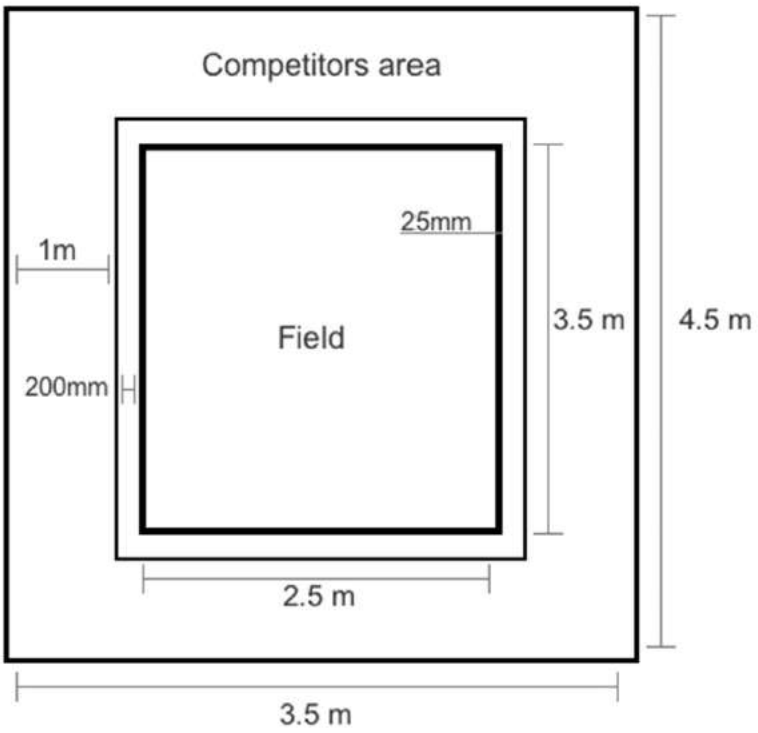

Figure 3: The field

Figure 4: Top view of the field

8. The Competition

1. The robots will start each try at a spot along the border line as chosen by the competition coordinator.
2. A try starts with the referee's signal.
3. The robots must start moving in 5 seconds after they have received the referee signal. If the robot hasn't moved within 5 seconds, the try will be considered as DNF (=DID NOT FINISH).
4. The competition is held in two rounds: the qualifying and the final rounds.
5. For each round, the robot will have to execute 3 tries. For each round, scores of the 3 tries will be summed together.
6. Each robot has 3 minutes to extinguish the 4 candles in every try.
7. Only competitors can operate and manipulate the robot during each try.
8. If a competitor touches the robot after the challenge has begun, the time stops, the try ends, and the challenge will be scored based on the number of candles extinguished before the robot was touched.
9. If the robot leaves the field, the time stops, the try ends and the challenge will be scored based on the number of candles extinguished before the robot left the field. A robot is considered as out of the field when one of its wheels crosses the surrounding black line of the field.

9. Scoring & Declaring the Winning Teams

1. The points are given out based on the number of candles extinguished. (See Appendix.1 Scoring System).
2. There will be a “time bonus points” awarded, when all four candles are extinguished before the 180 second time limit is up. The seconds remaining before the try time was up will be added to the score.
3. The process of extinguishing the lit candle is defined as: Entering into the circle, extinguishing, and leaving the circle. During this time the robot cannot make contact with the candle.
4. When a candle is extinguished outside the circle, only 50% of candle’s value will be taken into account. Robot is counted as inside of the circle when at least one wheel is in contact with the black line or is inside the circle.
5. When the candle is extinguished and falls, only 50% of candle’s value will be taken into account.
6. Previously extinguished candles become obstacles in the playfield, and do not count as a penalty if touched.
7. The qualifying round consists of 3 tries. The score of the 3 tries in the qualifying round will be summed together to make the total score for the qualifying round.
8. In the semi-final round a number of robots per category will compete. The number of robots will be decided by the Organizing Committee, depending on the total number of robots participating in this competition.
9. The semi-final round consists of 3 tries. The score of the 3 tries in the semi-final round will be summed together to make the score for the semi-final round.
10. In the final round (best of the best), the robots with the highest score in the semi-final round per category will compete in the final round.
11. The final round consists of 3 tries. The score of the 3 tries in the final round will be summed together to make the score for the final round.
12. Based on the ranking in the final round the winning teams will be declared.

10. Terms and Conditions of Participation

1. Participation in ROBOTEX CYPRUS assumes and requires acceptance of all terms and conditions for participation by competitors, the coaches and the organizations they represent.
2. In case of any difference in the competition rules between the English and the Greek versions, the English version is considered as correct.
3. The robot must be registered before the competition. The registration process includes technical inspection of the robot, marking the robot with a number sticker.
4. There will be two (2) judges in the competition. An additional coordinator of the judges may be present to oversee the entire process.
5. All questions and issues that may arise during the competitions must be reported to the judges.
6. The final decision about objections will be taken by the judges in cooperation with the organizers.
7. Judges' decisions on any objections are considered final and can't be challenged by participants, the coaches or the organizations they represent.
8. In the case of a deliberate alteration or change of marking of the unique number of robots, the coach and his team will be automatically expelled from the event. As a result, they will not be able to take part in any other challenge they may have enrolled. The coach and his team will leave the venue immediately. The coach also loses the right to take part in the next ROBOTEX CYPRUS event and is automatically excluded from participating in ROBOTEX INTERNATIONAL in case one of his/her teams has won a ROBOTEX CYPRUS competition. The Organizing Committee reserves the right to publicly announce the coach, the team and its members.
9. It is expected that both the coaches and the members of the teams will exhibit a spirit of noble rivalry and will behave with mutual respect, decency and esteem both to themselves and to the organizers, judges and volunteers. The behaviour of all coaches and team members should promote "fair play". Therefore, the Organizing Committee reserves the right to expel anyone from the venue of the event who violates the above principles of good practice.

11. Robot Technical Control

1. An initial technical control of the robot technical control will take place on the day of the competition at an area and on time specified by the organizers.
2. Technical control takes place before each phase of the competition (preliminary, qualifying, final) in which the team may participate.
3. Failure of a team to come in time for a robot's technical check leads to the team being excluded from the event.
4. The leader of the team only is responsible to take the team's robot for technical control.
5. Technical control includes the control of the robot based on the above and the **section "6. The Robot"**. If the robot does not meet the requirements it will not be accepted to compete and will automatically be disqualified from the event.

12. Changes and Cancellation of Rules

1. Any changes and/or cancellations in the rules of the competition are decided by the Cyprus Computer Society in consultation with the Organizing Committee of CYPRUS ROBOTEX CYPRUS. You may address comments and suggestions to the Organizers at **robotex@ccs.org.cy**.

13. Note – Participation in Robotex International

1. The competition Girls Firefighting implemented in ROBOTEX CYPRUS differs from the ROBOTEX INTERNATIONAL implementation on the following points:
   - The categories/levels of the competition in Cyprus are for Primary 4^{th} – 6^{th}, Gymnasium and Lyceum whereas in Estonia the categories/levels are defined based on the age level of the participants. «Class A Up to 13 years, Class B 14+ years».
   - In Cyprus, the height of the candles is the same for all categories/levels. In Estonia, the height of the candles differs based on the age level of the team. Specifically, in Estonia, «Candles in Class A have a height of 100 mm. In Class B the heights vary between 100 mm to 400 mm».
2. The winning teams of ROBOTEX CYPRUS that will participate in ROBOTEX INTERNATIONAL are requested to review the rules of ROBOTEX INTERNATIONAL for the Girls Firefighting competition especially on the above points.

14. Appendix 1 – Scoring System

	Number of candles extinguished				Total Possible Score
	1° Candle (0 Walls)	2° Candle (1 Wall)	3° Candle (2 Walls)	4° Candle (3 Walls)	
Points (100%)	**100**	**200**	**300**	**400**	**1000**
Points (50%)	**50**	**100**	**150**	**200**	
Award of "time bonus points" – See paragraph 9.2 in the regulations. It is specified based on the remaining time after all 4 candles are extinguished.					**X**

Table 1: Scoring System