

REGULATIONS «EDUCATIONAL ROBOTICS - ENGINO® MINI & LEGO WEDO»

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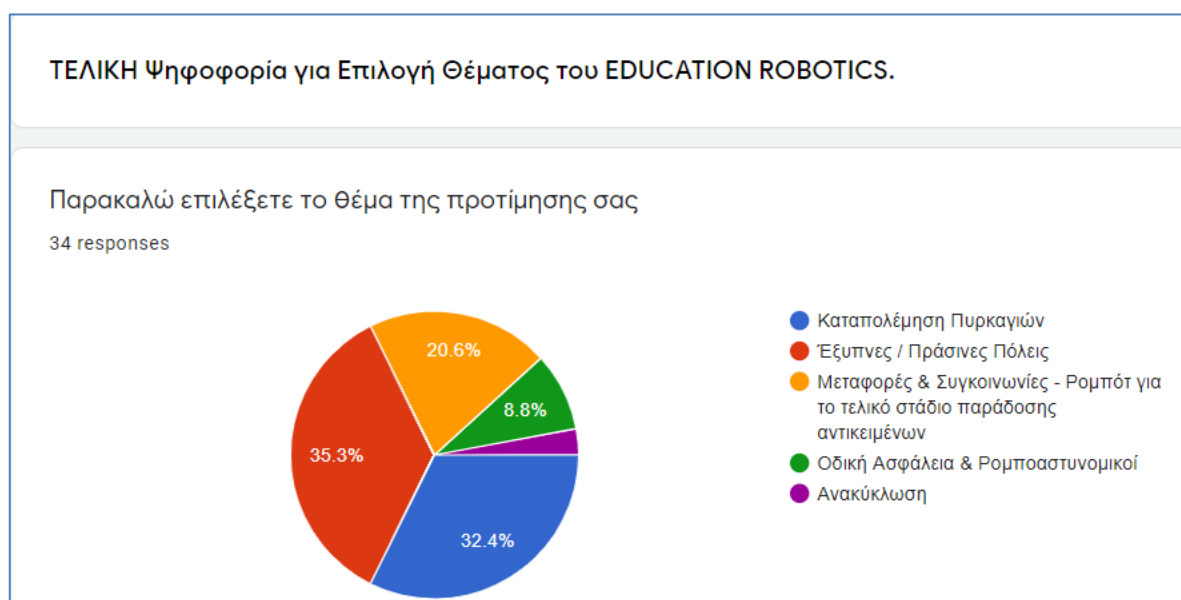
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1. Introduction

The challenge of educational robotics provides an opportunity to young students of primary education to cooperate, to exploit their fantasy and creativity to develop constructions in which robots play an important role.

2. The Theme

1. The theme for this year's competition is "**Green and Smart Cities**".
2. The House of Parliament has recently ratified the decision of the Council of Ministers for the creation of the Deputy Ministry on Research, Innovation and Digital Policy and the first Deputy Minister has already been appointed. The rationale of the decision includes the need for digital transformation of the Cypriot society so that it contributes to the advancement of the quality of life of the citizens. Thus, the theme of this year's competition is considered timely and current and contributes to the achievement of the above goal.
3. The theme was selected after two rounds of voting. In the first round, 13 topics were put to the vote by members of the Organizing and Scientific Committees. In the second round, the 5 topics with the highest number of votes in the first round were put to the vote.
4. The themes included in the final vote and the final results are presented in the figure below.



5. Please note that at the time of this announcement the theme the related competition at ROBOTEX INTERNATIONAL is not known. Most likely the theme at the international event will be different. So, the winning team of ROBOTEX CYPRUS will have to develop another construction/project for participating in ROBOTEX INTERNATIONAL.

3. Definitions

1. There is no commonly acceptable definition of the terms «Green City» and «Smart City». Thus, the references below are made only for informational purposes and are neither limiting nor exhaustive.
2. The term «Green» is a simple term that describes sustainability and environmental friendliness. With this as the basis, the United Nations sets out on “Goal 11 – Sustainable Development” the need to make cities and human settlements inclusive, safe, resilient and sustainable and consider that «Making cities sustainable means creating career and business opportunities, safe and affordable housing, and building resilient societies and economies. It involves investment in public transport, creating green public spaces, and improving urban planning and management in participatory and inclusive ways». (See reference <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html>).
3. According to the European Union, «A smart city is a place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies for the benefit of its inhabitants and business.
A smart city goes beyond the use of information and communication technologies (ICT) for better resource use and less emissions. It means smarter urban transport networks, upgraded water supply and waste disposal facilities and more efficient ways to light and heat buildings. It also means a more interactive and responsive city administration, safer public spaces and meeting the needs of an ageing population». (See the reference https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/city-initiatives/smart-cities_en).
4. On a different but converging approach, the Organization for Economic Cooperation and Development, defines Smart Cities as «initiatives or approaches that effectively leverage digitalisation to boost citizen well-being and deliver more efficient, sustainable and inclusive urban services and environments as part of a collaborative, multi-stakeholder process». (See the reference http://www.oecd.org/cfe/regional-policy/OECD-Roundtable-on-Smart-Cities-and-Inclusive-Growth_Issues-Note.pdf).

4. Competition Objective

1. The objective for the teams is to present a construction directly related to the theme of the competition (see point «**2. The Theme**» above).
2. It is emphasized that construction should take into account, combine and implement/ present clearly both components of the theme, "Green" and "Smart".
3. In the construction, a programmed robot has to play an important role in that it participates actively and interacts with the construction environment.
4. Entities of all types, services, products, solutions, projects, ideas, actions, activities, synergies, proposals, policies, etc. are considered to be the setting environment and are directly related to the living in a green and smart city.

5. Categories

1. The competition is addressed to groups of elementary school pupils.
2. The categories of the competition are "1st – 3rd Grade Primary " and "4th – 6th Grade Primary".

6. The Team - Eligibility for Participation

1. The competition is aimed at groups rather than individuals.
2. Each group can consist of two (2) – six (6) students.
 - In ROBOTEX INTERNATIONAL in Estonia the team may consist of three (3) – five (5) players. So, the winning team at ROBOTEX CYPRUS that will be participating in ROBOTEX INTERNATIONAL may be allowed to register only three (3) – five (5) players. This remains to the discretion of the ROBOTEX INTERNATIONAL Organizers.
3. One student only who belongs in the "1st - 3rd Grade Primary" category can participate in a team of "4th – 6th Grade Primary". The opposite is not applicable.
4. Teams must be accompanied by an adult, preferably their coach or teacher.
5. The team defines one of its members as a 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.

7. Robotics Platforms

1. The competition involves the ENGINO MINI and LEGO WEDO platforms.
2. Any references to "robots", from this point to the end of the document, include and refer to both types of robots, ENGINO MINI and LEGO WEDO.

8. The Programming Language

1. For the development of the program, any programming language supported by the respective platform may be used.

9. The Computer

1. Each project team can use up to 2 computers (or a combination of a computer and a tablet, if possible or in the group's capabilities) to execute the project.

10. The Robot

1. The robot must be programmable.
2. The robot should be constructed with original materials and parts on the corresponding platform.
3. The robot must fit on the track.
4. The robot must perform kinetic actions and automations.
5. There is no limit as to the number and type of sensors that can be used in the construction.

11. The Construction and its Wider Environment

1. The construction should be implemented with original and licenced materials of the respective platform.
2. All parts of the construction including automation or mechanical parts propelled by motors shall be made of authentic materials of the respective platform.
3. The overall height of the structure (including the robot) may be up to 1.5 meters high.
4. If the construction is surrounded by walls, the walls must necessarily be made of original materials of the corresponding platform.
5. Paper (of any size, thickness and colour), polystyrene and plasticine may be used.
6. The use of materials such as wood, plastics, aluminium and fabric, and generally materials not mentioned in point 5 above, is prohibited.

12. The Field

1. The field is defined as “the floor of the structure, the base on which the construction and the robot are placed”.
2. The field is a do-it-yourself (DIY) mat area with dimensions up to 1 meter wide x 1 meter length.
3. The field must be flat.
4. In addition to the original materials and the materials referred in point 11.5 above, thin durable wood may also be used for building the field.

13. The Competition

1. The aim is to present a construction directly related to the subject of the competition (see paragraph «**2. The Theme** »).
2. In the construction, it is important for the robot to play a leading and active role in its environment.
3. The robot must perform at least three (3) mobile/kinetic activities or automations.
 - Mobile/Kinetic activity is the process of moving the robot (or of another part of the structure) from one point to another as a result of its reaction to an external stimulus from the wider construction environment.
 - Automation is the process in which a sensor realizes/understands/captures an external stimulus from the wider construction environment and reacts to that stimulus by updating the robot control program. The robot, in turn, processes the data it receives from the sensor and performs a task. Such a task may, for example, be the movement of the robot, the creation of sound or noise, the appearance of data or calculations or an alert or update or an image on the computer screen etc.
 - It is understood that automation does not involve human intervention of any kind.
4. The robot should remain on the field throughout the activity presentation.
5. If the robot hangs or gets stuck and does not move, it can be helped by children by lifting it or by moving elements on the track.

14. The Assessment Process

1. The evaluation is carried out by groups of judges who visit the participating teams at the exhibition area of their constructions.
2. Depending on the number of teams participating in the competition and in order to minimize the waiting time, there may be two parallel evaluation teams.
3. In order to minimize the waiting time of the teams, the following assessment process will be followed:
 - Only the teams of one of the competing categories will enter the competition area (see point «5. Categories») and they will prepare their constructions at the areas to be indicated by the Organizing Committee.
 - The evaluation teams will perform the assessment of the teams of the specific category.
 - Upon completion of the assessment of all the teams of the category, their results will be announced.
 - Time will then be given to the audience to visit the competition area to have a closer view and admire the constructions of the teams.
 - At the time to be indicated on the programme, the teams of the category will exit the competition area with their constructions.
4. The process described at point 3 above will be then followed for the teams of the other category.

15. Assessment Criteria

1. The maximum number of points to be achieved by a team is one hundred (100).
2. The evaluation criteria are explained below.

15.1 Presentation (Maximum Points: 40)

1. The team will have available three (3) minutes to present the structure and the activities performed by the robot to the judges.
2. The presentation gives forty (40) points and includes the following criteria (10 points per criterion):
 - Presentation evaluation and communication skills
 - The degree of involvement of all team members in the presentation, their collaboration and complementarity during the process,
 - Ability to explain and understand the construction as a whole and its usefulness; the role and mode of operation of the robot and the other components of the construction,
 - Satisfactory response to referee questions from all team members.

15.2 The Robots (Maximum Points: 30)

1. This part of the evaluation gives thirty (30) points and includes the following criteria (10 points per criterion).
 - An explanation of the code used to program the robot,
 - Demonstration and explanation of at least three (3) robot functions or automations performed by the robot,
 - Detailed level of robot design, variety of sensors utilization and optimization of its operation.

15.3 Conception of Idea and Implementation (Maximum Points: 20)

1. This part of the evaluation gives twenty (20) points and includes the following criteria (5 points per criterion):
 - Relevance and interconnection of the construction with the theme of the competition in order to effectively and qualitatively solve a problem,
 - Level of research performed on the theme, applicability of the solution to the real world,
 - Creativity and originality of the team and authenticity of the construction,
 - Proper use of materials and overall quality of the construction.

15.4 Explanatory Video (Maximum Points: 10)

1. Each team must explain its construction and the idea behind it with a video.
2. The maximum duration of the video must be up to three (3) minutes.
3. The video must document collaboration, team and collective work amongst team members implementing the construction and programming the robot.
4. The video should show present the robot's motor activities and the automations.
5. The team must upload its video on the web so that it can be accessed by the Evaluation Committees for review and evaluation purposes prior to the competition date.
6. The team must notify the Organizing Committee about the link that leads to its video by completing the video registration form at the address <http://www.tiny.cc/MyRoboticsVideo>.
7. Notification of the video to the Organizing Committee should be made **at the latest by Saturday 31st October 2020 (no extension will be given)**. Any notifications after the above date will be disregarded and the team will receive zero (0) points for the Explanatory Video.
8. The video must also be available on the day of the competition for demonstration before the judges, if so requested.

16. Example Videos

1. See a [video](#) for the ENGINO MINI platform from a previous event.
2. See a [video](#) for the LEGO WeDO platform from a previous event.
3. On the Tube channel of Robotex Cyprus you may see more videos.

17. Responsibility

1. The organizers of ROBOTEX CYPRUS do not take responsibility for any incidents and/or accidents that may be caused by the participants or their robots or any of their equipment.
2. The organizers of ROBOTEX CYPRUS do not accept any responsibility for any damage to the robots or the construction or the theft of them, should it occur.

18. 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 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. All questions and issues that may arise during the competitions must be reported to the judges.
5. The final decision about objections is taken by the judges in cooperation with the organizers.
6. Judges' decisions on any objections are considered final and can't be challenged by participants, the coaches or the organizations they represent.
7. 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.
8. 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.

19. Technical Control

1. For purposes of clarity of this section, the clauses «7. The Robotics Platforms», «10. The Robot», «11. The Construction and its Wider Environment» and «12. The Field» will be collectively referred to as the “Team’s Entry”.
2. Technical control includes the inspection of the Team’s Entry.
3. If any of the items of the Team’s Entry above do not comply fully with the requirements, the team will not be accepted to compete and will automatically be disqualified from the event.
4. Technical control of the Team’s Entry will take place as part of the assessment process of the team.
5. It is expected that the team will arrive early as specified on the programme of the event. Failure to do so, the team will not be accepted to participate in the competition.
6. Only the members of the team must be involved in the process of transport of the team’s entry at the competition area.
7. Only the members of the team must be involved in the preparation of the team’s entry and its placement at the exhibition area.

20. 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 the ROBOTEX. You may address comments and suggestions to the Organizers at **robotex@ccs.org.cy**.

21. Note – Team Participation in ROBOTEX INTERNATIONAL

It is noted that the corresponding competition in ROBOTEX INTERNATIONAL in Estonia is INSPLAY LEGO WEDO (for LEGO WEDO) and INSPLAY ROBO LEAGUE for ENGINO MINI.

The difference between the ROBOTEX CYPRUS competition and the two INSPLAY competitions is the fact that INSPLAY is primarily a construction/project exhibition and does not include a competition element.

Therefore, the ROBOTEX CYPRUS winning teams who will be participating in ROBOTEX INTERNATIONAL must be aware that in ROBOTEX INTERNATIONAL there is no declaration of winners and there are no prizes awarded. The above were valid during last year’s ROBOTEX INTERNATIONAL event. In any case, it is the responsibility of the team members to regularly visit the website of the international event at www.robotex.international for updates.