

REGULATIONS «DRONES DEMONSTRATIONS»

Author: Organizing Committee ROBOTEX CYPRUS

Special thanks are extended to the colleague Marios Pieri for its contribution to the verification of the technical details of the document.

Table of Contents

1. Introduction	3
2. Aim	3
3. Objective.....	3
4. The Team – Eligibility for Participation	3
5. Categories and Levels	54
6. The Drones.....	54
7. The Demonstration Area	54
8. Objects in the Demonstration Area	65
9. The Demonstrations	76
10. Certificates.....	76
11. Terms and Conditions of Participation	87
12. Drone Technical Control	87
13. Changes and Cancellation of Rules.....	87
14. Note – Participation in Robotex International	87

1. Introduction

For 2020, the Organizing Committee of Robotex Cyprus decided to enrich the event with demonstrations of educational unmanned aerial vehicles (in the rest of the document called DRONES) to be executed by teams working amateur or professionally with the specific subject.

2. Aim

The aim of this initiative is to raise awareness and further encourage the involvement of pupils, students and adults in STEM specialties in using drones.

3. Objective

The purpose of the initiative is to provide individuals and groups with some level training or expertise in the field of drones to demonstrate their abilities and skills to operate a drone in an enclosed controlled environment.

It is emphasized that this year's initiative is not a competition but a process of exploring the field of drones in order to upgrade interest in the subject in the broader context of STEM.

Depending on the response and the interest to be expressed, the Cyprus Computer Society will decide the organization of a separate event for drones in 2021. Within the framework of this potential, the CCS will organize informational seminars and training workshops in which teachers, trainers and other interested parties in the field of drones will participate. The seminars and workshops will be implemented during the summer 2020 and/or at the beginning of September 2020 so that adequate time for preparation is given.

4. The Team – Eligibility for Participation

1. This activity accepts participation of teams and not individuals.
2. The team consists of two (2) – five (5) persons.
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»
 - A player of category «Lyceum» is allowed to participate in a team of category «University».

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»; a player in the «University» category is not allowed to participate in the category «Lyceum» or «Gymnasium» etc.
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 and for the technical control process.
6. All members of the team may, in turn, operate the drone.

5. Categories and Levels

1. Αν και η δραστηριότητα αυτή δεν αποτελεί διαγωνισμό (και συνεπώς δεν θα υπάρχει βαθμολογία, κατάταξη και ανακήρυξη νικητών), ο προπονητής θα πρέπει να κάνει κανονικά την εγγραφή των παικτών και των ομάδων του όπως αυτό γίνεται με τους κανονικούς διαγωνισμούς.

6. The Drones

1. The drones must be of type FPV (First Person View).
2. Each drone must carry an integrated video camera and be operated through a remote control.
3. It is recommended that the operator of the drone wears safety glasses, FPV Goggles.
4. The maximum dimension of the drone is 14cm diagonally (from motor to motor).
5. The dimensions of the propellers must be 80mm maximum.
6. The drone weight must be up to 150 grammars and carry 1 or 2 batteries.
7. The battery of the drone must be of type LiPo - Lithium Polymer from 1s to 2s.
8. There is no limitation as to the type of the type/brand of the drone provided that it covers the above specifications.
9. Teams that own drones which do not cover the above technical characteristics (i.e. have a smaller or bigger size or weight etc.) and are interested to participate in the demonstration are encouraged to contact with the Organizing Committee at robotex@ccs.org.cy providing the technical characteristics of the drone. The Organizing Committee will decide whether to allow the participation of the drone.

7. The Demonstration Area

1. It is provisionally specified that the demonstrations will take place in a closed area at the level zero of the Athletic Centre of the University of Cyprus and will be projected on giant screen for viewing by the audience located within the main area of the Athletic Centre.
2. In case that it becomes possible, the demonstrations will take place at the main area of the Athletic Centre just like the rest of the programme of Robotex Cyprus.
3. Based on point 9 of paragraph «6. Drones», and depending on the interest to be expressed, the Organizing Committee will organize demonstrations outdoors exploiting the athletic areas of the University located exactly opposite of the Athletic Centre. It is understood that, in such a case, bigger objects will be placed in the demonstration area. The Organizing Committee will also issue an announcement for this purpose.

8. Objects in the Demonstration Area

1. Within the demonstration area a variety of objects will be placed through which the drones are expected to pass through.
2. The objects will be of different shapes i.e. rectangular, circular, triangular etc.
3. The objects may be of different dimensions and LEDs may be attached on them.
4. Different types of objects to be placed on the demonstration area are indicatively presented on the images below.
5. For more information on the objects you may refer at the web address <https://www.dronejunkie.co.uk/micro-race-gates>.



Figure 1: Objects to be placed on the demonstrations area



Figure 2: Objects on the floor and hanging

9. The Demonstrations

1. Each team will be given 5 minutes for demonstrations.
2. The route to be followed by the drone will be determined before the demonstrations begin.
3. The teams will also be given the opportunity to run a 3-minute free ride.
4. Should the drone fall to the ground, its operator or a person appointed by the Organizing Committee will return it to the demonstration process. The time lost will be given to the operator.

10. Certificates

1. Certificates of participation will be given to all members of the teams and their organizations.

11. 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. The drone must be registered before the activity. The registration process includes technical inspection of the drone, marking the drone with a unique number sticker.
3. The demonstrations will be supervised by two coordinators to be appointed by the Organizing Committee.
4. All questions and issues that may arise during the demonstrations must be reported to the coordinators.
5. 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". Thus, the Organizing Committee reserves the right to expel anyone from the event venue who violates the above principles of good practice.

12. Drone Technical Control

1. An initial technical control of the drone will take place on the day of the event at an area and on time specified by the organizers.
2. Technical control includes the inspection of the drone based on the section "**6. The Drones**".
3. Failure of a team to come in time for the drone technical control leads to the team being excluded from the event.
4. The leader of the team only is responsible to take the team's drone for technical control.

13. Changes and Cancellation of Rules

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

14. Note – Participation in Robotex International

1. The "Drones Demonstrations" activity does not create any commitment by the Cyprus Computer Society to send teams to the ROBOTEX INTERNATIONAL event.