# *ROBOTICS*

(This competition is for citizens of Republic of Azerbaijan)

REV.1

## 1.OBJECTIVE AND SCOPE OF THE COMPETITION

The competition is aimed at designing robots that can be useful to a person in everyday life, in space, or can do part of his work in production, or simplify any daily routine, or even become an amusement. Robots include any automatic devices designed to carry out various types of mechanical or pneumatic operations, as well as based on the kinetic properties of the material, which act according to preprogrammed tasks or managed by artificial intelligence, guided by various onboard sensors.

## 2.SCOPE

Robotics offers great opportunities for teamwork and collaboration. This allows students to interact, think, and brainstorm on how to solve the problem, introduces students to possible career paths they may have never considered. Working with robots enhances creative skills in CDIO and encourages the development of basic communication, interpersonal skills and teamwork, project work in engineering. The competition aims to develop innovations in robotics and improve the method of teaching them to perform specific tasks, simplify the design procedure for robots and robotics, teach robots and robotics to perceive the environment and perform programmed tasks or make independent decisions based on artificial intelligence. The competition should cover the implementation of ideas that allow for the wider use of robots and robotics in a wide range of areas of human life, as shown below:

- Industrial robotics (production)
- Household robots (cleaning, coocking, ecurity, etc.)
- All kinds of humanoid robots
- All kinds of agile mobile robots
- Space robotics (Mars and Moon spacecraft)
- Collaborative robots
- Vehicle robots
- Mechatronic robots
- Robotic arm
- Animatronic hand
- Voice controlled robots Gesture based robotics

## 3.COMPETITION PARTICIPATION CONDITIONS

The competition is open to:
Category A - high school students
Category B – undergraduates/graduates, Azerbaijan
only Category C - individual participants and their
teams

- High school level teams must hire a counselor. The document stating that the person who will serve as the Consultant will fulfill the consultancy duties must be uploaded to the system together with the Pre-Evaluation Report with wet signature.
- The consultant undertakes to support the team until the last stage and to be with the team at the last stage. In the projects that are at the last stage, it is mandatory that the primary, middle and high school level teams are on the field with their consultants.
- High school level teams will apply through their advisors.
- Participation in the competition can be made individually or as a team.
- Cheating at any phase of the competition is prohibited. Project proposals must be originated from participants. Projects that are found to be similar or imitated will be excluded from the competition. If a participant previously participated in another competition with a similar project, all details of the project in which he/she/they participated (date, place, organizer, result) must be provided to organizers.
- A separate application form must be filled in for each project.
- Teams should be formed with a maximum of 6 members for all categories and education levels. (This number does not include the consultant.) The consultant should not be added as a team member. Each team can have an advisor.
- Transportation and accommodation support for the finalist teams is limited. The number of people to be supported will be notified to the teams later by the T3 Foundation and Teknofest Azerbaijan.
- T3 foundation and Teknofest Azerbaijan has the authority to limit the number of members to be in the festival area. In case of limitation, information will be given by the committee.
- Only one category or one competition can be applied with the same project. Applications of teams or persons applying to different categories or different contests organized under T3 Foundation and Teknofest Azerbaijan with the same project will be deemed invalid.
- Members of the same team can apply to competitions organized under T3 Foundation and Teknofest Azerbaijan with different projects.
- Teams consisting of high school (A) students will compete among themselves, and teams consisting of university and above students and graduates (B) will compete among themselves, teams consisting individuals (C) will compete among themselves .
  The contestant will be able to participate in the contest by reading and

approving all the explanations about the contest and the participation conditions before applying.

Applicants are deemed to have accepted all of the above conditions.

## 3.1. Application Principles

Applications will be received on the official website of the Aviation, Space and Technology Festival TEKNOFEST Technology Competitions (www.teknofest.az).
For application, the application form must be filled until 28.02.2022.

## 3.2. For high school students (Category A):

In the application form;
-      Participant name, surname, high school name, department name and contact information (e-mail address, phone number), information of other group members (studentnames, department name and contact information), project name and category, and the team name should be added.
- Information about the consultant will be taken at the time of application.

## 3.3. For Undergraduates/ Graduates (Category B):

In the application form:
3.3.1. Participant name, surname, university, faculty, department name and contact information (e-mail address, phone number), the team name will be added along with theinformation of the other group members (student names, university, faculty, department name and contact information), project name and category and the team name should be added
-   Information about the consultant will be taken at the time of application.

## 4.TIMELINE, SCORING AND EVALUATION

### Table: 1

| DATE | DESCRIPTION |
|---|---|
| 28.02.2022 | Competition Application Deadline |
| 09.03.2022 | Preliminary project report and Request for procurement |

| | |
|---|---|
| 12.03.2022 | Announcement of PPR Teams |
| 15.05.2022 | Project Detailed Video Report Deadline |
| 22.05.2022 | Finals Disclosure of Remaining Teams |
| 26-29 May | TEKNOFEST AZERBAIJAN 2022 |

Evaluation; The Project Pre-Evaluation Report and Project Introduction Video will be made in three different stages as Project Detail Report and competition scoring. Teams that do not submit Project Pre-Evaluation Report, promotional video and Project Detail Report files will not be eligible to participate in the competition.

## 4.1.Project Pre-evaluation Report

Teams are obliged to submit their Project Pre-Evaluation Reports on the date specified in the competition calendar. Detailed information regarding the submission of the Project Pre-Evaluation Reports will be shared with the teams that have completed their application after the competition application deadline. A pre-selection will be made according to the results of the Project Pre-Evaluation Reports. You can access the Pre- Evaluation report template on the website. Teams that move to the second stage as a result of the pre-evaluation will be announced on the date specified in the competition calendar.Issues to be considered in the Project Pre-Evaluation Report:

## 4.2. Preliminary Elimination Criteria

In accordance with the application principles, projects submitted to us on the Site will be pre-screened by considering the following criteria.

**Innovative-Original:** Projects will be checked whether there is any similarity with other projects already implemented.

- Are there similar products or projects?
- Is originality one of the main points in the project?

**Producing a Solution to a Problem / Needs:** We will look at what problem in education, how and which solution the project idea will produce in society and

whether the project idea supports this solution.

- Which problem does my project idea produce solution in education?
- Can the project be applicable and implemented?
- For which requirement was my project idea created?

**Target Group of the Project Idea:** It should be stated who or which target group the project will be used for.

## 4.2.1. Project Introduction Video

Teams are obliged to submit their Project Pre-Evaluation Reports and Project Introduction videos on the date specified in the Competition Calendar. In the Project Introduction video, the team; the project idea, the problem / problems that make the project necessary, the solution proposal and method for the problem. Video can be supported with visual tools, equipment and materials. Project introduction video should be uploaded to the system as a link. It can be shared as a You Tube, Vimeo or Google Drive link.

**The resolution of the video should be at least 720p, and the total duration should be at least minutes and maximum 2 minutes. The video can be taken on a mobile phone.**

## 4.3. Project Details Report

Teams that have passed to the Project Detail Report (PDR) stage are obliged to submit the Project Detail Reports on the date specified in the Competition Calendar. Project Detail Report; should be a report detailing the Project Development processes including Analysis, Design, Development, Testing and Implementation (integration and transition to live activities), as well as detailing the Project Budget, Project Plan (project calendar) and Project Scope. The templates of the Project Detail Report will be announced on the Teknofest Azerbaijan website after the application deadline. The teams which are entitled to receive financial support according to the results of the PDR will be announced on the date specified in the Competition Calendar.

## 4.3.1. Project Detail Report Criteria

**Innovative-Original:** Projects will be checked whether there is any similarity with other projects already implemented.

- Are there similar products or projects?
- Does it offer a new technology, design or service?
- What distinguishes your project from similar products on the market?

**Producing Solutions to a Problem / Need:** Projects will be checked which problem in the society the project idea will produce and what kind of solution it will support and whether the proposed project idea supports this solution.

- Which problem of education does my project idea solve?
- Why are the current solutions inadequate?
- Does the project produce or contribute a solution to a local or regional problem?

**Method:** We will look at the methods you use when creating a solution that suits your project.

- Which teaching approaches, methods and techniques do you use in your project?
- What kind of designing models do you use in your project?

**Technique:** We will look at the technics you use when creating a solution that suits your project.

- On which scientific and / or technical applications do you propose a solution? What are their basic principles?
- Is there any visual (2D) and / or prototype of your project?

**Implement ability / Applicability:** The possibility of implementation of the project, as much as the national resources will be examined.
- Can your project be used in schools, universities or adult education?
- Can your project be easily integrated with existing products?
- Can the proposed project be transformed into a technological commercial product?

**Estimated Cost**: It will be checked if the estimated cost of the project and whether the least cost is applicable. A time schedule including the design, production and testing processes of the product and budget planning for the production and a list of materials to be used will be prepared.

- How can the project be developed at the lowest costs?
- Have you been informed about which monetary expenditures will be made and in which period according to the project plan?

  Is a cost calculation made for the project? Has a cost comparison been made with similar projects?

**Target Group of Project Idea:** Who will use the project and who will address this project will be checked if it is specified here.

- Who or who is the target audience of the product or process?
- If there is a problem about the product, is the definition of the people who experienced the problem made?

**Risks:** It will be checked whether there are any elements (risks) that will adversely affect the project.

- It will be checked whether the factors (risks) that will adversely affect the project have been identified.

- Are any problems identified during the implementation of the project identified? Apart from the above items, the Competition Advisory Board can add a different criterion if it deems appropriate. The criteria that can be added will be specified in the report template.

## 4.4. Competition Scoring

The scoring of the competition consists of two parts. The first part consists of report scoring, the second part is prototyping and visual presentation scoring.

Report scoring types and percentages are given in the table below. Report scores will constitute 30% of the Total Score.

**Table 2: Distribution of the Report**

| Score Type | Percentage of Score |
|---|---|
| Project Pre-Evaluation Form | % 10 |
| Project Detail Report | % 20 |
| Prototype and Presentation Scoring | % 70 |

**The Score of Prototype and Presentation**

Each finalist project will be evaluated by their respective jury formed by professionals of relating category. The applicants need to prepare a

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demonstration of the prototype for the jury.

The prototype is the tangible product or the process of a project. It would be the basic form of the project if it is materialized. This can include screenshots or screen pictures that show functional abilities of a software prototype as well as functional hardware prototypes made of cartoons, legos etc.

The detailed information about the requirements of the competition environment, the exhibition of the prototypes and visual presentations will be shared with the finalists after the finalist teams are determined.

In the final stage, it is obligatory for the teams to prepare posters for visual presentations, and the information about the poster size and content will be made by the T3 Foundation and Teknofest Azerbaijan in September.

According to the final evaluations, the final ranking of the finalists will be announced on the website https://www.teknofest.az after the final of the TEKNOFEST AZERBAIJAN Competition.

## 5. AWARDS

In qualifying result in three stages in the competition through separate evaluation in its category, the winning team will be awarded in prize money at the final evaluation. The prizes listed in the table below show the total amount to be awarded to the teams that have been awarded prizes, no individual prizes will be awarded. The first, second and third place prizes will be divided into equal amounts according to the total number of Team Members and deposited into the bank account of each person. Payment will be made to the advisor of the winning team within the scope of the competition. A payment up to 700 AZN will be made to the consultants of our ranked teams.

**Table 3: AWARDS**

| Category | A-Category | B-Category | Consultant |
|---|---|---|---|
| 1<sup>st</sup> Place | 4 000 AZN | 6 000 AZN | 700 AZN |
| 2<sup>nd</sup> Place | 2 000 AZN | 4 000 AZN | 500 AZN |
| 3<sup>rd</sup> Place | 1 000 AZN | 2 000 AZN | 300 AZN |

### 5.1. Minimum Success Criteria for Award Ranking:

In order to qualify for the prize ranking in the competition, teams must avoid the preliminary elimination. Only those who can qualify for the prize ranking will be eligible to receive the prizes stated in Table 3.

### 6.GENERAL RULES

- Teams have the right to object to the concerned judge through their team leaders. Objections can be made verbally, provided that they are submitted in writing at a later time. Verbal objections must be put in writing within 24 hours. In any case, non-written objections will not be taken into consideration. Objections will be finalized within 72 hours after having examined by the judge panel.
- After the evaluation results are announced, team leaders are required to submit their objections and justifications in writing. Objections must be received from contest@technofest.az
- The appeal process must be made within one week - 7 days - after the results of the competition are announced. Otherwise, the objections are not taken into consideration.
- The role of the advisor; to help students to plan their own education, to guide them in academic, social and cultural issues, to help prepare the appropriate environment for the development of the student's personality as a whole with its mental, social and emotional aspects, etc. tasks and services. The role of the advisor in the team is to provide the academic support that will be needed in the project, to guide the team members to find solutions to their problems.
- The work of ideas that is the subject of the competition is; may produce with member of the team and this idea belongs to the team and the consultant will not be accepted as the owner of the work.
- Our teams that have benefited from the reports of the past years on our website have to include cited phrase after the sentence cited. CITED FORMAT: "Cited Phrase/s (Year, Competition Name, Category, Team Name) EXAMPLE QUOTE: "Failure to determine the location of the earthquake victim in the wreckage is the most important problem that slows down the debris removal and search for the earthquake victim." (2020, TechnologyFor Humanity, Disaster Management, X Team)
- Each contestant is responsible for taking the necessary precautions and showing the expected attention to his/her peers and the environment.

- T3 Foundation and the Teknofest Azerbaijan reserve the right to make any amendments to the specifications in order for the contest to take place in accordance with the specified impartial criteria so that any violations may result in judicial outcomes, to better meet all sorts of requirements by the contestants, to provide necessary safety precautions and to maintain the functionality of the contest specifications.
- Having made the necessary evaluations following the application deadline, T3 Foundation and Teknofest Azerbaijan reserves the right to cancel the contest given that sufficient number of applications is not reached with the required technical knowledge and skills.

- T3 Foundation and Teknofest Azerbaijan Safety and Security Terms and Conditions will be communicated to all contestants, delegations and concerned parties. All competing teams are responsible for observing the safety terms and conditions specific to their respective categories specified in Teknofest Azerbaijan Safety and Security Terms and Conditions. In this regard, with the exception of security precautions contained in the aforementioned security instructions, it is the contestants' responsibility to take additional precautions arising from the systems employed.
- T3 Foundation and Teknofest Azerbaijan has the right to exclude any and all teams from the contest who do not fulfill the terms and conditions of Teknofest Azerbaijan Safety and Security Terms and Conditions to provide a safe environment for holding the contest. T3 Foundation and organisation officials cannot be held responsible for damages arising from the violation of terms and conditions by the contestants, delegations and concerned parties.
- Regarding the competition, the competitor hereby accepts and consents to any kind of written or visual promotion, publication, social media and internet broadcasting to be made by the T3 Foundation and / or Teknofest Azerbaijan before or after the competition. In addition, the competitor agrees and submits that any and all intellectual property generated as pertains to the competition, including but not exclusive to designs, code, and manufactured products, belongs exclusively to the T3 Foundation and / or Teknofest Azerbaijan and that the competitor does not have any rights to or demands on these artifacts. T3 reserves the right to disclose all intellectual property thereby for public consumption in a manner it deems fitting.
- In the event that a competitor infringes upon the intellectual property rights of any product, and T3 Foundation and/or Teknofest Azerbaijan incur damages, the responsibility for such damages will be borne entirely by the relevant participant(s).

- All teams who qualify to compete in the contest will be given a Participation Certificate.


## 7.ETHICAL RULES

- The legal process will be urgently initiating for the people who performs a situation, action, speech, etc. contrary to social morality in the festival area or during the competition process (report stages, evaluation process, etc.) And team will be banned from all kinds of events and activities of T3 Foundation to participate at least 2 years.
- The issues to be considered in the language used in all communication with T3 Foundation and Teknofest Azerbaijan are as follows:
- Rude and impolite words and behaviors must be avoided,
- Insults, threats and bad words must be avoided,
- Direct targeting and insulting with social media tools such as E-mail, facebook, skype, messenger, whatsapp, twitter etc. must be avoided,
  It is necessary to pay attention to the spelling rules and style in your petitions and objections.
- Situations, verbs, words etc. that will affect the functioning and motivation of other teams in the festival area must not be exhibited.
- Social peace in the dormitory and its surroundings where accommodation services are provided should be taken into consideration. Otherwise, the initiation of the legal process against the person will be carried out by the relevant institutions.
- During the project and product development process, it is the responsibility of the team to back up / store the necessary equipment and materials in advance, taking into account all kinds of negativity, and to change parts in case of a possible negativity. Product supply from another team must not be provided.
- Care should be taken to act in accordance with the service requirements in neutrality, without discrimination of language, religion, philosophical belief, political opinion, race, age and gender, and without giving rise to behaviors and practices that prevent equal opportunity in the festival area and in all kinds of services offered by T3 Foundation and Teknofest Azerbaijan.
- It is necessary to pay attention not to use and use T3 Foundation, Teknofest Azerbaijan and other company, institution, organization goods and resources outside of their purposes and service requirements, and not to waste these goods and resources.
- It is necessary to support the activities carried out in order to facilitate the

functioning of the festival, to meet its needs in the most effective, fast and efficient way, to increase the quality of service and to increase festival satisfaction.

- Be careful about all kinds of benefits and financial or other liabilities and similar personal interests provided to themselves, their relatives, friends or the persons or organizations with whom they are in contact and that affect or seem to affect the competitors in the festival area to perform their duties impartially and objectively, to act and take the necessary precautions to avoid conflicts of interest.

- When using T3 Foundation and Teknofest Azerbaijan buildings and vehicles and other public goods and resources, it is necessary to avoid waste, to act effectively, efficiently and economically while using working time, public goods, resources, labor and facilities.

- T3 Foundation and Teknofest Azerbaijan team members must be accountable for their responsibilities and obligations during their execution, and are open and ready for corporate evaluation and supervision, advisors should take the necessary measures to prevent corruption with the actions or actions that are not in line with the goals and policies of their institutions, and train their members on ethical principles of behavior, It should be monitored whether these principles are followed or not and provide guidance on ethical behavior.

- While fulfilling their duties, team members should not make any commitments, promises or attempts binding the institutions they work for, and should not make deceptive and untrue statements.

## 8.STATEMENT OF LIABILITY

Turkish Technology Team Foundation and Teknofest Azerbaijan are in no way liable for any injury or damage caused by any entry, any entrant, or by the disqualification of an entry. Turkish Technology Team Foundation and Teknofest Azerbaijan at large are not responsible for ensuring teams operate their systems within the law of the Turkish Republic. The Turkish Technology Team Foundation and Teknofest Azerbaijan, and organisation officials cannot be held responsible for the damages inflicted upon third parties by the contestants.

**Turkish Technology Team Foundation and Ministry of Digital Development and Transport of the Republic of Azerbaijan has the right**

**to make any updates to this terms and conditions.**