**REPUBLIC OF TURKIYE**
**MINISTRY OF NATIONAL EDUCATION**
**The General Directorate**
**of Technical and Vocational Education**

# 15th INTERNATIONAL
# MoNE ROBOT CONTEST

# FREE PROJECTS
# CATEGORY RULES

INTERNATIONAL
MoNE
ROBOT
CONTEST

## OBJECTIVE

It is organized for robotic projects in International Robot Competitions to provide a platform for high school and university students to realize and present their dreams, scientific ideas, abilities.

## SUBJECT

It will be organized in following topics;

- ✓ EDUCATION TECHNOLOGIES
- ✓ AGRICULTURAL TECHNOLOGIES
- ✓ WEARABLE TECHNOLOGIES
- ✓ BARRIER-FREE LIFE TECHNOLOGIES

### 1. EDUCATION TECHNOLOGIES

They are expected to develop products that will facilitate learning with technology integration in education or training, make it permanent, and allow the subject to be handled in a multidimensional way by establishing a connection between the field to which the subject is directly related and other branches of science.



These products can be prototypes, educational software, educational software, educational games, educational simulations, innovative technologies within the scope of educational technologies.

a. Development of digital applications that can provide ease of learning in Turkish and ease of learning in different languages,

b. Development of digital applications such as interactive content that students can interactively practice within a determined education programme,

c. Educational software developed within a scenario and with easy and effective methods on subjects that are difficult to understand,

d. Applications developed to support and reinforce the knowledge and learning acquired at school,

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## 2. AGRICULTURAL TECHNOLOGIES

Precision agriculture (PA), which emerged in the mid-1980s, is a method for applying knowledge-based management, the right process in the right place at the right time, combined with increased awareness of variability in soil and crop conditions and emerging technologies such as global satellite navigation systems (GNSS), geographic information systems (GIS) and microcomputers acting as the main driver.



Additional applications in precision agriculture have been developed, such as automatic steering of agricultural vehicles, autonomous machines and processes, crop traceability, on-farm research and software for the overall management of agricultural production systems. In precision agriculture, inputs such as optimum planting density, pesticide, fertiliser and water requirements are collected with GPS, remote sensing, real-time sensors, etc. and variability is determined. Depending on the variability with field-specific applications, effective input use, reduced production costs and environmental impacts, and increased product quality and productivity.

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Robots are machines that are intended to replace humans in the execution of tasks involving physical activities or decision making. Sensors are part of the robot's electronic subsystem, which includes various electronic and other low-power components. Robot vision systems consist of several cameras and a processing unit.



It aims to create solutions for problems in agriculture. In this direction, projects will be evaluated and put into practice. The scope of this competition includes informatics, mechanical, electricalelectronic, software-based projects that propose technological solutions related to agriculture and livestock.

a. Smart Agricultural Technologies

b. Irrigation/Fertilisation Monitoring and Automation Systems

c. Greenhouse Automation Systems

d. Use of Drone Technologies in Agriculture

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e. Livestock Technologies

f. Early Warning Systems - Agricultural Meteorological Station Technologies

## 3. WEARABLE TECHNOLOGIES

Wearable technology is smart electronic devices capable of sensing physical-chemical magnitudes and changes worn as part of an accessory or clothing. The most important feature of this technology is that it has communication capability and can provide data communication between the device and the network. Such systems; It has the characteristics of detecting physical or chemical quantities such as heat, light, humidity, sound, pressure, force, electricity, distance, acceleration and pH and converting them into electrical signals. Movement tracking equipment used today, candy embedded in clothing, heart rate and heart rhythm tracking systems, smart watches and smart glasses can be given as examples of this type of technology.



Projects can be presented for the design and use of networked devices that can be customized according to the wishes and needs of the users, integrated into the body, clothing or any material that people carry, that sense physical or chemical sizes.

## 4. BARRIER-FREE LIFE TECHNOLOGIES

To develop the social responsibility awareness of individuals, their technological ideas; aims to facilitate the lives of individuals with special needs by enabling them to implement them through original, local and national resources.

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Ideas and studies that will minimize the difficulties faced by individuals with special needs in their academic, social and professional lives are expected. At the target of innovative and technological developments and applicable projects that are expected to be realized in order to eliminate the problems that affect individuals with special needs in the determined areas; awareness, usefulness and convenience.

### a) Accessible Education For Disable People

Projects and ideas that provide solutions that facilitate the educational life of individuals with special needs in various developmental areas such as physical, mental, visual, auditory, autism.



### b) Social Life Without Barriers

These are the projects that will develop and implement the technological infrastructure in order to increase the quality of life by facilitating the active participation of individuals in various parts of the society with different developmental characteristics in social life.

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### c) Accessible Health For Disable People

It will improve the health conditions of individuals with special needs in various fields such as physical, mental, vision, hearing, autism and developmental and will minimize the difficulties associated with these conditions; is to produce solutions for current problems, diseases, diagnosis, treatment and follow-up processes.

### RULES

1. Only students from universities, high schools and secondary schools can participate to this competition.

2. Teams which will particate to competition are determined in frame of general rules.

3. Projects that have participated or applied to any other project competition with the same or different names and / or with the same or similar content (subject) before the deadline are not allowed to participate in this competition. Before the deadline, such projects that are determined their participation or application to another competition with the same project will be eliminated from the competition at any stage.

4. All competitors have responsibility to follow announcements published in offical web site :http://robot.meb.gov.tr

5. Students participating in the TÜBİTAK Secondary Education Students Research Projects Competition cannot participate in this competition with the same project.

6. Preparing and uploading all documents are under responsible of competitors

7. All teams must upload all project documents (pdf format) signed and stamped to robot.meb.gov.tr  **before 14 February 2023** for pre-evoluation.

8. Pre-evoluation result which listed the projects that will be invited to final competition and other conditions will be published on http://robot.meb.gov.tr on **17 February 2023**

9. Teams which are invited to final competition have to prepair posters, brochure, text and if necessary 3D design models of their projects.

10. The projects will be exhibited in the exhibition hall. It is the responsibility of the competitors to transport the project to the presentation hall

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11. Team members have to present their project presentations and video/slide show in maximum 10min to jury board.

12. Computer and projection device necessary for presentation will be provided by the organisation. All other technical equipments must be brought by competitors.

13. By applying, Competitors are deemed to have accepted that

- used their own ideas, knowledge and skills in the selection of the subject of the project, in their approach to the problem, in their thinking and implementation,

- received limited help from the counsellor teacher and related persons in the problems encountered,

- the project is entirely their own,

- accepted that they have not participated in another project competition with the same project before the deadline of this competition

- prepared it in accordance with the rules specified in the application guide.

## PRE-EVOLUATION

1. Projects which are prepared in accordance with project guide will be pre-evaluated by related jury experts through their "project reports". Additional time will be given to projects that have some lacks after this evaluation.

2. It is expected that projects were insipired from original ideas of students. Students can get consultancy but their projects should be formed and finished with their own knowledges and competences. If it is determined that projects were not meet this expectation, competitors and advisor will be disqualified.

3. Jury members will consist of 5-7 lecturers selected by Tübitak

4. The projects invited to the final will exhibit their projects to the participants at the tables / sections allocated to them in the exhibition area. The projects will be audited by two independent auditors without prior notice and without stating that they are auditing.

The auditors will score the projects according to followings;

- Presentation of their projects to auditors and their performance (10 P)

- Posters and brochures explaining the project (10 P)

5. Projects/Robots will be evaluated by expert jury members of each group according to following criterions (total score 80);

- Innovation (15p)

- Design (Performance, cost, simplicity) (15p)

- Applicability (15p)

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- Actuality(15p)

- Presentation performance  (20p)

| Assesment Criterions | Assesment at Stand | Jury Board Assesment |
|---|---|---|
| Presentation of their projects to auditors and their performance | 10 | |
| Posters and brochures | 10 | |
| Innovation | | 15 |
| Applicability | | 15 |
| Design (Performance, cost, simplicity) | | 15 |
| Actuality | | 15 |
| Presentation performance | | 20 |
| *Subtotal* | *20* | *80* |
| *Total* | *100* | |

6. Considering the scoring table above, the scores given by the independent auditors and the scores given by the jury committee will be added and it will be announced as the evaluation score. The first, second and third winners of the competition will be determined.

7. In case of equality , the jury may recall the competitors to make  presentation again.

**CALENDAR**

| Applications and upload Project reports | 05 December 2022 – 14 February 2023 |
|---|---|
| Final correction deadline for accepted projects | 17 February 2023 |
| Announcement of Finalist Projects | 20 February 2023 |

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**T.C.**
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**15TH INTERNATIONAL MEB ROBOT COMPETITION**
**FREE PROJECT CATEGORY**
**PROJECT REPORT**

**http://robot.meb.gov.tr**

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## 15.INTERNATIONAL MEB ROBOT COMPETITION FREE PROJECT CATEGORY

### PROJECT REPORT

**ROBOT NAME:**

**THEMATIC AREA:**

**UNIVERSITY / HIGH SCHOOL NAME:**

**STUDENT NAME SURNAME:**

**ADVISOR NAME AND SURNAME:**

### Commitment

We pledge that the project we submitted to the competition is designed and produced by our students and consultants, whose names are listed below, that the report is prepared by us, otherwise, we will be disqualified from the competition because there will be ethical infringement and our team members and consultants will be banned from the competition for 2 years under the application guide article 37.

| Related | | Name Surname | Date | Sign / stamp |
|---|---|---|---|---|
| Students | 1 | | | |
| | 2 | | | |
| Advisor | | | | |
| Director of the Institute / Dean | | | | |

Institution stamp

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# Contents

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## Cover Page

The title of the Free Project , The title of the thematic area, Name of the institution(s), The names of the students/group members.

## Summary

Methods for implementing the idea of Free Project, modeling used, simulation, testing, prototyping, etc.

Describe the verification methods and the results obtained/expected to be achieved. There must be max. 250 words.

## Purpose

✓ What is the purpose of starting the Free Project category?

✓ What can be provided if the project is successful?

✓ For what purpose and where will the project be used?

✓ Economic considerations; cost, competitiveness, savings, benefit/cost ratio, etc. Such data can be presented in this section.

✓ If they have any contributions to other organizations, industry or country other than the organization that is trying to use the results of the project output, they should be explained in this section.

## The Innovation feature of The Project

✓ Which of the categories of innovation at the international, national or firm level is the innovation element included in the project idea?

✓ What are the differences or advantages of the product, method, or process which are the project outputs , when you compare them with previous or similar projects?

✓ Patent, industrial design, etc. for project sub or final outputs what are the chances of obtaining intellectual/industrial property rights?

✓ What difference does it make from the other registrations already taken?

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## Methods used in the Open Project Preparation phase

The solution, the path, the vehicle used, the technique and the methods that were set up for the implementation of the project idea must be explained. This section is expected to include activities that are being carried out to verify or validate project outputs.

## Work, process, planning

The plan implemented during the project should include plans for the activities, time and responsibilities involved in the project.

## Conclusion

The results obtained/expected from the project should be evaluated and interpreted in consideration. If the project output has been implemented in an industry organization, the results obtained so far should be presented in this section.

## Resources

Resources should be given in this section.

## Notes

✓ Using the font "Times New Roman 12" is necessary for the assessment of the report,

✓ 1.5 line spacing, leaning text on both sides,

✓ Not more than 15 pages in total,

✓ The report is up to 20 MB file size,

✓ The report must be scanned and uploaded to the system in PDF format after the corresponding locations are filled out and signatures are signed.

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