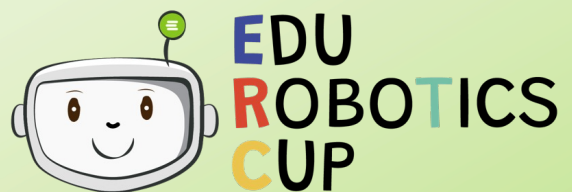




# PREPARING FOR EDU ROBOTICS CUP 2023



organized by



**EDUTUS**  
UNIVERSITY





# What is Edu Robotics Cup?

**Edu Robotics Cup** (ERC) is an

- **international**
- **innovative**
- **online**

robot building and programming competition which is open for **all age groups** and consists of an **Engineer Challenge** and a **Project Challenge category**.

**Language of the competition: ENGLISH**





# Concept of ERC – differentiating features

## Get a feel of robotic competitions

- before entering into more demanding events

## Test your readiness at low level of risk

- easy to enter
- less complex tasks
- low cost entry
- no travel, no stress and behaving in an unknown environment, and among other

## Good pastime, good preparation

- over the weekend preparation
- professional jury – lot of feedback





# Categories and age groups

Engineer  
Challenge

## Rookie

max. 10 years old  
(born in years:  
2013 or later)

## Kids

10-14 years old  
(born in years between:  
2009-2013)

## Teens

15-19 years old  
(born in years between:  
2004-2008)

## Masters

min. 19 years old  
(born in years:  
2004 or earlier)

Project  
Challenge





# Engineer Challenge

## Specific information





## Important dates to remember

### 14<sup>th</sup> December (CET 07:00:00)

- opening

### 17<sup>th</sup> December (CET 23:59:59)

- deadline to upload the **video recording of the robot run** and **the documentation**

### 18<sup>th</sup> – 19<sup>th</sup> December

- scoring

### 20<sup>th</sup> December

- possibility of team appeals

### 21<sup>st</sup> December

- announcement of results and closing ceremony (online)








# Preparation

## The Robot:

- The following microcontrollers can be used to build the Robot:
  - Lego Mindstorms EV3
  - Lego Mindstorms Robot Inventor
  - Lego Spike Prime
  - **Micro:bit** 
  - **Arduino**
- Up to **8 sensors and/or motors** can be connected to the robot at a time.
- Teams have a **free choice** of what **software or firmware** they use on the controller.
- Maximum dimension of the robot: **25 cm length** and **25 cm width**, the **height of the robot is not limited** (after the robot starts the robot run there is no limit to its dimension)

Game mats are printed  
by the teams!  
It is not possible to place  
an order with us!

## Game mat:

- **Size of the game mat: B0** (1000 mm x 1414 mm)
- We recommend the following materials:
  - 510 g/m<sup>2</sup> PVC tarp (Frontlit),
  - 170 mic ploypropylene film matte grayback paper





# The competition

## Video of the robot run:

- The recording has to include an **all-angle view of the robot** with a **zoom in on the display** of the robot, **which also shows that Bluetooth and WiFi are switched off**
  - It should also include a zoomed in view of all the game objects and their positions on the game field.
- The video has to include **an overall recording of the game field** where judges can clearly see the 30 cm ruler placed on the 25 cm reference point and all graphic images on the mat are visible.
  - This way **judges can make sure that the game mat has the valid size**, colors and graphic images and there it is not manipulated in any way.
- video has to be **ONE UNCUT RECORDING**  
**It is forbidden to manipulate the video, including any cuts, movie tricks etc.**







# The competition

## Video of the robot run:

- Robot can start after these are recorded and the whole robot run has to be on the video as well
- At the end of the robot run, when the robot is not moving anymore the team has to record a zoomed in view of the end positions of all the game objects on the game field
- Allowed formats are: **.mp4, .avi, .wmv**
- Teams have to upload the **documentation in PDF format**
- **The maximum time of a robot run is 2 minutes, it 2 minutes at maximum to do all the tasks** (120 seconds)
- The robot can solve the tasks in any order
- **The robot run ends and the timer stops when:**
  - the available 2 minutes are over,
  - a team member or anyone else touches the robot, the game mat or any game objects,
  - the robot completely leaves the game mat, meaning that no part of the robot is touching the game mat





# The competition

## Video of the robot run:

- Judges will measure time with a stopper when they watch the uploaded videos. In case the robot is not finished within the limit of 2 minutes, the judge will stop the video at the 2 minute limit and tries to give scores that are earned up to that point.
- Once the deadline for uploading the videos is over and judges are finished with the scoring teams have to confirm their score to finalize it

**Deadline for confirming the score is: 20<sup>th</sup> December 2023 (CET 23:59:59)**

- Teams have a chance to appeal against their scores in email sent to [judge@wro.hu](mailto:judge@wro.hu)

**Deadline for sending an appeal: 20<sup>th</sup> December 2023 (CET 23:59:59)**

- **The minimum score is 0**

If a team achieves 0 points, their robot run time is automatically 120 seconds





# Project Challenge

## Specific information





# Important dates to remember

## 6<sup>th</sup> December (CET 12:00:00)

- Registration period ends

## 10<sup>th</sup> December (CET 23:59:59)

- Deadline to upload the first draft of written report  
(Which shows how the team is thinking)

## 14<sup>th</sup> December (CET 23:59:59)

- Deadline to upload **final written documentation** and
- Deadline to upload **final presentation video**

## 16<sup>th</sup> – 19<sup>th</sup> December

- Judging interviews (google meet)

## 21<sup>st</sup> December

- announcement of results and closing ceremony (online)





# Theme 2023: SUSTAINABILITY

## Aim:

- Demonstrate and present an **innovative solution (product)** to a problem that fits to the theme
- Convince judges on **the feasibility and usefulness of the solution**

## Constraints:

- Keep the idea of **sustainability** in mind when selecting materials and designing the project!
- The project presented by the teams **must contain at least one robotic solution**, beyond that the teams can use any material to present their idea.
- For the robotic solution the teams are **free to use any micro-controllers and building platforms!**
- Teams can use **any software** and an **unlimited number of controllers, motors, sensors** to present their project!

***Tips:** The more complex the solution, the higher it is valued!  
(but remember complexity must be meaningful!)  
Take cost efficiency into consideration at any time!*







## Theme 2023: SUSTAINABILITY

Look for examples of overusing Earth's resources in your own environment, in your own village or city, in your family or in the communities you are part of.

**Can you make a change with your ideas? Do you think robotic based solutions can bring relief?**

**“Think Global, act local!” Or we just as well say, “Think big, but act small!”**

Some topics you might want to look at closer, but remember these are just ideas, you are free to explore and offer solutions for any relevant topic related to sustainability:

**#agriculture**

**#packaging**

**#transportation**

**#foodproduction**

**#publicservices**

**#travelling**



# What, when and where to upload?

## Written Documentation | Project report

- First draft uploading due date: **4<sup>th</sup> December (CET 23:59:59)**
  - Project concept
- Final version uploading due date: **14<sup>th</sup> December (CET 23:59:59)**
- Document length: **min. 3, max. 6 pages** (incl. pictures)
- File type: **PDF document**
- Language: **English**

## Presentation Video | Project presentation

- Final version uploading due date: **14<sup>th</sup> December (CET 23:59:59)**
- Video length: **max. 2 minutes**
- Language: **English speaking** with **English subtitles**
- File type: **.avi, .mp4, .wmv** files
- Orientation: **horizontal, min. 1920 x 1080 (FHD) resolution**

All uploads are to be  
made here  
[Registration](#)  
& [competition](#)  
[management platform](#)



# Registration & competition management platform

Team registration

**Edu Robotics Cup – Project Challenge 2023** • You already signed up

Date	Signup deadline	Signup fee	Premise
2023.12.15	2023.12.01 23:59	35 €	Online

For more information please visit our website: [www.educup.org](http://www.educup.org)

Your signups

TESZT Project Challenge 2023	Proceed to the competition
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[Create new signup](#) [More information about the competition](#)

Category and age group rules

**Edu Robotics Cup – Project Challenge 2023** Your current competition status  
TESZT Project Challenge 2023 • Active participant

1 Download the task 2 Upload files 3 Confirm your scores 4 Competition results

Here you can find all the documents necessary to complete the competition.

Available documents:

PDF	wra_competitions-14-Project-Challenge-2023-general-rules-1.0v_20231015.pdf	2023-10-16 14:23:25 - 2.79 MB
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[Edit signup details](#) [More information about the competition](#)

**Edu Robotics Cup – Project Challenge 2023** Your current competition status  
TESZT Project Challenge 2023 • Active participant

1 Download the task 2 Upload files 3 Confirm your scores 4 Competition results

You can upload the requested files until the following date:

**2023. 12. 14 23:59**

Drag files here to upload, or  
[click here to open the file browser](#)  
Select folder

Documentation and video upload

**Edu Robotics Cup – Project Challenge 2023** Your current competition status  
TESZT Project Challenge 2023 • Active participant

1 Download the task 2 Upload files 3 Confirm your scores 4 Competition results

No scoring has taken place yet.

Your uploaded files will be scored once the file upload deadline is over.

Until then please be patient, and don't worry, we will send you notification in email as well!

[Edit signup details](#) [More information about the competition](#)

Score confirmation

**Edu Robotics Cup – Project Challenge 2023** Your current competition status  
TESZT Project Challenge 2023 • Active participant

1 Download the task 2 Upload files 3 Confirm your scores 4 Competition results

Currently unavailable.

The results will be published after the following date:

**2023. 12. 21 23:59**

Until then please be patient, and don't worry, we will send you notification in email as well!

[Edit signup details](#) [More information about the competition](#)

Age group competition results



# Evaluation criteria & the metrics

Criteria	Key concepts	Max. points
Research	Relevance, thoroughness, knowing existing solutions	10
Creativity	<b>Thinking out of the box</b> Unusual use of known solutions, also (!) unique ways of presenting	20
Innovation and value	<b>New solution, or existing with added value!</b> Also understanding of feasibility, social impact, and general understanding of business concepts	10
Robotics	<b>Complex and reliable hardware and software solutions</b> Adequate to the age group. Also meaningful use of material and resources	20
Difficulty	<b>Level of complexity</b> Of the problem they target to solve, presentation covers all aspects of the project	15
Aesthetics and presentation	<b>High self expectation on quality</b> Of making and presenting the solution	10
Impact and sharing	<b>Who else benefitted</b> From the team participation on this competition?	15
<b>Total</b>		<b>100 points</b>





# Project challenge Tips







# The taste of the judges – Content



## Very clear problem statement – What exactly is what the team wants to solve?

- make us understand, feel the problem

## Attachment to the problem

- Why do the team wants to solve the specific problem?
- Why it is important for the kids?

## Demonstrate systematic process of selecting the idea

## Rather have a specific solution to a very focused (but important issue)

- than to get lost in dreamland and trying to change/save the World

## Demonstrate sufficient level of research of existing solutions

- being able to answer why the proposed solution does not yet exist

## Understand what feasible is, and understand the difference between a model and a real-life solution

## Solution and level of complexity must fit to the age group

- Make us believe that it is the idea and work of the kids

## Clear reasoning why the product/solution is a cure to the identified problem





# The taste of the judges – Content



## Try to be natural, and enthusiastic on the video

- Free speech (even with mistakes) is lot better than a learnt in script
- Enthusiasm is convincing
- It must be convincing that the kids understand what they are talking about

*Tip: Write the script if you like learn it than practice to tell it with your own words than record the video*

## Make us feel that the team believes in the solution

## The jury must feel that all team members have a task and each of them add something to the teamwork, to the solution

- It is more than all team members talking on the video
- Meaningful contribution should be demonstrated

**This is a „big show”, acting is fine, but only until it supports the understanding.  
The jury must feel that the kids are having fun and they enjoy the project. 😊**





# General project development issues

**Know the scoring scheme, understand the metrics**

- Try to cover everything that it asks for, but not in a direct way

**Systematic, balanced and planned use of project communication tools**





# Use of communication tools

Plan how to use the tools the team has to communicate the project.

## Written report

- Description of the **idea** generation and selection process, solid reasoning
- Details of the **research**, and competitors (alternative solution) analysis
- Description of the **product development process**, and task distribution within the team
- **Technical details**, data of the solution

## Video

- Tell about the **team's personal attachment to the project**, emotional aspects
- Demonstrate **how the solution works**, and how does it solve the problem
- Demonstrate **team spirit**, and show that the team enjoys working together

## Interview

- **DON'T REPEAT THE VIDEO!**
- **Summarize the highlights** of the project and prepare with a new finding or improvement to the project





# Interview & Preparation

## Understand that the jury know the project

- The judges read the report and watched the videos

## Demonstrate that the team kept on working after submitting the report and the video

- Save some interesting fact, additional feature for the interview
- Prepare with a very short summary of your project

## Try the interview with the coach

- Even better with an adult, who knows little of the project

## Try to list questions related to the project

- Prepare with answers







# Interview – Technical issues


## Test beforehand how the team can be seen and heard on the other side of the camera

- **Plan the scene** and understand the technology that is used
- Try **to use a good microphone**, and test what is the range where the mic works well
  - If it is a very pointed, narrow range mic, do not turn your head
  - **Never use headsets: all team member must hear the questions of the judges**
- **Practice the use of the online platform** the interview is concluded on

## Plan and practice Q&A

- All team members should participate





# Role of a coach – „Do’s”

Set the process, and keep it on track

Selecting among ideas

- Should be a systematic process, help that to happen

Help the kids work through and understand the evaluation scheme

- Raise the question and have it answer by the kids
- What the judges might look for?

Help kids setting up their own goals

Ask a lot of questions, do not tell solutions!

- Never solve a problem
- Help them to find the way to solve it!
- You can give suggestions where to look for solution, but don't give the solution





# Role of a coach – „Do’s”

Always try to understand the kid’s thinking. Do not answer from the reflexes of an adult!

## As far as feasibility

- Be the "wise man", who knows a lot about the world
- Do not be overly skeptical on new solutions
- Do your own research!

## As far as existing solutions

- Again, do your own research
- If you find something similar: help them to find it, but **do not show it to them**

## Help kids asking questions related to the problem they identified

## Make them feel good

- Make them enjoying working together
- Make them feel they are special!





# Role of a coach – „Dont’s”

## Never do the work instead of them

- just to have it look more professional!
- let the kids show their creativity
- and let them explore

## Never force on them your favorite topic, or idea

- even if they do not have an idea

## The jury should never feel your presence

- not in the video
- not in the report
- not throughout the interview





If you have questions about the competition (games and rules, registration system, uploading files), send us an email to [judge@wro.hu](mailto:judge@wro.hu) and ask our head judges.

Questions sent by e-mail will be collected and shared in the **Q&A section** of the website.

If you have questions about registration and payment, send us an email to [ezs@wro.hu](mailto:ezs@wro.hu) and ask our organizer team.

