Competition rules for 2027

1 Competition organizer

The competition is organized by the **ICE-R project team** in collaboration with partner schools and organizations supporting the teaching of programming and robotics in secondary schools.

2 Focus and goal

The competition is intended for **students aged 12–18** and consists of **four correspondence rounds** focused on working and programming with **mBot2** robots, which were provided to schools within the framework of the ICE-R project. The aim of the competition is to develop logical and algorithmic thinking, technical skills, teamwork and creativity in solving practical tasks with robots. Schools that are not involved in the ICE-R project can also apply if they have access to mBot2 robots.

3 Teams and coaches

- Team size is **limited to a maximum of 5 students**.
- The school can compete with **more than one team**.
- Every team has **one adult coach**, who is responsible for registration, communication with the organizers and organization of the team's work.
- The coach can be a teacher, parent, or other responsible adult.
- One coach can lead multiple teams.

Coaches must **not actively help** solving tasks (e.g. programming or building a robot). He/she is only responsible for coordinating the team and adhering to the rules of fair play. Violation of this rule may lead to disqualification of the entire team.

4 Teamwork and recommended roles

A robotics challenge involves much more than programming. Every team member should have a meaningful opportunity to contribute. The roles below are suggestions, not mandatory job titles.

- **Designer:** develops ideas and plans a possible solution.
- **Builder:** designs, builds and adjusts the robot's physical setup or additional parts.
- **Programmer:** creates and improves the robot's program.
- **Tester:** runs trials, observes errors and helps improve the solution.
- **Documentarian:** records the work, takes photographs and prepares the submission materials.

In smaller teams, one person can take several roles. In larger teams, several people can share a role. Teams may organise their work in any way that suits them.

These roles should not become isolated jobs. Everyone is encouraged to share ideas, test solutions and help solve problems. The aim is to learn and succeed together.

5 Login and registration

- Registration is done via the registration form on the competition website.
- Additional registration is also possible during the competition — teams can participate in any of the 4 rounds. To be included in the overall results, you only need to solve at least one task.

For registration, the coach will send in the application:

- team name,
- school name,
- names of team members, and
- the coach's full name, date of birth and a contact email address.

After processing the registration, the coach will receive instructions for uploading the team's solutions to OneDrive.

6 Assignments and solutions

Assignments will be partially open-ended to allow for creative approaches and different solutions. If the team is unable to solve the complete task, a partially functional solution will also be evaluated. Try to modify the task to be most suitable for you and make an acceptable simplification.

Submissions: The complete solution must be in the **English language** and must include:

1. **Solution description** – a brief description of the robot's function, the principle of operation and any problems and difficulties the team overcame.
2. **Video** – demonstrating completion of the task (we recommend multiple attempts under different conditions).
3. **Photo documentation** – at least two photos from the work process (e.g. drawings, tests, construction details), at least one photo capturing the team together with the robot completing the task.
4. **Program** – a complete program (screenshot or listing), in block or text form.

Submitted programs, photographs, videos and descriptions must represent the team's own work. Explain any limitations or known problems honestly. An incomplete or unsuccessful attempt is still worth submitting.

The best solutions (2–3 per round) will be published on the ICE-R project website so that other teams can be inspired and learn from successful solutions.

7 Allowed hardware and software

In order to maintain fair play, teams are allowed to use:

- only mBot2 robots (maximum 2 per team),
- extensions provided within the ICE-R project,
- commonly available tools and materials (e.g. wires, strings, screws, magnets, paper, cardboard, glue, etc.),
- additional mechanical parts made by the team by any suitable method, including 3D printing, where the task allows it. No particular manufacturing method is compulsory unless a task explicitly says so.

It is not allowed to add additional electronic peripherals (motors, sensors) to the robot that other teams do not have. Programming is possible in the mBlock (Blockly) environment or in Python.

8 Timetable and evaluation

The competition consists of four rounds. A new assignment is published at the start of each round and teams submit their solutions by the deadline given below.

Round	Assignment published	Submission deadline
1st round	2 November 2026	15 January 2027
2nd round	15 December 2026	28 February 2027
3rd round	15 February 2027	31 March 2027
4th round	1 April 2027	15 May 2027

Teams upload their solutions to OneDrive by the deadline. After each deadline, the judges evaluate the solutions, award the teams points and provide feedback.

At the end of the competition, the points from all rounds are summed up and thus determine the overall team result. Skipping a round only means that the team will not receive points, but it can still continue in the next rounds. Your solutions will be evaluated by an independent jury of 3–5 experts.

The team will also receive brief feedback for each solution. The jury's decision is final and cannot be discussed.

The final event with the announcement of the results will take place on **16 June 2027** at FEI STU, Slovak University of Technology in Bratislava.

9 Personal data protection (GDPR)

- Videos and photos should preferably contain just a robot and a working environment, not persons.
- If there are people in the video or photos, the team coach is responsible for approval (or consent of the legal representative) with their publication on the ICE-R project website, social networks or in other promotional materials.
- By submitting solutions the team agrees to their publication on the project website and to their archiving at least until the year 2028.
- In the event of a request not to publish or even to remove specific material, the team coach may contact the organizers.
- The coach's personal data will be used just for the purposes of communication during the competition and will not be shared with third parties.

Agreement

By participating in the competition, all participants agree to these rules.

10 Contact

Don't hesitate to contact us for any questions, ambiguities or comments.

Email: richard.balogh@stuba.sk (competition coordinator)

Further information and updates will be continuously published on:

icerobotics.online (project website) and competition page

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