

Robottraffic (MAMA-Robot) Competition Rules

Robottraffic competition has three parts: the first (A) is a careful drive competition between teams of different schools. Second part (B) is a race, where each team in turn will use its robot to achieve a maximum grade, as specified below. The third (C) is a project assignment to the participating team.

A. Careful driving

Two competing teams with two robots start driving at the same time on a competitive ride, one on each side of the Robottraffic pad, at the marked start point. The robots travel on their intended path (path in the form of "8"), while ensuring compliance with traffic lights and traffic rules. The robots have to follow the road for two minutes without an accident.

Attention! The robot might encounter on the road obstacles or people crossing the road, where it should stop and wait until the evacuation of the obstacle or until the end of the road crossing.

- After two minutes, each robot which followed the path and did not perform an accident gets a grade 0 seconds/points - the best possible score.
- During the competition, each team is given three opportunities to get a robot which lost the line back to the path. For each such line lose 10 seconds/points penalty apply.
- A robot that lost the path for the fourth time, will be scored 120 seconds/points less the time (in seconds) it followed the path.
- A robot not stopping at a red traffic light will be fined 10 seconds/points.
- A robot that causes an accident gets a penalty of 10 seconds/points.
- A robot that had never come to the intersection will get a penalty of 100 seconds/points.
- Robot that failed to complete one "8" gets a penalty of 50 seconds/points.
- Not stopping in front of obstacles or people crossing the road, where the robot should stop and wait until the evacuation of the obstacle or until the end of the road crossing - 10 points
- The winning robot is that with the minimum score.
- Each group can perform part A once more in order to improve the score.

B. Racing

A Single robot performs one "8" route at a full speed - its execution time is measured. The winner is the robot with the shortest time. The team can return a robot that lost the line manually back to the path, a 10 seconds/points penalty apply. Each group can perform part B once more to improve the score.

C. Electronic-Road Project Rules

The Electronic-Road competition is intended to find robotic solutions to common traffic accidents, using controller, sensors, motors, batteries and other robot parts. Each competing group is requested to suggest a robotic solution in the topic published on the website for that year.

Note: there is no need to actually build the robotic solution, but rather describe it.

The suggested system must be practical and reliable. For the implementation of the system you can use any kind of available sensor, controller, GPS, etc.

- you can use cell phone applications.
- you should present an idea of the suggested system, with optional added information such as an animations, videos, posters, drawings, computer presentation etc.
- the projects will be presented in the entrance of the building by the students, explaining inspectors and visitors their solution.
- the project score is between 0 (lowest) and 100 (highest) for each criterion.

The presentation includes 5-7 minutes.

Judging will be according to the following criteria:

a) The idea is the most original;

b) The idea is the most applicable;

c) The idea is the most effective;

d) The explanation is the most convincing.

Winners

The team winning the **careful driving** will be awarded a careful driving shield.

The team winning the **race** will be awarded a race shield.

The team winning the **Electronic-Road project** will be awarded shield.