robotex International

# MAZE RULES

COORDINATOR FOR THIS COMPETITION

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## 1. Introduction

Robotex National Maze rules were adapted from the 1986 Official Rules for North American Robot Contests. Rules have been modified to meet modern technical capabilities.

## 2. Objective

In this competition, the mission of the autonomous robot is to negotiate a maze from specified corner to its center in the shortest possible time.

## 3. Technical Inspection and registration

The robot needs to pass technical inspection before the competition. The robot technical inspection is based on paragraphs “6.” and “9.”. During the inspection, it is checked whether the robot or the operator who is handling the robot meets the paragraphs requirements. **Only one team member with a robot** (the currently selected robot operator) **can come to the technical inspection**. **If necessary, they can have a translator or team instructor with them.** The purpose of this is to guarantee a smooth course of the competition and technical inspection.

## 4. Lighting conditions

The lighting in the area needs to be as close to real sunlight as possible (Midday), with consistent color and stability. The field cannot have shadows while the attempt is running. Lighting is allowed to change between attempts, but it needs to be consistent for every field.

## 5. Contest eligibility

1. Both an individual and a team can register for the maze solving competition.
2. One operator and up to four assistants may be registered for each robot **(maximum of five team members in total).** *The team may change the designated operator in accordance with the competition rules.

## 6. Rules for the Robot

1. The robot must be autonomous (no remote controls allowed).
2. The robot must not leave any part of its body behind whilst solving the maze.
3. The robot is not allowed to jump over, fly over, climb, scratch, cut, burn, mark, damage, or destroy the walls of the maze.
4. The Robot must not be larger, either in length or in width, than 16 centimeters. The dimensions of a robot that changes its parameters during a run cannot expand larger than 16 cm × 16 cm. There are no restrictions on the height of the robot.
5. Any violation of these rules will constitute immediate disqualification.

## 7. Rules for the maze

1. The maze is composed of 18 cm × 18 cm unit squares and comprises up to 16 × 16 squares. The walls of the maze are 5 cm high and 1.2 cm thick (assume 5 % tolerance). The distance from wall to wall within a square is 16.8 cm. The outside wall encloses the entire maze.
2. The sides of the maze walls are white, the tops of the walls are red, and the floor is black, finished with matt color.
3. The walls may not be uniformly white, the tops of the walls may not be uniformly red, and the floor may not be uniformly black. Fading can occur, and parts from different mazes may be used. Also, the floor may not provide a consistent level of friction.
4. The start of the maze is located at one of the four corners. The start square is bordered with walls on three sides. The start line is located between the first and the second square. The goal is to reach the target square located in the center of the maze, which consists of an area made up of four 18 cm x 18 cm squares. The finish line is at the entrance of the target square.
5. There are multiple paths to the target square and are expected of the contestants. The target square has only one entrance and it will be positioned so that a wall hugging robot will not be able to find it.

## 8. Rules for the competition

1. Each contesting robot is allocated a total of 5 minutes of access to the final maze. Any time used to adjust a robot between runs is included in the 5 minutes. Each run (from the start cell to the center zone) in which a robot successfully reaches the target square is given a run time. The minimum run time shall be the official result of the robot. First place goes to the robot with the shortest official time. Second place to the next shortest, and so on. Robots that do not finish the maze will be ranked by how close they got to the destination square.
2. Each run shall be made from the starting square. The operator may abort a run at any time. If an operator touches the robot during a run, it is deemed aborted, and the robot must be removed from the maze. If robot has already crossed the finish line, it may be removed at any time without affecting the time of said run.
3. After the maze is disclosed, the operator cannot feed information of the maze into their robot.
4. The contestants are allowed to:
    - change switch positions;
    - adjust sensors;
    - make repairs in case the robot breaks down.
5. The run timer will start when front edge of the robot crosses the start line and stops when the front edge of the robot crosses the finish line.
6. Referee must be able to add a marker/sticker on top of the robot.

### 8.1. Delay of the competition

When competitions start to delay, organizers have the authority to act in accordance with rules to minimize the delays and bring the competition back on schedule. The competition will continue as smoothly as possible, eliminating any rematches or any moments that could cause delays, and instead using a less time-consuming judging system based on rules. Any objections will not be accepted during the delay, and competition will not be delayed to resolve the objections. If the robot cannot be found in the designated area, the attempt is considered a failure.

## 9. Organizing

1. The robot must be registered before the competition. The registration process includes technical inspection of the robot and marking the robot with a number sticker.
2. Technical inspection must be completed by the time that is specified by the organizers.

3. All questions and problems arising during the competition are solved by the referee.
4. The decisions of the referees are not subject to appeals. Complaints must be submitted during or immediately after the match. If no settlement is reached with the referee, claims must be submitted immediately to the Robotex Head referee. Any later complaints will not be accepted. In case of any conflicts or disputes, the final word will be said by the referees and/or the organisers. **NB! Rude behaviour is not tolerated and the team who does not respect the referees / head referees decisions can be disqualified by the head referee and/or event organisers.**

### 9.1. Lighting and infrared noise

The arena has at parts uneven lighting and infrared noise, which may disrupt the work of sensors during the competition. For this reason, the organizers recommend using covers or blinds for sensors, testing the sensors under intense lighting conditions or even under direct sunlight to imitate the lighting conditions of the competition arena.

### 9.2. Winners one-year break

Winners of 1st place cannot compete in the same category next year– they must take a one-year break from that category. At least 50% of the team must consist of non-winners. If the winners' team has three members, next year they should have at least one new member who was not previously on this team to compete in the same category again instead of taking a year off from it. This rule is aimed at bringing new people, giving everyone a fair chance and encouraging recurring winners to try new competitions they usually do not participate in and to educate and engage new beginners in the field of robotics. *

***The rule complies only with Robotex International standards and is used for Robotex National competition.**

## 10. Changes and cancellations in the rules

Changes and cancellationsmade to the rules are adopted by the main organiser of the competition, according to theregulations of the regulatory committee of the competition.

## 11. Revision history

- 01.02.2026 Revision history is created. (Many changes have been made to the rules, please read the rules.)