Autonomous Maze Solver

The Maze Solver Autonomous Robot Competition is a technical robotics event designed to test participants' ability to design, build, and program a fully autonomous robot capable of navigating a complex maze without human intervention.

1. Event Overview

In this competition, teams must develop a fully autonomous robot that initiates operation from a designated START point, navigates through a 3D maze, and reaches the END point in the shortest possible time.

2. Configuration & Specifications

Bot Specifications	
Parameter	**Specification**
Robot Type	Fully Autonomous
Maximum Dimensions	20 cm (L) × 18 cm (W) × 15 cm (H)
Maximum Weight	2 kg
Power Source	On-board battery only
External Control	Not allowed
Maze Specifications	
Maze shape	Custom shape
Path Width	30 cm (fixed)
Wall Height	15 cm
Wall Thickness	~12 mm
Turns	$<180^\circ$

3. System and control

- Any standard microcontroller may be used (e.g., Arduino UNO, Nano, or equivalent).

- All computation and decision-making must occur on-board.

- All sensors must be securely mounted on the robot body.

4. Dead-End Navigation Rules

- Dead ends are an intentional part of the maze design.

- No additional turning space will be provided beyond the defined path width.

- Robots must autonomously detect dead ends and execute turning or reorientation manoeuvres within the corridor.

- Both in-place rotation and multi-point turning are allowed.

5. Judging & Scoring Criteria

Robots will be evaluated based on:

1. Successful completion of the maze.

2. Time taken to reach the END point.

Any manual intervention will result in disqualification.

General guidelines

- Maze layout is unknown to participants prior to the event.

- No remote control or external assistance allowed.

- Any contact between the robot and the maze walls will result in a time penalty.

- Teams size is limited to 2.

- Judges' decision will be final.

- The organizing committee reserves the right to modify rules if required for safety or fairness.

For any queries or clarifications regarding the event, please feel free to contact:

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