1. Event Overview:

PathFinder is a navigation-based robotic challenge where autonomous robots must accurately follow a predefined path while negotiating turns, junctions, and surface variations. The competition focuses on **precision control, alignment accuracy, mechanical stability, and consistent navigation**.

Unlike high-speed or collision-based events, PathFinder rewards **discipline, smooth control, and error minimization**. Robots are expected to maintain contact with the path while handling curves and directional changes without leaving the designated track.

The event emphasizes **control reliability and mechanical balance** rather than raw speed.

2. Eligibility Criteria:

The PathFinder event is strictly limited to undergraduate-level participants to ensure fair competition.

- The competition is open for all students.
- All participants must have a **valid ID card** during the event.
- Each team must consist of **2 to 4 members only**.
- A participant is **not allowed to participate in more than one team** in this event.

Violation of any eligibility rule will result in **immediate disqualification**, regardless of the competition stage.

3. Team Registration:

- Every team is required to register with a **distinct team name**.
- After registration, the **composition of the team is final and cannot be altered**.
- Teams must arrive at the event venue at **least 30 minutes prior** to their scheduled time slot.
- Failure to report on time may result in **disqualification or a walkover**, depending on the organiser's discretion.

Teams are accountable for providing accurate and complete registration information.

4. Arena Description:

The PathFinder arena is designed to test path-tracking accuracy and directional control.

- The arena will consist of a **flat square base** with a clearly visible path.
- The path will be created using **black tape or paint** on a contrasting surface and the width of path will be **1.5** to **3 cm**.
- The track may include **sharp turns, curves, intersections, and dead-ends**.
- The width of the path will be uniform throughout the arena.
- Start and finish points will be clearly marked.

The arena layout may vary slightly based on setup conditions and will be disclosed during the event briefing. The arena is designed to evaluate **control precision and stability under navigation constraints**.

5. Robot Specifications:

5.1 Size Constraints

- Maximum allowed dimensions:
  25 cm × 20 cm × 15 cm (Length × Width × Height)

- The robot must remain within the specified dimensions at all times.
- Any expanding or **unfolding mechanisms are strictly prohibited**.

5.2 Weight

- Maximum allowed weight of the robot is **1.5 kg** (including battery and all mounted components).
- Robots exceeding the weight limit will be disqualified during inspection.

5.3 Power Supply

- Robots must be **self-powered**.
- External power sources are **not allowed**.

Batteries must be securely mounted and properly insulated.

6. Disqualification Criteria:

A team may be disqualified if

- The robot does not meet size, weight, or safety constraints.
- Eligibility or registration rules are violated.
- Unsafe or unethical behaviour is observed.
- Instructions from officials are repeatedly ignored.