



IPSC IT FEST 2026

Arena Specification

Terra Incognita

The Doon School
DEHRADUN

This document is part of the Terra Incognita document pack. It sets out the arena against which a school builds its practice replica, and the grid system by which the robot's map is marked.

1. Plan drawing

1.1 An example plan view of the arena is given below.

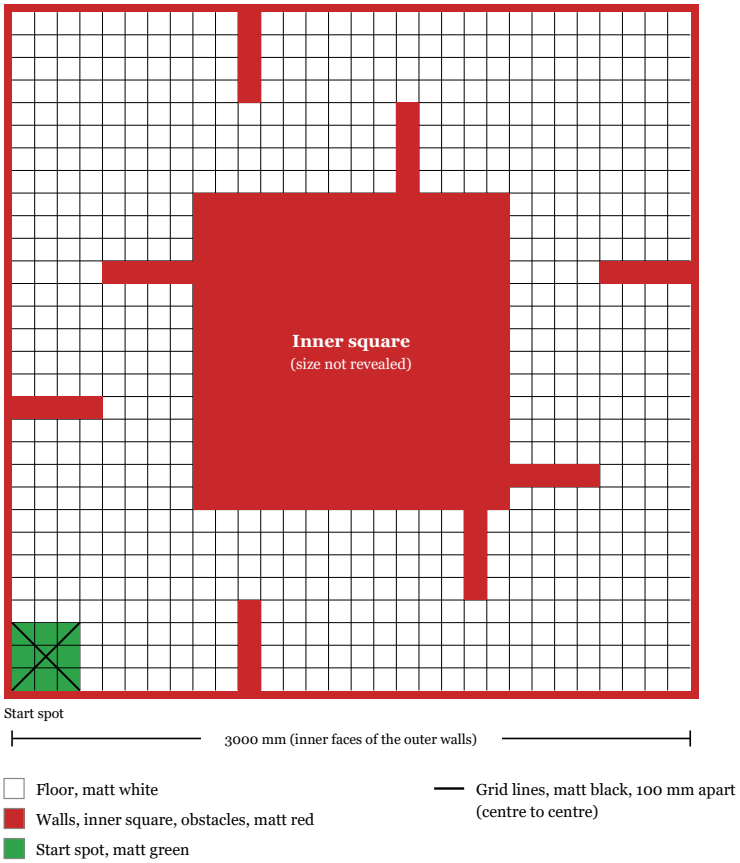


Figure 1. Example arena seen from above, drawn to scale except that the outer walls are drawn thicker. The size of the inner square and the positions of the fixed obstacles are examples only; on the day they are not revealed. The grid lines mark the 100 mm cells and are drawn on the arena floor in matt black.

1.2 The figure is an example of what the arena can look like from above. In any arena that is built, the robot starts at the starting position, completes one lap of the arena and returns to the same position.

2. Fixed dimensions

All dimensions are in millimetres.

Element	Dimension	Tolerance
Outer square, between the inner faces of the outer walls	3000 × 3000	±10
Outer wall height above the floor	300	±5
Outer wall thickness (outside the 3000 × 3000 square)	18	±2
Inner square: a solid block centred in the outer square. Its side is not revealed and is a multiple of 200, so that its faces fall on cell edges (§6).	Not revealed	±5
Inner square height above the floor	300	±5
Path width, between the outer wall and the inner square: a multiple of 100	700 or more	±5
Fixed obstacle, length × thickness × height	400 × 100 × 300	±5
Clear gap between the free end of a fixed obstacle and the face opposite it	300 or more	±5
Start spot	300 × 300	±5
Width of each line of the X on the start spot	10	±1
Cell, centre to centre of the grid lines	100 × 100	Not applicable
Grid line width	10	Not applicable
Distance between two neighbouring grid lines, edge to edge	90	Not applicable

3. Layout

3.1 The start spot occupies the 9 cells in one corner of the outer square, touching both outer walls. The X is formed by two lines joining opposite corners of the start spot. The starting position is the point where the two lines cross, at the centre of the spot.

3.2 Each fixed obstacle stands on whole cells. It is fixed by one 100 mm end face to the outer wall or to the inner square, at right angles to that face. The number and positions of the fixed obstacles are not revealed.

4. Surface, walls and boundaries

4.1 The floor is 18 mm plywood, painted matt white. Joints between sheets are flush, with no step of more than 1 mm. Grid lines are marked on the floor in matt black, 10 mm wide and centred on the cell edges (§6.1). They are painted or taped flat, no more than 1 mm thick, so that a robot drives over them without catching.

4.2 The outer walls, the inner square and the fixed obstacles are 18 mm plywood, painted matt red. They are fixed so that they do not move when touched by a robot.

4.3 The start spot is matt green vinyl or paint, no more than 1 mm thick, so that a robot drives over it without catching. The lines of the X are matt black.

4.4 Robots must not deliberately cross, climb, dismantle or damage a wall. Each wall contact that does not cause damage is deducted under the Judging Rubric §3.

4.5 Lighting is normal indoor lighting.

5. Colour standard

Element	Colour
Floor	Matt white
Grid lines and lines of the X	Matt black
Outer walls, inner square and fixed obstacles	Matt red
Start spot	Matt green, close to standard green #008000

6. Grid map

6.1 The grid. The whole 3 m × 3 m outer square is divided into square cells of 10 cm × 10 cm, aligned with the outer walls. This gives 30 columns and 30 rows, which is 900 cells. The grid lines on the floor mark the cell edges. The cell size is equal to the thickness of a fixed obstacle. Every fixed obstacle and the inner square cover whole cells.

6.2 Marking each cell. The robot's map marks every cell as one of two values only:

- "wall": the cell is occupied;
- "no wall": the cell is free.

A cell that the map does not show as wall is counted as "no wall".

6.3 The reference map. The organisers hold a perfectly true reference map of the arena. In the reference map, a cell is "wall" if either of the following is true:

- the cell lies inside the inner square;
- the cell is covered by a fixed obstacle.

All other cells are "no wall". This includes all cells of the start spot. The robot's map must show the same.

6.4 Showing the map. After the run, the team shows its grid map on the organisers' HDMI monitor (Rulebook §3.3), so that the organisers can check it cell by cell:

- the map is shown as seen from above, with the start spot at the bottom-left of the display;

- the map is a grid of 30 columns by 30 rows, with the cell lines visible;
- every "wall" cell is filled and every "no wall" cell is left empty, so that the two values can be told apart without doubt;
- the map fills at least 80% of the height of the screen;
- no other map or overlay is shown.

6.5 Checking. The organisers compare the displayed map with the reference map cell by cell, in the arena. The points are given by the formula in the Judging Rubric §2.1.

7. What varies

7.1 Nothing varies between teams. Each team receives one official run, and the layout is the same for every team. The size of the inner square and the positions of the fixed obstacles are not disclosed before the run.

7.2 The dimensions in §2, the layout rules in §3, the surface and colours in §4 and §5, and the grid in §6 never change. The start spot is always in one corner of the arena.