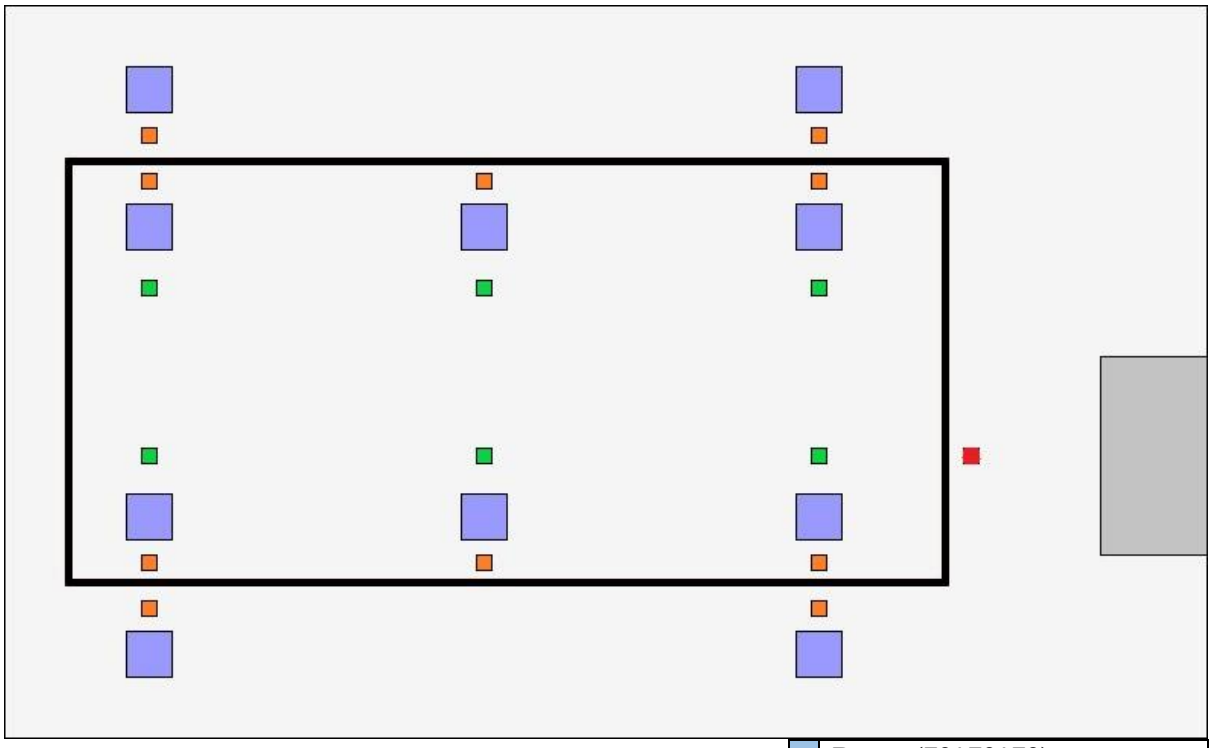
Smart and Efficient Techniques for Automated Guided Vehicle

1. Arena:



	Boxes (70*70*70)
	D1 QR Code(40*40)
	D2 QR Code(40*40)
	QR Code for battery charging
	Charging section

Fig 1

Length * Breadth = 3300 mm * 2500 mm

There are 3 sections in which the demonstration is divided. Let us call them D1, D2, D3 for the sake of convenience.

1. D1:
   Here AGV will use machine vision for the line following application. This will be demonstrated on the black line shown in the Fig 1. QR codes on the either side of the line are used for decision of pick or place. Side arms present on either side of the AGV are used for it. Configured QR codes pasted on the floor will work as feedback in decision making.

2. D2:
   This section will be demonstrated in the internal part of black line. Here we are mainly focusing on the path planning algorithm. Node numbers or values are predefined for the positions in the QR code. By using user interface and IoT platform, start point and destination points are provided to AGV. The optimum path will be decided by the AGV itself. A load cell is used as a feedback to prevent overloading condition.

3. D3:
   Here AGV will follow a particular person. Machine learning algorithm will be implemented for the same. Also the load cell is used for the preventing overloading.

4. D4:
   This is the self-charging feature in which the low battery level will be detected and it will move automatically towards battery charging station. The position of the battery charging station will be decided by a special QR code (red box in Fig 1).