

# Path Planning Algorithm for Autonomous Mobile Robot

## Technology Overview

For existing autonomous mobile robot (AMR), the path planning algorithm in Robot Operating System (ROS) is used to generate path. The current path planning algorithm only requires starting point and destination point. Then it will generate the path by itself. The path may not follow the desired routing path.

To solve this problem, a new path planning application was created. A new path planning algorithm was developed to ensure that the robot can cover the entire area efficiently and in the desired pattern.

## Features & Specifications

The features of this technology are:

- Microsoft Windows-based application
- can download the map (created with GMapping by robot with ROS)
- can download sector definition (created by Inkscape application from the robot)
- suitable for different sizes of robot – user can input the size of robot to generate the path for it
- obstacles avoidance – for small obstacle in the path, it will just bypasses the obstacle. For big obstacle, it can turn back and re-route the path for the robot
- generated path can be uploaded easily to the robot with the wireless cloud-based network connection



## Customer Benefits

- Easy to use
- No special training required for technician
- Can be applied for different size of robots
- Path can be easily uploaded onto the robot

## Potential Applications

This technology can be used (in AMR deployed) in:

- warehousing and logistics
- manufacturing and assembly
- healthcare
- retail and hospitality
- agriculture
- security and surveillance
- transportation and delivery

