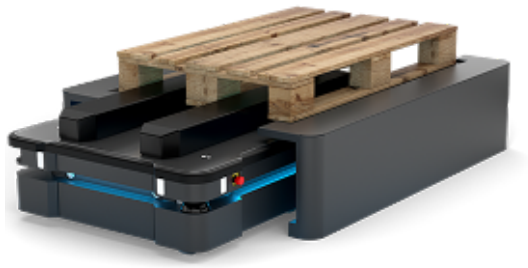
KONICA MINOLTA

Giving Shape to Ideas

Automated Material Handling in Transportation Hub



Solution Features:

- **MiR500** - used to transport heavy palleted machinery parts
- **Sensors & IoT -** creates missions based on sensor inputs
- **Pallet-lifting Mechanism -** allows automated movements of pallets
- **SWorkflow software** - allows reconfigurable business workflows

THE BACKGROUND

Our client is a leading transportation service provider in Hong Kong. They have several depot warehouses where the transportation vehicles are stabled and maintained.

THE CHALLENGE

Traditionally, technicians use forklifts and pallet jacks to move pallets from one location to another within a warehouse facility. This process is laborious and comes with safety concerns as technicians are handling pallets with high payloads. Additionally, it is an inefficient use of these skilled workers' time when their efforts could be directed to higher value activities.

THE SOLUTION

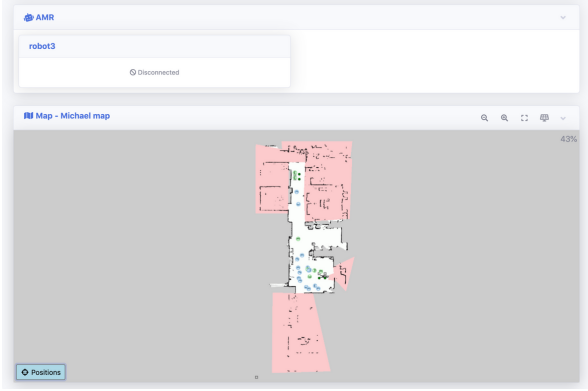
Using a combination of hardware and software products, Konica Minolta developed a comprehensive solution that helped to automate the process of moving the pallets.

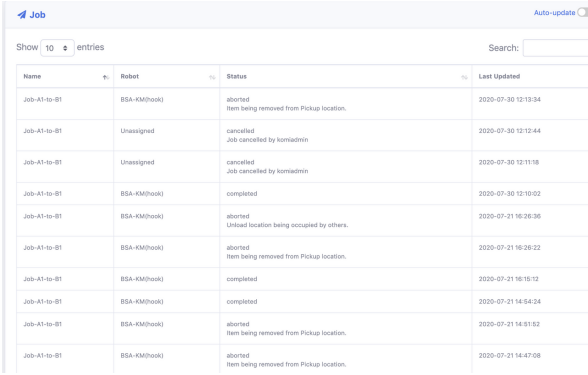
Our solution involved the deployment of an Autonomous Mobile Robot (AMR) developed by Mobile Industry Robots (MiR), Mir500, which was used to transport heavy palleted machinery parts from one location to another. The Mir500 utilizes a laser-based technology to create a route map and proximity sensors that feeds data into a planning algorithm. This allow the robot to navigate autonomously as well as respond to humans or obstacles on its way and navigate safely around them.

The unique pallet lifting mechanism ensures stable handling and transportation of pallets, shelves units and more. It enables the MiR500 to lift pallets autonomously from the Pallet Rack and lowers the pallet for stable transportation of total payloads up to 500 kg.

As part of the solution, we also deployed our Konica Minolta software that was developed entirely in-house based on feedback from the market on critical needs. sWorkflow is a custom interface software that can flexibly execute different AMR automated workflow scenarios. It also enables AMR to work seamlessly with other sensors and material handling equipment.

sWorkflow Dashboard





KEY BENEFITS

1 INCREASED PRODUCTIVITY

Automating manual tasks so staff can focus on higher value activities

2 FLEXIBLE SOLUTION & INTERFACE

Routes can be changed easily with laser based navigation

3 EXTERNAL SYSTEM INTER-OPERABILITY

Interaction to external system is seamlessly automated with integration of digital I/O, sensors & communication with other system

4 RETURN ON INVESTMENT

Robotic automation of the pallet transfer process results in cost savings, leading to a higher return on investment