Case Study

AUTOMATED GUIDED VEHICLES & THEIR APPLICATION WITHIN INDUSTRY 4.0 – Project Kate

Keywords: *Automated Guided Vehicles for SMEs, Engineering Digitisation*

Background to Case Study

Many companies are using Automated Guided Vehicles and internal conveying systems to support their system requirements through automation. Despite that these systems would entail a certain element of capital expenditure, especially for small to medium sized organisations, the returns of implementing such systems puts the SME in an advanced position towards the implementation of Industry 4.0.

Introduction to the Case Study and it's growth within Industry 4.0.

Gotting KG has developed a small, fully automated AGV for moving small load carriers between storage racks made of item components and within their intermediate stored at their production site. This facilitates the progression of repetitive tasks and improved resource utilisation.

The Case Study and Industry 4.0 Elements: A Pictorial Overview

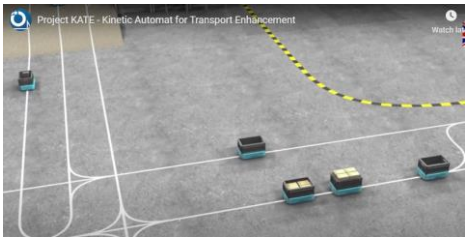
The Kinetic Automat for Transport Enhancement (KATE) has been specially designed for payloads up to 50 kg which does not require specific safety precautions to operate. KATE travels directly over the floor surface, and the energy released during a collision is so low that an employee wearing safety footwear would barely feel the impact. Despite this, this AGV can also be fitted with detection systems, operated by Laser/ Ultrasound-based obstacle detection systems to stop prior to encountering personnel.

Automation supports personnel by taking over simple and repetitive movements/tasks which would alternatively utilise resources. As a result, personnel can focus more on value-adding tasks. The

Project No. 2019-1-PL01-KA202-064936

driving/steering module in KATE communicates via WLAN with a control computer and the Transport Control system. Transport Control is operated directly in a web browser, with no plug-ins or additional software required.

THE ELEMENT – TOPIC HEADING
APPLICATION WITHIN XXXX FOR INDUSTRY 4.0

The Element Explored within Industry 4.0 Application.  	*This AGV significantly reduces handling in production. KATE picks up small load carriers from a rack system in the warehouse and automatically conveys it to an intermediate store, so that employees just load their machine.* *KATE also automatically picks up empty small load carriers from the intermediate store and returns them to the warehouse. As a result, the AGV takes care of all material supply and removal tasks.* *AS a result of this application, material supply and transfer can be automatically managed and controlled. The repeatability of such systems allows for improved planning since timing for execution is more consistent and repeatable. Automation of such processes would also allow for remote control for selected processes where personnel intervention is not required.*
Application Target Audience	*The results of the case-study are intended for use by SMEs and entrepreneur subjects.*
Resources Used:	*Case Study implementation available here* AGV Case Study
Further Reading:	*https://blog.item24.com/en/digitalisation-in-mechanical-engineering/*

Project No. 2019-1-PL01-KA202-064936