

# ACCELERATING EFFICIENCY WITH VISION AI POWERED AMR ORCHESTRATION AT VOLKSWAGEN AUTOMOBILE STUTTGART



Leveraging Vision AI to streamline operations, while achieving  
Rapid RoI with Autonomous Mobile Robots in Car Service Logistics

A Case Study

Locixx GmbH and the Volkswagen Automobile Stuttgart Team implemented a Vision AI-based AMR Orchestration solution at the Volkswagen after sales service center in Feuerbach. The system monitors the completed or return requests from mechanics and drives the AMR to the right location in the store.



## CHALLENGE

At the Volkswagen car service center, mechanics frequently travel between their workstations and the store to order, collect, or return spare parts. This manual process leads to significant time loss, diverting mechanics from their core tasks. When returns are needed, inefficiencies increase, extending downtime. The challenge is to streamline this workflow, reduce wasted time, and enhance on-the-job efficiency.

## QUICK Return on Investment

The ConnectedThinks® vision AI based AMR Orchestrator solution with a single AMR drives productivity increase and time savings for mechanics in the process of spare parts sourcing from the storage area. A return on invest has been achieved within 12 months, providing additional automation potential and benefits in the future in the intralogistics area.



**12 MONTHS**

Return on Investment

**locixx® GmbH**  
VISION AI AND INDUSTRIAL IOT

## SOLUTION

The Volkswagen car service center implemented a Vision AI-powered AMR Orchestrator. When a mechanic needs parts, they place an order from their workstation system. Store personnel prepare the order and dispatch an Autonomous Mobile Robot (AMR) to deliver the items directly to the mechanic, while the Vision AI cameras monitor both the workstations and empty locations in the store. Upon receiving the parts, the mechanic can indicate a Cart return by turning the delivered box upside down, which the Vision AI system detects, and based on available storage locations, triggers missions for the AMR. This streamlined process reduces travel time, minimizes delays, and enhances overall operational efficiency.

## BENEFITS

### Real Human Signals for Returns

1

- By indicating returns simply by turning the delivered box upside down, the system eliminates the need for multiple new HMIs at each workstation
- This intuitive signaling enhances operational efficiency while removing the confusion in operating HMIs and the time required to manage returns.

2

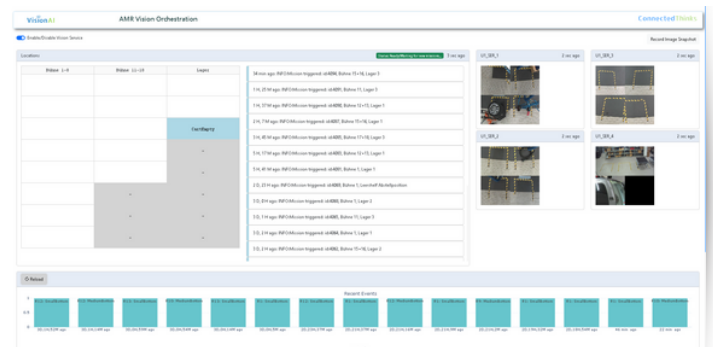
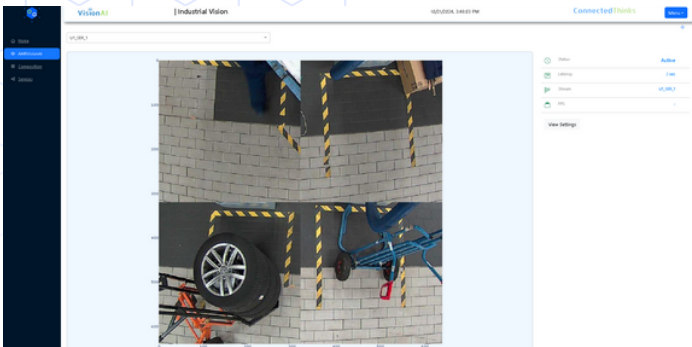
### Ease of Installation, Configuration, and Maintenance

- Ease of installation without major infrastructure changes
- Simplified integration with the AMR, ensuring quick deployment and transition to automated operations

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### Cost Savings

- Deploying multiple HMIs, along with the necessary sensors and software to monitor empty store locations, is expensive and not needed anymore
- This solution leverages existing infrastructure and Vision AI capabilities, resulting in significant cost savings



4

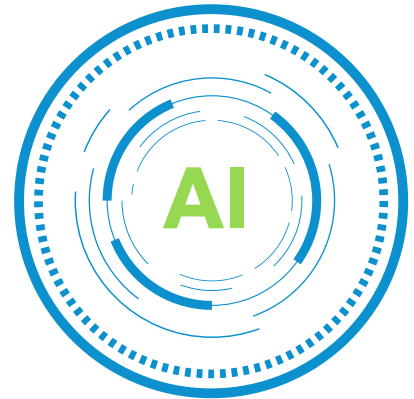
### Flexibility and Scalability

- Scalable Architecture: The solution scales effortlessly from a few cameras to hundreds, accommodating growing operational needs
- Centralized Monitoring: A centralized control system allows for the real-time monitoring and management of multiple camera feeds

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### Security and Privacy

- Vision AI system incorporates advanced encryption, security protocols, and authentication systems to ensure authorized access
- The system processes video/images in real-time. It does not store videos/images nor transmit them outside the private network, ensuring the highest levels of privacy and compliance are maintained



## SUMMARY

By integrating the ConnectedThinking® AMR orchestrator solution with Mir250 AMRs, Volkswagen Automobile Stuttgart has significantly improved its operational efficiency while achieving a return on investment in less than 6 months. This streamlined process reduces mechanics travel time and minimizes delays. The innovative approach taken by Volkswagen Automobile Stuttgart sets a benchmark for companies in the production, manufacturing, and intralogistics industry, showcasing the potential of combining vision AI and autonomous robotics to revolutionize operations. For more information, visit [ConnectedThinking Vision AI](https://www.connectedthinks.com/vision-ai).

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