

 mySCADA

Autonomous Logistics (AGV/AMR) in Automotive Industry

Customer:

Škoda Auto a.s.
Since 2024



Partner:

Servis Control
Since 2024



LONG-TERM PARTNERSHIP IN LOGISTICS DIGITALIZATION

Škoda Auto continuously invests in the automation and digitalization of both manufacturing and logistics processes. As part of this strategy, a project focused on deploying autonomous guided vehicles (AGVs) was launched, with ServisControl delivering the hardware solution and mySCADA & DataTalk providing the key software infrastructure.

Our solution ensures secure data collection, transmission, integration, and visualization from AGV vehicles, while also enabling their real-time operational control.

PROJECT OBJECTIVES

The main goals of the project were to:

- **automate internal logistics** and related production processes,
- **replace manual handling** using forklift trucks,
- obtain detailed operational data from logistics processes,
- **ensure secure data transmission** and integration into Škoda Auto IT systems,
- enable advanced analysis and **process optimization**.

The initial state was characterized by a low level of digitalization, with very limited data availability and no systematic way to evaluate process efficiency.

PROJECT SIZE AND SCOPE

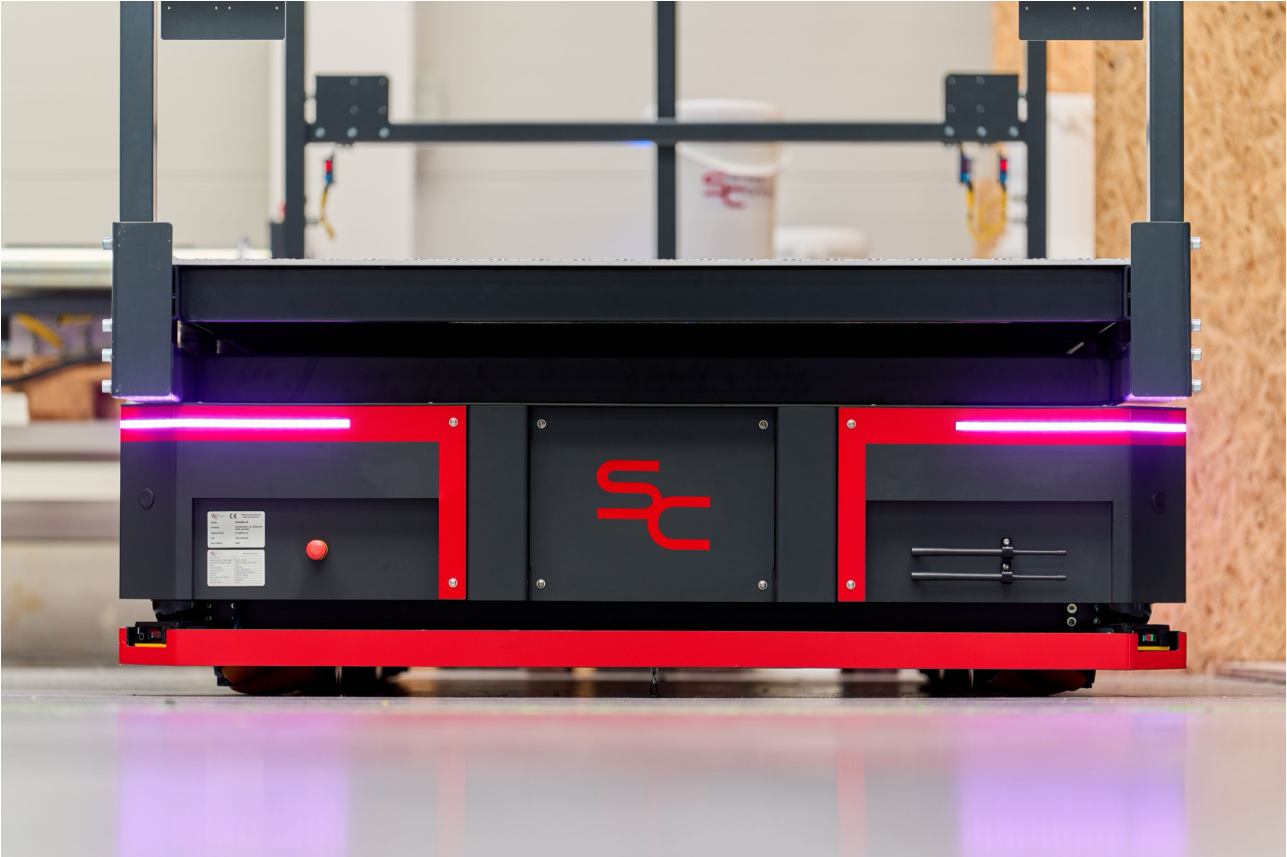
A total of **eleven RoboMec autonomous** vehicles are currently in operation, fully integrated into Škoda Auto's production and IT infrastructure and continuously working alongside human operators in shared spaces.

The **AGVs handle material transport** (pallets, car bodies, components) along predefined routes with high requirements for precision and safety.

DEPLOYMENT LOCATIONS

The solution is implemented across those Škoda production plants:

- Mladá Boleslav – main production plant and company headquarters
- Kvasiny – production of higher-class vehicles and SUVs

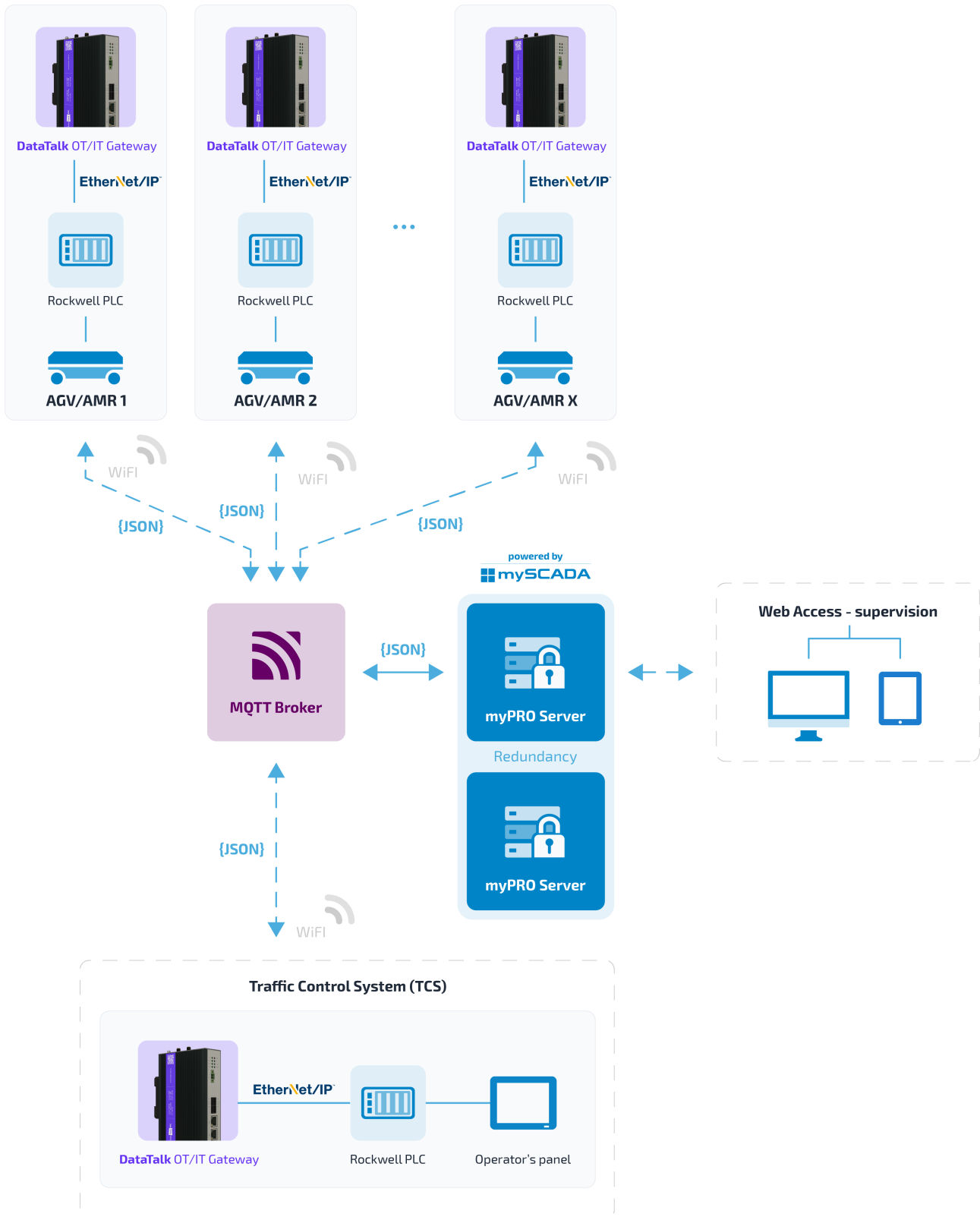


Picture 1 – AGV RoboMec III

TECHNOLOGY SOLUTION

The mySCADA and DataTalk platform serves as the central data and integration layer, **collecting vehicle telemetry and diagnostic data from PLCs** (in this case Rockwell Automation Safety Logix PLCs), **transmitting it securely** via the DataTalk OT/IT Gateway and MQTT, and distributing it **into two main systems**.

The TCS (Traffic Control System) handles AGV fleet control and basic operator visualization within Škoda Auto, while mySCADA provides **advanced real-time monitoring, remote web access, and full control and configuration of the vehicles**.



Picture 2 – System architecture diagram

The schema shows multiple AGVs connected through PLCs and gateways, sending data wirelessly to a central MQTT broker, which then routes the data to both the internal Traffic Control System (TCS) and the mySCADA server, enabling both operational control and high-level supervision via web interfaces.

VISUALIZATION AND CONTROL

For visualization and control of fleet of AGVs was used professional web based SCADA system from mySCADA Technologies concretely myPRO.

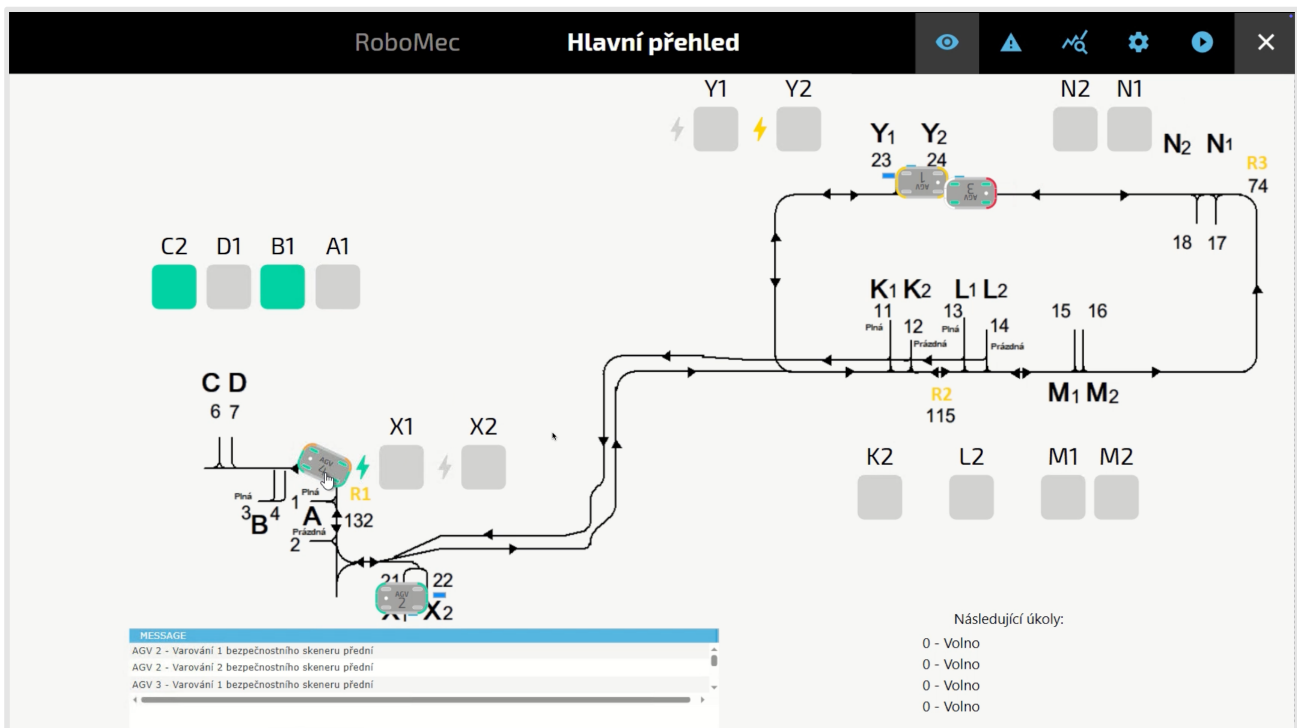
myPRO operates in a fully **redundant mode** to ensure continuous availability (24/7).

Visualization of AGVs position is placed on vector map along with key AGV parameters such as state, speed and battery state. Visualization is available to operators in field using tablets, or to any personnel connected to local Skoda IT network.

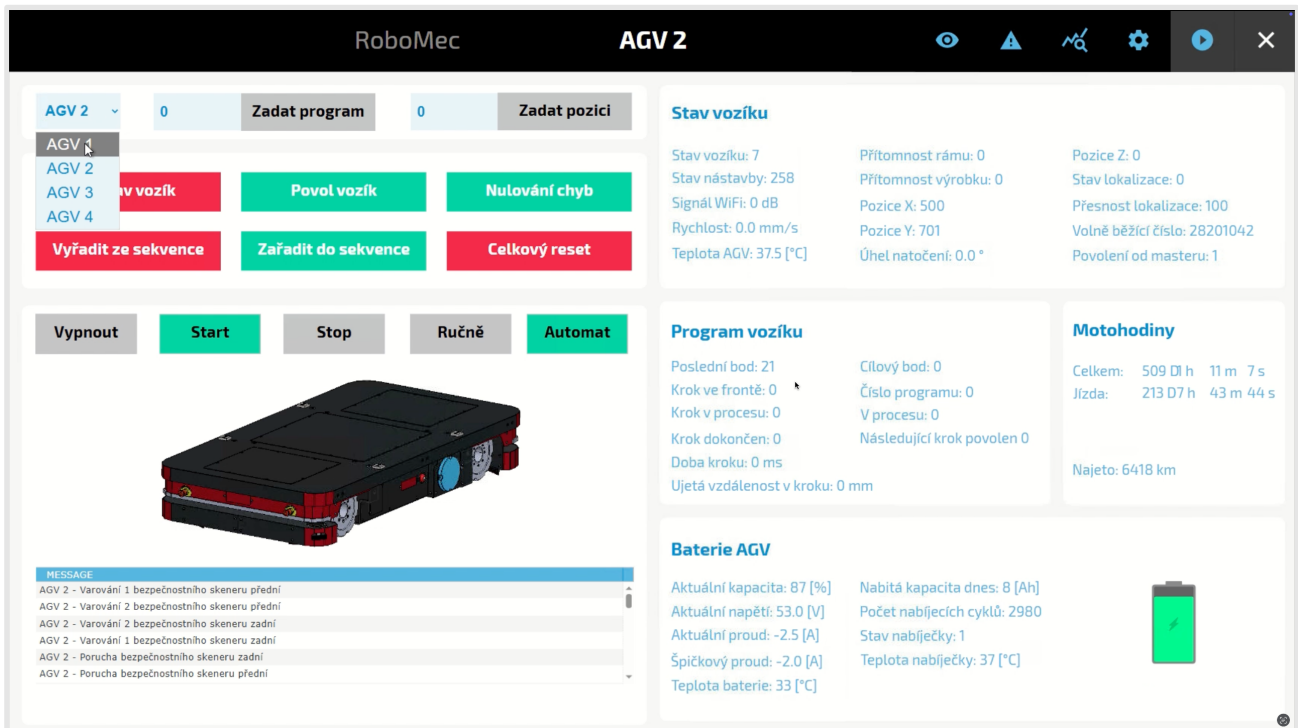
Aside of visualization:

- historical data storage for retrospective analysis
- alarm and event management
- detection of abnormal or critical states
- monitoring of logistics performance

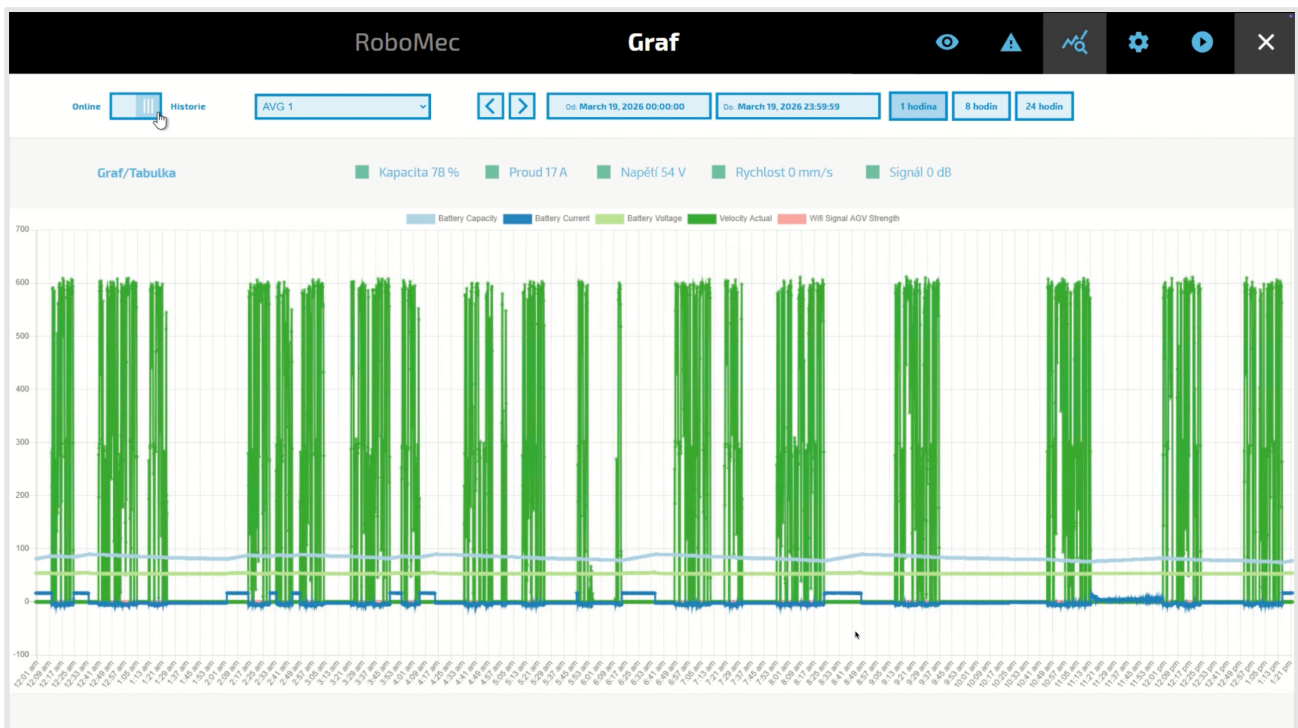
Standardized data enables further use in analytics and integration with higher-level systems.



Picture 3 – Overview of AGVs in the Škoda warehouse and their predefined routes



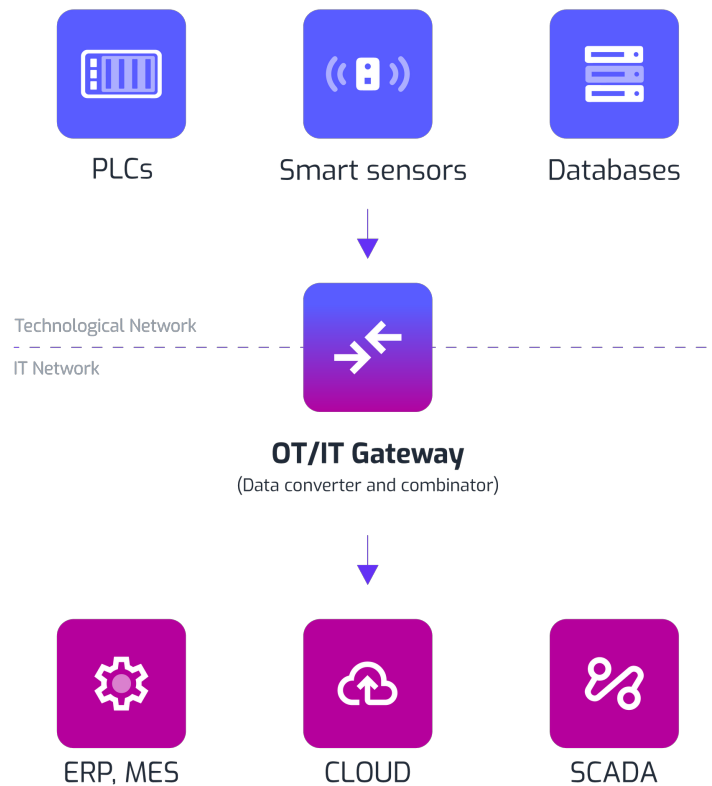
Picture 4 – Current status of the vehicle: selected program, battery level, and other operational information



Picture 5 – AGV vehicle parameters: battery capacity, voltage, speed, and other key metrics

SECURITY AND INTEGRATION

The solution uses a DataTalk OT/IT Gateway to create a **barrier between the OT and IT networks**. On the OT side, it reads and writes data from the SafetyLogix PLC. On the IT side, using a separate network adapter, it pushes the data to an MQTT broker over a secure connection.



The entire system meets strict security requirements:

- **secure data transmission** within the enterprise network,
- **integration into Škoda Auto's internal infrastructure,**
- **operation in environments shared with human workers,**
- strong emphasis on autonomous operation safety

KEY BENEFITS

- **Automation of logistics processes**
replacing manual handling with autonomous vehicles
- **Increased operational safety**
intelligent AGV navigation in constrained, human-shared spaces
- **Data availability and utilization**
previously unavailable logistics data is now fully accessible
- **Data standardization**
unified format for further processing and integration
- **Performance optimization**
ability to analyze efficiency, utilization, and bottlenecks
- **Data-driven decision making**
improved control over logistics operations

SUMMARY

This project represents a comprehensive autonomous logistics solution within an automotive manufacturing environment. The combination of AGV technology and the mySCADA and DataTalk software platform enables not only automation of physical processes but, more importantly, their full digitalization and data-driven management.

The result is increased efficiency, safety, and transparency of logistics operations within one of the most advanced manufacturing environments in Central Europe.