

Industrial AGV Application with CODESYS IPC and Battery Management System



Overview:

A Taiwanese company produces its own AGV application with an IPC and battery management system. The AGV utilizes communication technologies such as Wi-Fi, CANopen, and RS232/RS485. This technology is used for data storage and transmission via OPC UA to local HMI to facilitate efficient operations in industrial environments.

Challenges/Requirements:

- **Real-Time Communication:** Seamless communication between the AGV's Control IPC and peripheral devices is essential for optimal performance.
- **Integration Complexity:** Integrating multiple communication protocols and devices poses challenges in system configuration and maintenance.

Solution:

- The AMAX controller serves as the central control unit, leveraging its robust processing capabilities and real-time application based on the PLCopen IEC 61131-3 standard.
- CANopen communication for managing battery usage and monitoring battery health. Data is transmitted through Wi-Fi to the control room to manage all vehicle usage.
- OPC UA data is exchanged with the HMI and is shown on the screen.

Benefits:

- Easy modular plug-in application of function blocks in CODESYS makes the architecture more adaptable.
- Low latency for data transmission and large-scale data acquisition thanks to the EtherCAT analog module.

System Diagram

