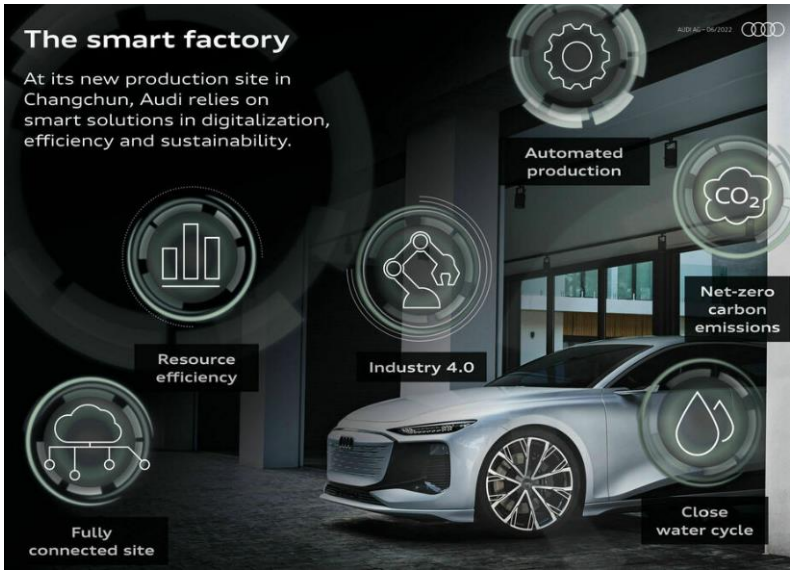
Case Study: Car Tracking and Distribution

Audi, Leading Car Manufacturer Implements RFID in largest EV Production Facility

Background

Audi FAW NEV Company has constructed a manufacturing facility in Changchun, China, dedicated to producing all-electric Audi models using the PPE Platform. This production site operates entirely on green energy, aiming to achieve net carbon-neutral production. Spanning across 350,000 square meters, the production buildings feature rooftop solar panels capable of generating 35 million kilowatt hours of electricity annually.



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Solution

Intellistride's latest RFID solution, based on Kathrein RFID hardware equipment, is designed to meet Audi's requirements to optimize every operational process. As a vehicle passes through an RFID reader, the system reads and transmits the vehicle transponder's ID number, along with directional information, to the backend system. Installed on each reader, is the Crosstalk software that interprets these events, filters out irrelevant data or errors, and forwards relevant information to the back-end IT systems.

Crosstalk's advanced software monitors the status of RFID hardware and read points. The RFID data capture occurs in all assembly production up to factory parking lots and beyond. When parking vehicles, drivers have the flexibility to use a handheld reader to read the vehicle's transponder and manually record or adjust the parking location.

At any given time, all information about parts and vehicle is recorded by the RFID system without human invention.

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Benefits of RFID Implementation

Improved Inventory Management:

Real-time Tracking:
RFID allows for real-time tracking of vehicles and components, enabling better inventory management and reducing the risk of stockouts or overstocking.

Accurate Data:
Automatic data capture reduces human error and ensures accurate inventory records.

Enhanced Supply Chain Visibility:

End-to-End Tracking: RFID provides end-to-end visibility of vehicles from the production line to the dealership, facilitating smoother operations and quicker response times to any issues.

Better Forecasting: Enhanced visibility helps in better demand forecasting and production planning.

Increased Efficiency:

Faster Processes: RFID speeds up various logistics processes, such as vehicle identification, sorting, and distribution, by automating data collection and reducing manual intervention.

Reduced Errors: Manual processes are prone to mistakes. RFID eliminates the need for manual scanning or data entry, minimizing errors in parts identification and vehicle assembly.

Streamlined Operations: Efficient handling of vehicles and parts reduces bottlenecks and improves overall workflow.

Enhanced Security:

Tamper-Proof: RFID tags can be designed to be tamper-proof, adding an additional layer of security to high-value vehicles and components.

Improved Customer Satisfaction:

Faster Deliveries: Enhanced efficiency and accurate inventory management lead to quicker deliveries, improving customer satisfaction.

Transparency: Customers can benefit from increased transparency regarding the status and location of their vehicles.

Implementation Strategy

Audi's implementation of RFID technology involves:

Tagging Vehicles and Components: Each vehicle and key component is equipped with an RFID tag that contains relevant information such as the vehicle identification number (VIN), production date, and specifications.

Installing RFID Equipment: Are installed at various points along the supply chain, including production lines, storage facilities, and distribution centres.

Integrating with Existing Systems: RFID technology is integrated with Audi's existing enterprise resource planning (
Training and Development: Audi invests in training its workforce to handle RFID technology and leverage its benefits fully.

Future

Audi's adoption of RFID technology sets a benchmark for the automotive industry, showcasing the potential for technological advancements to transform production, logistics and supply chain management.

As RFID technology continues to evolve, it is expected to offer even greater capabilities, such as enhanced data analytics and integration with other emerging technologies like the Internet of Things (IoT), Blockchain and Artificial Intelligence (A.I).