bransystems
Brilliant IT and Automation Solutions

Vehicle Tracking Solution

We offer an integrated solution that tracks the vehicle during production from the body shop, through to the paint shop, until final assembly, prior to wheel fitment (see Figure 2: Production Process).

We have developed, implemented and supported a plant-wide Vehicle Tracking Solution with RFID.

Figure 1: Overview Automotive Plant

Each vehicle is fitted with a read / write RFID tag to achieve the vehicle tracking. This RFID tag data is picked up at various strategic checkpoints situated throughout the plant. The Vehicles Unique Identification Data (UID) is stored on the RFID tag, along with key attributes required for production.

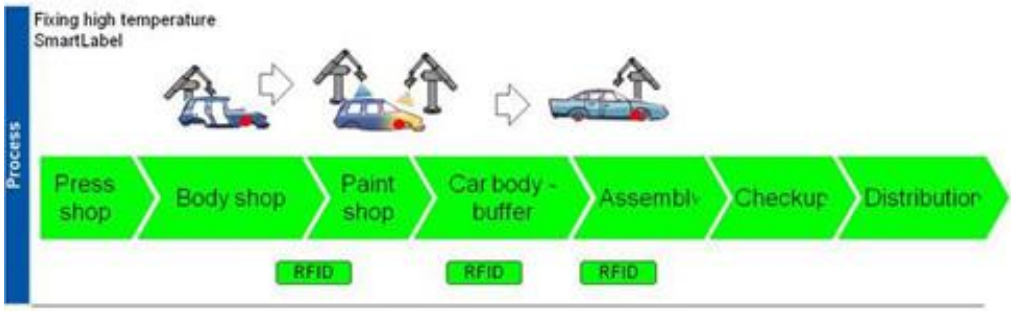

Figure 2: Production Process

The system feeds sub-assembly areas to promote JIT production and interfaces with robots and other plant systems to deliver real time, vehicle information to the shop floor. Lastly, it features full diagnostics and fault logging, including alerts via SMS / email. See Figure 3: System Layout

The function of the Tracking System is to provide vehicle specific information and attributes, from an Enterprise Resource Planning (ERP) system, to shop floor systems for production purposes, decision making and vehicle routing, and to provide vehicle movement back to the ERP.

The Tracking System solution will include a centralised Tracking Server Application, as well as Tracking Client Applications running on the individual checkpoint stations, providing interaction with the shop floor.

Tracking Server

The function of the Tracking Server is …

- Central and remote configuration of tracking points
- Status monitoring
- Error logging
- Centralised FIS (PMON) connectivity

TRACKING CLIENTS

The function of the tracking clients is to pick up the RFID tag data and interact with the production facilities, as well as feed the vehicle information (UID Number) back to the ERP. If the RFID tag is unreadable or damaged, there is an option to input this vehicle UID number by reading it off the tag, where it is etched on in human readable form. This manual reading can be achieved either via a camera input, or by an operator at the station.

There are three types of clients

- Facility / Marriage Checkpoint
- Standard Movement Checkpoint
- Decision Checkpoint
- Agent App to Interface to equipment (conveyors, robots etc) or other independent systems

By means of the Agent App (point 4 above), we are able to expand the network of checkpoints to pick up vehicle data from independent systems. This will provide greater granularity and visibility into the Work In Progress (WIP) in the plant.

Checkpoint stations can also be connected to multiple readers to get more read points under one station. As a standard, all checkpoint stations will have digital IO capabilities to pick up field sensors not on IO / Facilities TCPIP network, or as a direct means of interacting with the field devices and equipment.

Network Independence

The Tracking System is designed in such a way that it can operate in the absence of the ERP system. Backup data sources are created on the local database by means of Merge Replication, as well as Tracking Client-to-Tracking-Client data forwarding.

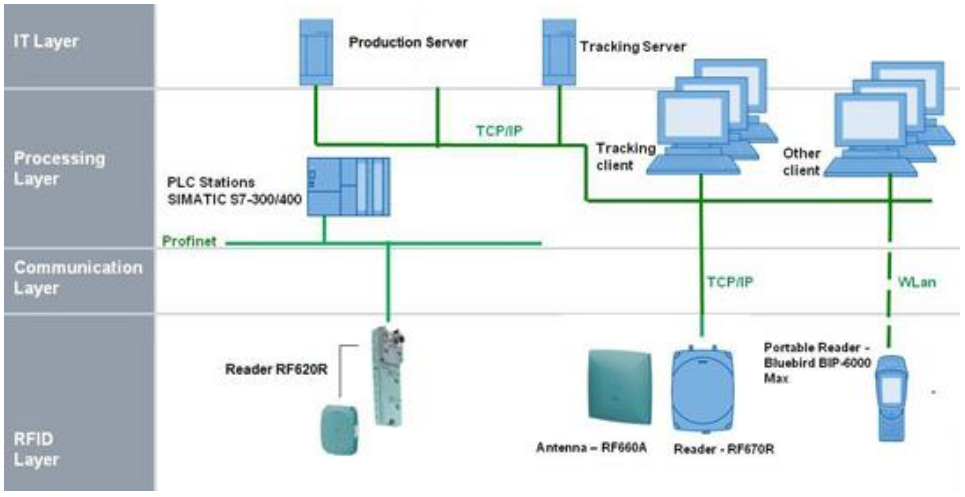

Figure 3: System Layout