



Vehicle Tracking in the Pre-delivery Process

The Challenge



VOLKSWAGEN is the largest producer of automobiles in Europe and the fourth-largest automobile manufacturer in the world. On June 1st 2000, the Autostadt (Auto-City) had its grand opening. This unique project allows customers to pick up their vehicle and see new trends in the automobile industry. Over 12,000 automobiles are available for display and customer pickup. All these vehicles must be prepared for delivery. This means washing, vacuuming, cleaning, and performing a thorough quality control. When everything is perfect, the car is placed in one of the 48-meter high glass towers for public viewing and delivery. VOLKSWAGEN wanted a solution that would **quickly locate the car** in the holding lot and **track its progress through pre-delivery activities**. All work must proceed in the shortest time possible and yet there can be no confusion as to the identity of an automobile.

The Solution

By using ILR[®]-enabled wireless technology, IDENDEC SOLUTIONS has optimized the workflow for the delivery of manufactured automobiles to the customer. All tasks involved in the delivery process are stored on an electronic routing slip (i.e. tag) temporarily attached to the vehicle. Each time the vehicle moves through an ILR[®]-enabled process station, the worker immediately knows its location and its current status—automatically.



Here's how it works

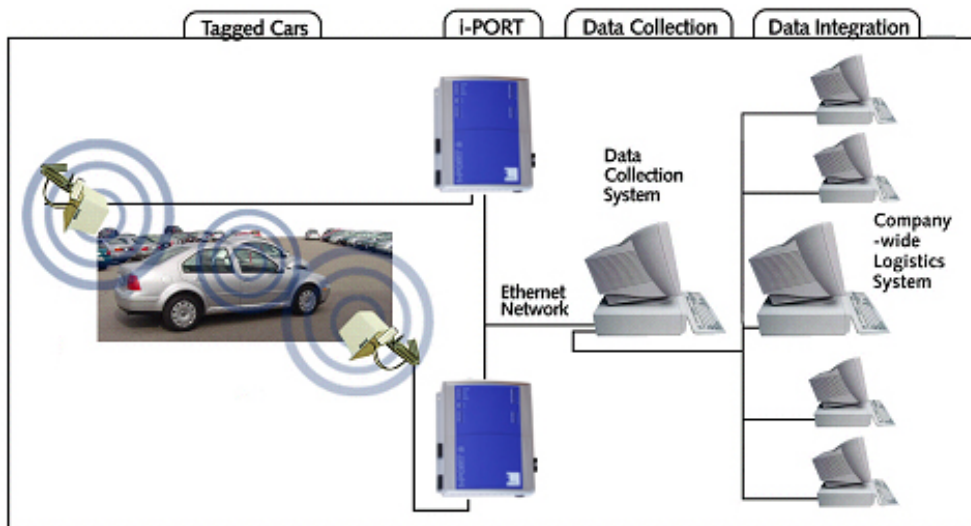
- Start**
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When a car leaves the production area, an electronic routing slip that includes the vehicle ID and pre-delivery tasks is written to the tag. The tag is placed on the rear-view mirror and the car is moved to a holding parking lot.
- Parking Lot**
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An ILR[®]-enabled van equipped with a laptop drives around the parking lot. When the van approaches the desired car, the laptop emits a beep and the tag inside the car begins to blink.
- Car wash**
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The car is then brought to an ILR[®]-enabled cleaning station; it is automatically detected entering and leaving this area and its status is automatically updated to the tag.
- Temporary Storage**
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Next, the car is taken to an ILR[®]-enabled storage facility; it is automatically detected entering the facility and its status is automatically updated to the tag.
- Autostadt Check-In**
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When the car is ready for delivery, it is brought to an ILR[®]-enabled gate where the dimensions of the car's wheelbase are read from the tag. Using this information, the tracks on the transporting platform are automatically adjusted and the gate is opened. The ILR[®]-enabled platform is then automatically activated and takes the car to the car towers.
- Delivery**
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When a customer arrives to pick up his car, the tag is removed and re-used.

Benefits:

- Reduction of vehicle delivery time by rapidly locating the target vehicle - a worker can typically retrieve four times as many vehicles in the same period of time.
- Improved process efficiencies by automatically creating an electronic routing slip for each automobile and automatically updating its status as delivery tasks are completed.
- Improved speed when re-work is needed - the required repairs are tracked electronically and automatically updated when the work is completed.
- Improved quality control by real-time physical tracking of vehicle throughout the delivery process.
- Improved customer service by delivering the right car to the right customer - every time.

The Technology:

ILR[®] hardware components include a data carrier: i-Q8 Tag, read/write station: i-PORT, Antenna and ILR[®]-enabled Handheld Terminal (HHT). The data collection software uses a distributed architecture for seamless integration with existing enterprise applications.



i-Q Tag: The ILR[®] active tag (data carrier) is designed to be temporarily mounted in the vehicle and allows for clear, reliable identification. Individual data is stored in the tag’s memory and there is a built-in LED, providing optical signals as soon as the vehicle comes within range. In addition, the tags feature automatic communication, anti-collision and memory capacities of up to 32 KB.

i-PORT: This Windows-CE–based read/write station provides read/write capabilities for tags and ensures seamless integration with many applications. Using standard TCP/IP protocols, this intelligent device can communicate to a host system either through Ethernet or Wireless network. Various configurations are available to provide scalability and interoperability.

Antenna: Connected to the i-PORT, the antenna allows for contactless communication with the tags with a range of up to 30 meters. The antenna provides high performance and flexibility, with the identification area easily adjusted to suit a particular environment.

ILR[®]-enabled Handheld: This portable Windows CE device allows you to read and write data to tags remotely. Data transfer on demand to a host system by TCP/IP protocols ensures maximum flexibility.

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www.identecsolutions.com

Europe:

Austria: IDENDEC SOLUTIONS AG, Millennium Park 2, 6890 Lustenau / AUSTRIA Tel: +43 (0)5577 87387-0 Fax: +43 (0)5577 87387-15

Germany: IDENDEC SOLUTIONS Deutschland GmbH, Hertzstr. 10, 69469 Weinheim / GERMANY Tel.: +49 (0)6201 9957-0 Fax: +49 (0)6201 9957-99

North America:

USA: IDENDEC SOLUTIONS INC., Liberty Plaza II, 5057 Keller Springs Rd. Suite 375, Addison, Texas 75001 Tel: +1(972) 535 4144 Fax: +1(469) 424 0404