TECHNO VIETNAM

Prominent Vietnamese company pilot module for a RFID-enabled VEHICLE TRACKING SYSTEM

Automated security, parking and access control system

Accurate identification of authorized vehicles

Automated entry/exit logging and report generation

Efficient vehicle movement prevents stoppage, traffic congestion and time wastage at the gates

TECHNOLOGY

Solution:
EPC Gen2 compliant access control and vehicle tracking solution

Tag Type:
Parka™ UHF Passive

Reader/Antenna:
Xtenna™
Xtenna Proximity™

Method:
Multiple Tracking via Integrated Reader/Antenna modules

Integration Platform:
 RFID Middleware:
  Xtenna™ WebToolkit
  Xtenna™ Studio
 Application: Essen RFID's
  Vehicle Tracking System
 Database: SQL Server 2005 Exp. ed.

Tag Manufacturer/Supplier:
Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:
Essen RFID, with US based module

Systems Integrator:
Essen RFID

INSIDE:
Key Requirements
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Implementation
Working
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For further details contact:

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Xtenna™
Integrated RFID Antenna/Reader

CASE STUDY

KEY REQUIREMENTS:

Techno Vietnam was using a manual system of vehicle access control in its premises, wherein security personnel at the gate would manually verify vehicle entry authorization, note down the entry and exit timings in a register and manually operate the boom barrier at the gates. This process would take up a lot of time and result in long vehicle queues and delays while entering and leaving the premises. The company therefore required an automated system of vehicle access control that would efficiently manage this process, ensure secure vehicle authentication, prevent wastage of time and reduce manpower required for this purpose.

Main challenges:
- Restricting unauthorized vehicles from entering the premises.
- Tracking and logging in the entry and exit of each vehicle through the gate.
- Automated operation of boom barrier at the gate for authorized vehicles without requiring human intervention.

SOLUTION:

Essen RFID offered an effective solution for efficiently tracking vehicles entering and exiting the company premises, through its RFID-based Vehicle Tracking System. This system deploys RFID tags and readers to identify and authenticate vehicles entering and leaving the premises.

IMPLEMENTATION:

A PARKA™ RFID tag is issued to each authorized vehicle and affixed to its windshield. Each tag is registered into the database for the respective vehicle, using a Xtenna Proximity™ reader.

Metal Rim   Template

Car Windshield

Driver
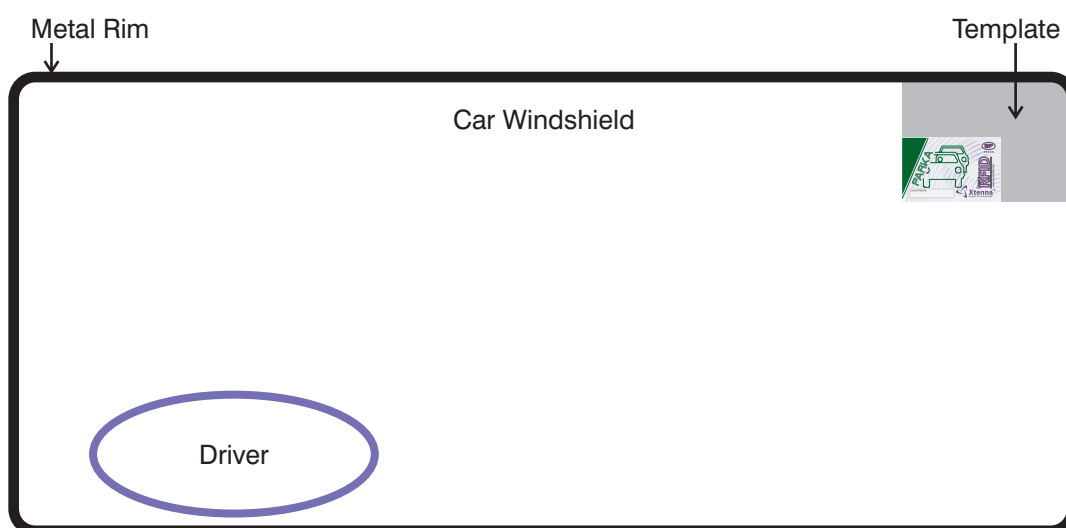
CASE STUDY

A Xtenna™ integrated reader-antenna is mounted at the entry/exit gate. The boom-barrier at the gate is fitted with a trigger switch that is automatically activated by the vehicle tracking system.


← Trigger Switch
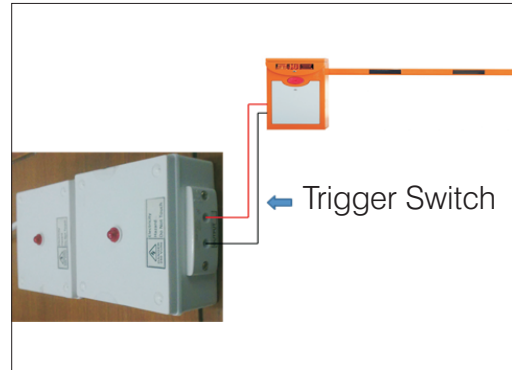
The system uses SQL Server as the back-end database while the front-end application deploys .NET technology.

WORKING:

The system is designed to restrict the entry of unauthorized vehicles and lifting the boom barrier to only allow the entry of authorized vehicles.

A vehicle entering the company premises approaches the IN gate. The Xtenna™ antenna-reader mounted at the IN gate reads the PARKA™ tag affixed to the windshield of the car and sends the tag details to the server. The Vehicle Tracking System checks if the vehicle is registered in the database. If it finds a registered vehicle, it sends a command to the trigger switch that controls the boom barrier. The boom barrier is lifted and the vehicle is allowed to enter. The vehicle's entry time is logged into the system.
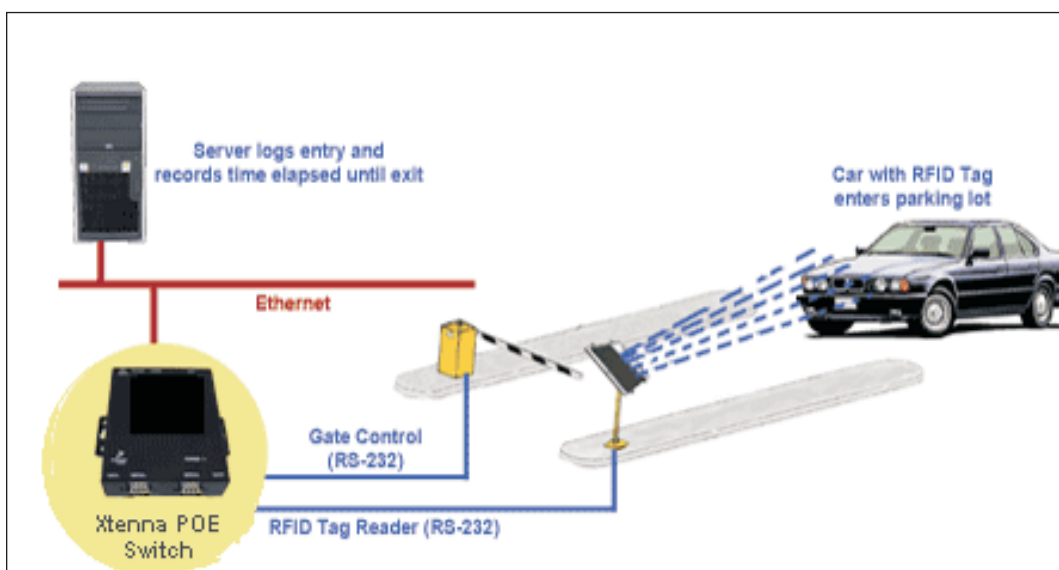
CASE STUDY

At the OUT gate, the Xtenna™ mounted there reads the tag of the vehicle exiting the premises and logs the exit time into the system.

The security administrator can view detailed reports of entry and exit timings of each vehicle as well as the current status of vehicles within the premises.

Application Process Flow:

1. **Location Setting:** The installed locations and IP addresses of all antenna-readers mounted on the premises are saved into the Vehicle Tracking System. Also entered into the system is the COM port of the trigger switch that controls the boom barrier.

2. **Department Details:** The various departments within the company are entered into the system.

CASE STUDY

3. **Employee Details:** This contains all relevant details of vehicle-using employees such as name, employee code, department, etc.

4. **Vehicle Details:** Vehicle details are saved into the system and mapped to their respective owner's name.
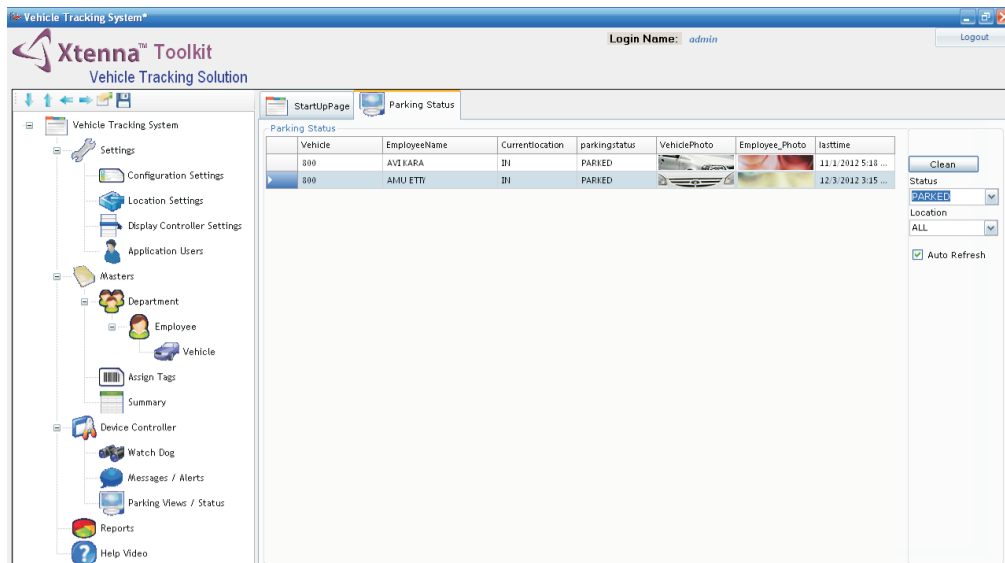
CASE STUDY

5. **Assign Tags:** A PARKA™ RFID vehicle tag is issued to each vehicle-owning employee. The tag is assigned to his/her vehicle in the database using Xtenna Proximity™ and then affixed to the windshield of that vehicle. Each vehicle authorized to enter the premises now has its own unique vehicle identification tag that is automatically read by the antenna-readers mounted at the entry/exit gates.
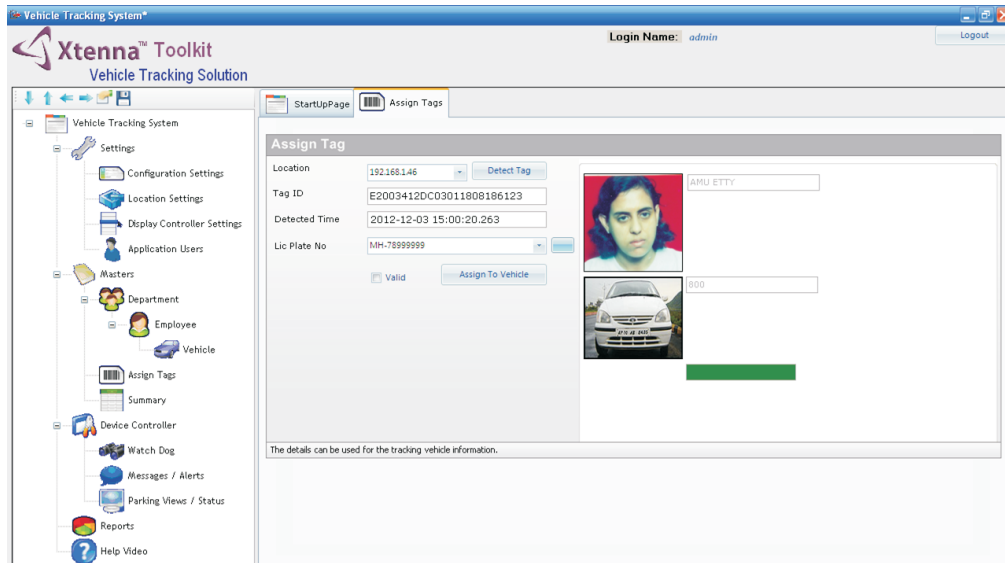
6. **Parking Status:** This dashboard displays the status and details of vehicles currently parked within the company's premises.

7. **Reports:** The system has centralized reporting features that display details of all registered vehicles, vehicle owners, date-wise entry/exit reports and summaries of parked vehicles.

CASE STUDY

BENEFITS:

- Accurate vehicle identification at entry and resultant access through boom barrier for authorized vehicles only.
- Secure, automated functioning with RFID technology.
- Automated boom barrier operation through server-controlled trigger switch without need for manual intervention or labour.
- Minimization of manual entry work.
- Automated tallying of vehicle Entry and Exit leads to exit without delay.
- Automated logging of vehicle access into server enables quick vehicle movement, preventing stoppage, congestion and time wastage at the gates.
- Prevention of entry for untagged vehicles.
- Automated centralized report generation enables ready record reference.

LINKS:

Hardware:

Xtenna™

Xtenna Proximity™

Tags:

PARKA™

Software:

Xtenna WebToolkit™

Xtenna Studio™

Reference Example:

http://www.essenrfid.com/Mailer/accessparking-flash-demo.pdf