



Major sugar manufacturer deploys RFID-based VEHICLE MANAGEMENT SYSTEM

Regulation and streamlining of traffic flow of commercial
vehicles carrying farm produce

Quick vehicle turnover and automated receipts

Reduction in manpower deployment

Greatly reduces scope for human error



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TECHNOLOGY

Solution:

EPC Gen2 compliant
vehicle tracking solution

Tag Type:

Parka™ UHF Passive
Metallica™ 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 Management System

Database:

SQL Server 2005 Exp. ed.
Oracle

Tag Manufacturer/Supplier:

Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:

Essen RFID, with US based module

Systems Integrator:

Essen RFID

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CASE STUDY

KEY REQUIREMENTS:

Shree Renuka Sugars Ltd. is one of the largest sugar producers in the world. It has many sugar mills at various locations in India with a very high total crushing capacity. Each of these sugar mills has a continuous flow of vehicles every day during the harvest season, of farmers carrying fresh sugarcane for crushing in the mill. The company uses a cumbersome manual system for keeping a record of all these vehicles.

Main challenges in implementation:

- Present manual system requires one person at the gate for keeping a record of vehicles entering along with the number of trailers attached to that vehicle. One more person is required for issuing a token to the vehicle for crushing the sugarcane, and yet another person is needed to issue a receipt to the vehicle.
- Due to heavy traffic at the crushing mill, the manual system is extremely time-consuming and inefficient.
- There is scope for many human interventional errors to occur in a manual system that is hard-pressed for time.
- Difficulties occur in payment distribution due to the varied number of trailers attached to the vehicles.

SOLUTION:

Essen RFID offered a RFID based Vehicle Management System as an automated solution. Its Xtenna™ antenna-readers track incoming vehicles which have RFID tags affixed on them, automatically make an entry of each vehicle with its trailers and accordingly generate receipts.

IMPLEMENTATION:

The mill has a single Entry/Exit gate that requires two Xtenna™ antenna-readers mounted on them. Each truck is issued a PARKA™ tag that is affixed to its side window. METALLICA™ tags are affixed to the sides of tractors and trailers. Xtenna Proximity™ is used for registering the tag data into the database.

WORKING:

Various types of vehicle are used to transport harvested sugarcane from the farms to the mill, such as trucks, tractors and trailers. RFID tags are affixed to each vehicle. The Vehicle Management System follows three initial steps:

- Master entry for vehicle owner details in the database
- Master entry for vehicle details in the database
- Assigning tags to the vehicles (trucks, tractors, trailers etc.)



CASE STUDY

Process Flow:

1. All details of the vehicle and its owner are entered in the database using the Vehicle Management System software. The Xtenna Proximity™ is used to register the RFID tags to each vehicle. Xtenna™ antenna-readers are mounted at the gates.
2. When a registered vehicle such as a truck or single tractor is detected at the Entry gate, Xtenna™ reads the tag and checks whether the tag is registered or not. Only a registered tag entry logs into the database. If trailers are attached to a tractor, then the trailer count is also stored in the database. A receipt is then automatically generated.
3. The automated RFID based Vehicle Management System does not require a token to be issued and the vehicle owner does not have to wait in line for a manual entry to be made in the records.



Traffic is managed efficiently and a receipt generated automatically to facilitate easy payment distribution. The system administrator checks the automated report and gets a list of all vehicles with their trailer count.

4. After transporting the sugarcane to the crushing mill, the vehicle exits from the gate. The Xtenna™ antenna-reader at the gate reads the tag and automatically makes an outgoing entry for the vehicle.
5. System reports provide details such as vehicles, owners, current vehicles in the mill premises, number of vehicles entering or exiting, and the trailer count. These reports make vehicle management easy as there is automated generation of data. The administrator can ensure that vehicle queue is maintained and payment is accurately distributed.



CASE STUDY

BENEFITS:

- Reduction in manpower deployment.
- Time saving process.
- Efficient management of traffic and automated generation of slip without having to issue a token to each vehicle, eliminating the token giving process.
- Reduction in manual entry work eases maintenance, finding of records and payment distribution.
- Automated reports are instantly available providing correct vehicle and trailer information.
- Automated system greatly reduces the scope for human error.
- Accurate and automatic generation of receipts for each vehicle.

LINKS:

Hardware:



Tags:



Software:



Reference Example:

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