AUTOMATIC VEHICLE IDENTIFICATION SYSTEM

INTRODUCTION

The automatic vehicle tracking or identification facility delivers the flexibility, scalability, and responsiveness that today's organizations need. It provides accurate, up-to-minute information, high- speed communication, and powerful analysis features required to make better decisions faster. The major potential comes from the much acclaimed no line of sight and simultaneous reading properties of RFID.

It is now widely recognized that real – time vehicle information will revolutionize the control and logistical organization with significant vehicle fleets. In a global marketplace where productivity is crucial to success, vehicle fleet operators use vehicle management systems as a formidable tool to drive down costs and increase the value of their service.

PAIN AREAS

Operational Inefficiencies: Being in the manufacturing and transportation business, availability of vehicles and operational efficiency are crucial areas. Due to manual processes, the companies are finding it difficult to determine the exact cycle for a vehicle carrying goods from the factory to a particular destination and carrying raw material as a return load back to the factory. With a mission to improve operational efficiency in terms of cycle-time monitoring and fleet management, the companies are ready to adopt technologies that take care of vehicle tracking.

Also, earlier, no knowledge of status of the consignment was available, which was leading to deviations in vehicle requirement planning.
The Key issues in the current scenario are
• Higher error possibilities
• Permit slip is not identified with the vehicle's Identity
• Higher measured weight than actual
• Possibility of double weighing
• Possibility of two admission/ permit numbers
• Manual entry leads to higher possibility of human error

HOW THE TECHNOLOGY WORKS:

Radio Frequency Identification (RFID) devices consist of tags and readers that assist in the tracking of goods and vehicles. Tags are the devices that give identity to the vehicle and work like a wireless name plate. It transmits it identity to readers which are placed at strategic locations like entry/exit of a premise, highway, weighing bridge, parking lots and others. Readers pick up these signals and transmit them to the centralized data servers from where the information can be viewed or utilized any where.
These readers can also trigger the other peripheral devices like an access control mechanism-boom barrier to operate as per the business logic. For. e.g on identifying a known vehicle, a reader can signal the boom barrier to open and allow the vehicle automatically. The read-range

of the reader varies from 1m to 30 m depending upon the technology (Passive Vs Active) in place.

The use of RFID technology also necessitates the purchase and utilization of either fixed or hand held readers which can help the guard to quickly access the vehicle information by bringing the device near the vehicle.

ATRA SOLUTION DETAILS

| HARDWARE	METHOD OF USE	BENEFITS
Passive Vehicle Tag	Vehicles are affixed with RFID tags Read-range: 4-5m	Helps in giving identification to vehicles.
Fixed Reader- UHF	Installed at strategic locations like entry/ exit	Picks up tag signals and transmit them to central server
Active vehicle Tag	Vehicles are affixed with RFID tags Read-range: 10-30m	Helps in giving identification to vehicles and tracking them over longer range.
Fixed Reader- Active	Installed at strategic locations	Picks up tag signals over long range and transmit them to central server

BENEFITS OF VEHICLE TRACKING

1. Tracking vehicles within the plant: The use of RFID in a vehicle assembly line ensures optimum operation, enhanced efficiency and eliminates the possibility of fraud and theft. Strategically positioned fixed RFID readers with multiple tags reading capability trace the newly finished cars as they leave the product line. In this way vehicles can be tracked throughout the plant.

2. **Prevents manipulation of data:** The security issues RFID tags to the trucks that are coming inside the premises. It is attached to the truck that carries the cane load and identification is done throughout its journey.

3. **Better Fleet Management:** RFID has enabled better fleet management. Now the transporters have a fix on reasons behind vehicular downtime. They know how long it takes to load raw materials and they can measure the performance of drivers. Transporters can plan availability of trucks based on the latest tracking data and make optimum use of their fleets.

4. **Parking Lot Access Control:** We also provide parking barrier drop-arm control systems to control authorized access into and out of the parking area. RFID based access control systems ensures that only authorized vehicles can get into and get out of the parking area. Parking barrier arms automatically lifts to let the vehicle pass through on success identification of the vehicle RFID tag.

This can be done by fixing RFID tag to the windscreen of the vehicle. When the vehicle comes in range of the reader, the reader reads the card ID and authenticates the same. If ID is authenticated the relay for moving the boom barrier is fired and access to the parking lot is enabled.

In this way there is no need for any guard to be monitoring the exit and entry of vehicles to the parking lot. The vehicles will be logged automatically and a total report of the usage of the parking lot can be generated.

The RFID reader can also trigger surveillance cameras or video recorders whenever a vehicle enters or exits the controlled area.

HOW IT WILL WORK ON OUR FOUNDRY?
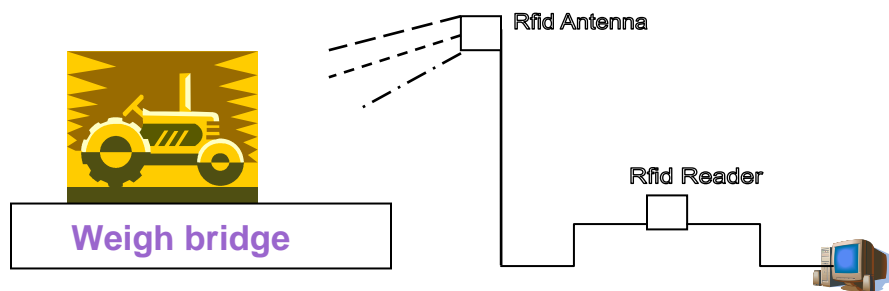
RFID Flow Diagram

The RFID antenna will be coupled to the PC and once the truck is over the weigh bridge the data is captured from the tag and this is passed on to the PC for processing. This can reduce your fraud activities drastically.

RFID tags can be affixed to automobiles for activating hands-free access to communities and parking lots.

- Gives automatic notification when a Vehicle enter the weighing bridge
- Each access can be recorded in the RFID reader or host computer's database to maintain a history of access activities and administer billing of daily, weekly, or monthly fees.
- Eliminates manual record keeping, thereby increasing accuracy and staff productivity.

HOW OUR APPLICATION WILL WORK?

1) Every vehicle will be affixed with RF Tags. Those Tags are configured for that, particular vehicle through our software.
2) In our software you can able to assign a Tag for a particular vehicle, and if you want to, reassign that Tag for another vehicle, that also you can do.
3) Near by the weighing Bridge, we will be keeping an antenna as a receiver, to communicate those Tags to the RF Reader.
4) RF Reader will sense those Tags, from our application user can able to get data like vehicle number, Supplier Details and more.
5) With this solution, you can maintain error free Business across all domains where it can be applicable.

WHAT WE NEED?

1) We need a computer with minimum of 1GB RAM, 2.0GHz Processor, Windows XP OS.

For further Details please feel free to contact us

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