LONG RANGE RFID IN PETROCHEMICAL ENVIRONMENTS

The petrochemical industry is faced with increasing plant security and registration requirements. Many industrial workplaces contain, or have activities that produce, explosive or potentially explosive atmospheres. Application of identification technologies for these industries needs to meet the harsh and stringent intrinsically safe requirements of these oil, gas, mining, chemical and dry product industries.

Nedap Identification Systems, specialist in long range vehicle and driver identification, has developed RFID products with ATEX (intrinsically safe) certification for the oil, gas, chemical, mining and dry product industries. These technologies ensure safe and reliable workflow operations with automatic identification in the extremely difficult and rugged environment of the petrochemical industry.

"Depending on authorization profile, based on personal access rights, the drivers will get access"

ATEX certification

Innovative RFID systems are installed in places where operations create or release flammable gases, mists, vapors or fine organic dusts such as oil refineries, chemical plants, mines, cement factories, cattle food factories, incinerators, grain processors, floor or wood production plants and numerous other installations.

With decades of experience with RFID technology Nedap develops, produces and tests all its products and systems in-house. For years they have established vehicle and people identification installations worldwide in many different industries like petrochemicals, in order to create controlled and easy access to secured petrochemical industrial sites. These companies also need a reliable identification, tracking and control system to ensure that only authorized trucks are weighed, correctly loaded and administrated in a track record.

Industrial sites with explosive or potentially explosive atmospheres must meet to strict requirements. The ATEX directives describe what equipment and work environment is allowed in an environment with an explosive atmosphere. Nedap's extensive experience with RFID in the oil, gas, chemical, mining and dry product industries and close collaboration with these industries has contributed to a portfolio of products which meet the highest regulations, certifications and standards.

"Highly secured industrial sites need reliable, controlled and easy access for only authorized trucks"

Optimize the workflow of vehicles

Vehicle identification helps to speed up the traffic throughput and reduce the congestion around barriers, loading docks, weighing platforms and refueling areas making navigation safer and easier. Controlling this with the manual operation of a regular card system causes congestion in the traffic flow especially during peak hours resulting in costly delays. Products to optimize the workflow of vehicles in these

industries saves time, prevents manual input mistakes and offers safer navigation with trucks for drivers who can concentrate in the hectic traffic.

A hands free workflow of the truck loading and weighing process is realized based on factory programmed tags, permanently installed on trucks, trailers and silo's. Drivers do not need to present a badge while navigating in the explosive areas. Manual input of codes or workflow identification is not necessary.

Terminal Management Systems

The typical Terminal Management Systems (TMS) for oil, gas, chemical, mining and dry product industries are designed to provide bulk plant operators to operate their facility at peak efficiency. TMS software is scaled to address the management and reporting needs unique to the trans-loading environment and provides comprehensive tracking of all transactions and events occurring in the loading environment.

Weight scale functions in TMS offer comprehensive management and reporting features aligned with weight based operations. Safety features include maximum weight and volume validation that prevents a driver from loading more than the maximum allowed. These preset values are stored in the database which is aligned with the unique ID's of the RFID tags on the trailers and silos.

Identify both truck and driver

Handled incorrectly; dangerous goods and explosives can endanger people, property and the environment. To prevent this, laws and regulations have been developed for the safe handling and transport of these products. A license to drive bulk dangerous goods vehicles and explosive vehicles has to ensure that drivers are fit, competent and responsible without creating risk to the community.

The Nedap system differentiates itself with the unique driver based vehicle identification concept. A Booster tag simultaneously identifies both truck and driver and allows verification of the validity of the dangerous goods driver license in the TMS.

"A unique driver based vehicle identification concept for different heavy industrial situations"

Applications for large-scale chemicals manufacturers Nedap RFID products with ATEX certification are deployed world-wide at many industry-leading companies where explosive atmosphere is a risk. All Nedap Identification Systems products support the industry interfacing standards and are easy to implement to TMS.

Many different large-scale chemicals manufacturers have been applying vehicle identification products to complete satisfaction. The identification, tracking and control system is installed to ensure that only authorized trucks are weighed, correctly loaded and administrated in a monitored sequence. Nedap's products help to speed up traffic and reduce congestion around the refineries loading area.

Main gates of the refineries are equipped with readers and tags to register truck and driver combinations. All employees have a card for access control and attendance registration. Depending on authorization profile, based on personal access rights, the drivers will get access to the loading areas of the terminal. Their existing personnel badge is read over long range in combination with a Booster. Drivers no longer need to leave the vehicle to present the badge.

"SENSIT is a wireless sensor system which detects free spaces at parking areas"

Smart truck parking solutions

In addition to vehicle and people identification in various heavy industrial situations, Nedap also develops and produces solutions for vehicle detection and vehicle management. Modern truck parking, access points and gates are equipped with a multitude of access technology. For example a wireless vehicle detection system which acts as a smart truck parking solution for detecting free spaces at parking spots along highways or at loading docks of warehouses. Today all access technology can be controlled by a single management controller. A solution which offers remote control, so traffic officers can manage vehicle entrances to truck parks and oil and gas transportation areas.