White paper

How automated gate access control positively influences the vehicle throughput and security level at industrial plants.

How gate access control positively influences the vehicle throughput and security level at industrial plants.

Industrial processes are at the core of the worldwide economy. This part of our economy is featured by the production and processing of material goods, often characterized by a high level of mechanization and automation. In this type of environment, vehicles come and go on a frequent basis, often in large volumes.

Suboptimal management of traffic flows to- and on-premise ultimately leads to reduced efficiency and other side effects such as safety hazards. Proper management of vehicles at the gate plays a vital role as it serves as the gatekeeper to the industrial site itself. In terms of traffic throughput, an important challenge for industrial plants is: **How to maintain a certain level of security, while thousands of people have to enter and exit in limited time slots?**

Especially at industrial sites, a site-specific security design is required due to the combination of in- and outflow of different user groups and their vehicles, different security levels, management and regulation of dangerous and high-value goods, and the large site area. The customized security design starts at the entrance gates and is extended to the inner area including buildings.

Within this white paper, Nedap Identification Systems shares their vision on the importance of using automatic vehicle (and driver) identification to maximize gate access control efficiency. There will be explained how these industrial sites can increase the vehicle (and driver) throughput and how they can control the different aspects that make a personalized, secured gate access design.

Contents

Characteristics of an industrial site.

An industrial site typically comprises of a large, versatile terrain with several buildings or areas intended for the production, processing, and storage of goods and materials. They are often characterized by different types of areas such as several warehouses, offices, weighing and loading areas, enormous distribution centers, and multiple entries.

Securing an industrial site
Whether it is hazardous substances or vehicles driving in and out with valuable, theft-sensitive goods, there are many reasons and regulations for securing an industrial site. Depending on the needs of a particular site, different security methods are applicable.

Gate entry scenarios
Regarding the gate entry, you often see at least one security layer with a perimeter fence. In some cases, a second fence is included to create an airlock. These two scenarios are most common. Besides the difference in security needs, there are typically multiple entries that serve different types of users and allow easy access to specific areas of the site. Usually manned gatehouses are included to manage the entry process of vehicles and people onto the premises. This is also due to the large number of vehicles entering the site such as incidental users.

Peak time zones
Manually handling large volumes of vehicles at the entry and exit at peak time zones during the day often causes congestion. Not only at the gates, but also on nearby public roads, which endangers road safety.

The four main user groups entering an industrial site.

Regarding gate access at industrial sites, at least four different user groups must be taken into account when designing the gate security layout as they all have different behavior and needs.

Employees
This group enters the grounds on a daily basis. Most of the industrial sites have many employees who work in shifts. They enter the site within the same time period and leave within one time period at the end of their shift. At these moments, high peak traffic flows arise at the vehicle gates. Being it's their first experience while starting their workday, a seamless gate access process positively influences their state of mind.

Contractors
These professionals provide services to industrial sites for a certain period of time. They do not have an employment contract, which means that other rules and rights relative to employees need to be applied. Regarding gate access, it is common that contractors have different access rights. For example, a contractor cannot enter at certain times while employees can. Or contractors who deliver certain types of materials or goods can enter areas where office employees are not allowed to go. Besides, contractors' compliance with safety regulations could be important criteria before granting access for a specific period.

Visitors
Visitors are people who visit the industrial site, both by appointment or without an appointment. In both cases a welcoming experience is desirable but on the other hand a high-security level is crucial. To stay in control with regards to who can enter the site, oftentimes an identity check at the gatehouse is performed when entering the first security line.

Carriers
Many visits to an industrial environment will be to deliver or collect goods or materials. Many of these carriers will enter the site on a frequent basis and need entry onto different zones and specific times to avoid congestion at the (un)loading and weighing points.

How to control the vehicle throughput?

The fluctuation of different users and the amount of vehicles entering during the day makes controlling the vehicle throughput very relevant. Who enters when? How to ensure a spread upon arrival if possible? To prevent congestion and create a seamless entry process, different aspects have to be taken in mind with the gate access design.

1. Planning the vehicle throughput
A variety of solutions can be applied in the gate access design of an industrial site. First of all, one can think of a plan for vehicles to enter the industrial site in different time slots. Different time slots can be scheduled for vehicles entering the industrial site to spread traffic. This is a great option for sites' largest user group, which are typically employees.

2. Increase number of lanes
Another option is to increase the number of entry/exit lanes. While this solution fits the needs of preventing congestion and seamless gate access, it is often a spatial challenge to create more gates for entry and exit. To control the different lanes, many readers (and therefore a bigger investment) are needed.

3. Technology
Industrial sites are typically dealing with a lot of traffic going in and out, but at the same time these are often pre-announced visits. To create an optimal gate design, technology is often used at gates to prevent using an unnecessarily large space for the entries and exits. Everyone can drive in at any time, without spending many hours of time planning and congestion. By using technology, allocation of specific vehicle gates to specific user groups can also help to ensure a seamless traffic flow. It's technology that simplifies the process and optimizes the experience of the drivers.

What is the importance of (automated) gate access control for industrial sites?

The importance of automatic vehicle identification is to maximize the traffic throughput for authorized vehicles and drivers. Industrial sites typically have a lot of traffic entering and leaving the site daily. Congestion needs to be minimized around the controlled entrances.

Automatic Vehicle Identification
Automatic Vehicle Identification can automate the vehicle access process at the gate and create faster traffic throughput resulting in less congestion. Next to vehicle access control, registration of all onsite vehicles is of key importance due to health and safety reasons.

Security requirements and infrastructure
As described, industrial sites need a personal security design as they all have different layouts and needs. Therefore it all starts with a risk assessment to assess the current situation and provide insights for the requirements. The following questions are at the center of such a risk assessment: What user groups visit the site and for which purpose? What regulation does the site need to comply with? What are the risks? What items or which areas are vulnerable? And what knowledge and resources are available to fulfill the security needs? In the end, the solution depends on the security requirements and the current infrastructure.

What are the advantages of automatic vehicle access solutions?

There are several advantages of automating gate access in contrast to access control where manual handlings are needed. These can be summarized as below:

1. High traffic throughput
Where manual handlings are needed or manned gatehouses are used, the throughput will be slowed down. This can cause traffic jams on surrounding public roads which can lead to dangerous situations. Besides that, it often leads to hold-ups and other unpleasant entry experiences for the different user groups. Automatic vehicle identification leads to time savings during check-in procedures.

2. Health safety
Nowadays, the COVID-19 pandemic is a factor to consider in many decisions. In terms of gate access control, touchless long-range identification solutions ensure an optimal safety level. For large industrial sites, occupational health and safety are important and sites need to comply with this regulation. Registration of all vehicles on site is often one of these requirements.

3. Eliminating human errors
Automating the vehicle entry and exit process reduces the chance of human errors. Besides human errors, manual handling and traditional card readers slow down the entry and exit process, which often leads to congestion. In some cases, gatehouses are indispensable for checking non-pre-registered visitors.

What are the advantages of automatic vehicle access solutions?

4. Minimize costs of operations
Security officers may be desirable in specific cases to ensure the security level. Automating entry and exit processes ensure that they can focus more on other tasks. Overall, fewer people are needed to secure the entrance, which saves costs. To conclude, digitization of vehicle access and logistic operations ensures higher efficiency, less maintenance, less support, and therefore lower costs.

5. Data
Automatic vehicle identification gives operators the ability to capture data of vehicles and motorists entering and leaving the plant. This data can be applied for planning security officers at peak moments for non registered visitors and continue the optimization of the gate access process for optimal vehicle throughput.

✦ nedap
www.nedapidentification.com

What are automated gate access solutions?

We often see that industrial sites have specific wishes that are very diverse. This depends on the different user groups, the current infrastructure, the industry regulations, and the security demands. Furthermore, we often see a combination of different solutions that are applied within one industrial site. The most important aspect of gate access control within industrial sites is that it needs to be designed for the specific location.

Combination of Long-range RFID, ANPR, and Multi-Technology readers
Nedap offers a broad portfolio of automatic vehicle identification readers. Within this portfolio, different solutions are available, such as long-range RFID, ANPR, and Multi-Technology readers. Therefore often a combination of different solutions is applied to create an optimal and highly accurate process. Those solutions are specifically designed to facilitate easy access onto the site for each user group and ensure the optimal performance in highly secured applications, under harsh environmental conditions or for vehicle applications where vehicles need to be granted access temporarily or incidentally.

Integrating a security access control platform
Besides the choice of technology and products, integration needs to be made with the security access control system. This system is often already in use within the existing access control system used throughout the site. Nedap Identification Systems makes it possible to integrate with almost every platform. This results in an all-in-one security solution, which simplifies everyday usage and makes it cost-efficient.

Questions?

Get in contact with our global oriented Business Developement Team!
sales@nedapidentification.com

Nedap Identificion Systems offers solutions that can facilitate more frictionless vehicle entry and exit process in order to prevent congestion in the surrounding area. This fits a broader trend of companies putting more emphasis on hospitality, worker engagement and vistor experience.