CASE STUDY

INDUSTRIAL SHIELDS

IMPROVE THE CONTROL, EFFICIENCY AND SAFETY OF YOUR FLEET, AND YOUR CUSTOMERS' SATISFACTION

Thanks to fleet management and its benefits at various levels, many companies have implemented this kind of solution.

The geolocation of vehicles, the kilometres they travel, the downtime, etc. are variables that have a direct impact on costs and quality of the service offered.

The use of technologies based on open code applied to this type of solutions, allows you the flexibility and adaptability that other standard market products cannot offer.

SUMMARY

Evolution and adaptation

Our customer's vehicle fleet has grown significantly over the last decade. The company deals with the **processing, marketing and distribution of frozen foods** and has an important commercial network. Over the past few years, several needs to be addressed have appeared. On the one hand, due to the business strategy; on the other hand, because it is necessary to follow the regulations about the transport of this type of goods regarding to the cold chain; and last but not least, because the control of working hours is required by law.

In order to maintain the competitive level reached by the company, **the quality of the product must be guaranteed** and, at the same time, **fleet management must be improved** by taking advantage of the possibilities offered by new technology.

In order not to lose competitiveness, it is necessary to face up to the behaviours that have been changing in recent times, such as **loading and unloading in large logistics platforms**, **accessing to pedestrian areas** where goods are unloaded, among others.

SOLUTION

After analysing the necessary requirements and which Arduino PLC best suits the number of inputs, outputs and accessories, a standard product is defined to be installed in the whole fleet. At the same time, communications, data to be saved in local mode, and data (most of them) to be sent through GPRS to the data centre for analysis and decision making in real time must be prepared.

The Ardbox Analog GPRS with GPS from 20IOs family meets the customer's needs thanks to its quantity and types of inputs and outputs, and also allows a growth in input and output needs that may arise in the future, without having to change the installed hardware.

The priority in this project is the GPS positioning and the temperature of the goods. From the data returned by the GPS, speeds, routes, types of driving, stops, and other relevant information can be analysed to improve productivity, save fuel and improve efficiency.

The company's competitiveness increases entirely thanks to a small investment, while maintaining its commitment to maximum quality with customers in a sector as sensitive as the food industry.

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FINAL OUTCOME

After installation in the whole fleet, the first equipment is prepared in two kinds of vehicles with very different types of routes.

- **A very local route with a small size vehicle** (3500Kgs), which makes many stops, and many openings and closings of the trailer.
- Another route in a **large vehicle** that makes only **two stops in two large distribution centres**, but making a much longer route by contrast.

Their behaviour is very different but, in both cases, there are patterns that allow improvements in the routes, to a greater or lesser extent. It is also observed that **the cold chain is not threatened in any case**, despite the fact that the test is carried out at the end of summer, when temperatures may not be very severe but, equally, the margin of frigidity is still very wide.

The installation of different sensors and antennas is carried out very quickly and does not affect the trailer or tractor in any way. The power supply of the Arduino PLC is also easily solved, as this type of vehicle has an extra installation that facilitates this work.

One of the existing doubts was the one related to the GPS tracking, but it is not a problem because the accuracy and quantity of the data are more than enough. The software selected by the company manages quickly the data received and shows control panels adapted to the different needs defined.

Having control of the vehicles also facilitates communication with the logistics centres to ensure that the planned schedules can be met. Due to the size of some of these facilities, it is increasingly necessary to schedule the arrival, so a tracking system is crucial to avoid stops and loss of time of vehicles and drivers in these loading-unloading platforms.

Thanks to the installation of the drivers with GPRS/GSM and GPS, the customer has achieved the points below:

- Improving the safety of drivers
- Optimising vehicle consumption
- Improving the safety of vehicles
- Complementing the records of the working day
- Savings on insurance costs (some companies offer discounts of up to 30-35 % for vehicles equipped with tracking systems)
- Real-time route changes to avoid accidents, road works or congestion.

On the other hand, customers also benefit from these improvements as they see reduced delivery times and always receive deliveries on time.
One of the improvements envisaged from the possibilities of the system is to share with customers the real-time information of the vehicles and the temperature of the load.

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