



# CASE STUDY

## INDUSTRIAL SHIELDS

### CONTROL OF SONIC BARRIERS FOR ENVIRONMENTAL PROTECTION OF BIRDS

Every year, thousands of birds are killed by colliding with wind turbine blades; a figure that is expected to rise as wind energy continues to develop.

With the help of an Industrial Shields PLC, bird collisions with wind farm generators can be prevented. With the remote programming of a SCADA system, the automatic switching on and off of sonic bird barriers can be managed to protect the lives of these animals.

## CHALLENGE

According to a study by the **US Fish and Wildlife Service**, wind power generation by turbines or wind turbines result in the death of **140,000 to 500,000** birds annually.

Although the magnitude of the figures must be interpreted, this issue has become an ongoing problem, as seemingly small mortality rates can be fatal for endangered species.

It is therefore important to plan, develop and monitor wind energy projects in order to minimise bird deaths and thus ensure the continuity of the species.

With the aim of safeguarding bird populations, the company **ATS Panama** has asked us to **improve an already proven sonic barrier design**. Our client wanted to control the sonic barriers installed in the wind farm using open source technology: using a single PLC with the information and recording of the operating hours, ATS Panama wanted to remotely manage the monitoring of the whole process.

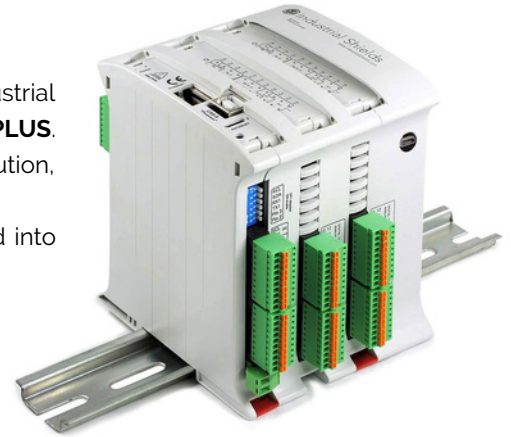


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## SOLUTION

The solution suggested by Industrial Shields consists of the installation of the industrial controller **M-DUINO PLC Arduino Ethernet 38AR I/Os Analog / Digital / Relay PLUS**. The installation of this PLC provides the customer with an easily integrated solution, since:

- using a **variety of inputs and outputs**, the controller can be easily integrated into an existing system;
- it is a **scalable system** and can be expanded without becoming obsolete.



## IMPLEMENTATION

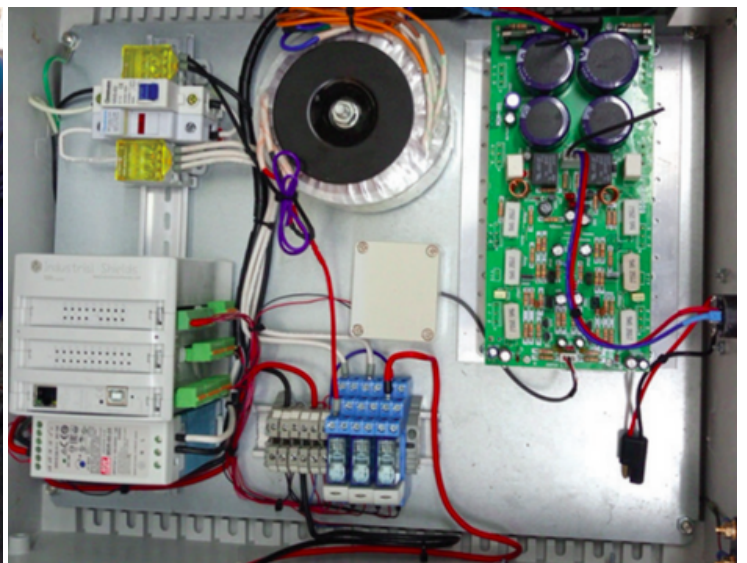
ATS Panama has proceed to integrate the Industrial Shields PLC in order to manage the **automatic switch-on of the barriers** according to the schedules established by the environmental authorities. As these schedules vary according to the time of year, the controller has been programmed taking this variable into account.

In addition, the barriers can be switched on remotely from the customer's **SCADA** system if required, without the need for on-site activation.

In addition, the customer decided to **store within a removable  $\mu$ SD** memory a log with:

- the operating hours and
- the most important operating parameters of the implemented system.

Thanks to this application, authorities will be able to audit the proper functioning of the equipment.



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## BENEFITS



### Resource optimisation

No turbine shutdowns are necessary because the mortality rate is under control thanks to the sonic bird barriers.



### Remote management

Users can remotely manage the monitoring of the entire process with a single PLC.



### Monitoring and control

Thanks to the storage of data on a removable memory, it is possible to audit the proper functioning of the equipment.

## WHY INDUSTRIAL SHIELDS?

Industrial Shields won the project and beat its main competitors thanks to the key factors below:



**Open solution.** No licence fees.



**Modular solution:** Product specifications can be scalable in the future.



**24/7 technical support:** Our team is available 24/7 via phone, mail or WhatsApp.



Equipment designed and manufactured for **industrial use** at a **lower price** than competitive products.