CASE STUDY

INDUSTRIAL SHIELDS

MONITORING A WEATHER STATION IN MEXICO

This project is installed on Valle del Yaqui by Red de Estaciones Meteorológicas del Distrito de Riego del Río Yaqui in Mexico and it was developed, designed and installed by Ing. Juan Carlos Raygoza, Ciudad Obregon, Sonora, Mexico.

Using this installation allow to the meteorologist to know remotely the important weather parameters of this place. Also allow them to configure their station in order to actuate and add some modifications to the station.

SUMMARY

This project consist on a weather station with the objective of display sensor data on a web site and also allow this system to be configured remotely.

OBJECTIVE

- The customer needs an autonomous weather station that could be monitorized in order to get the data in an easy way. It has to be easy to replicate across the area and allow the system to setup remotely.

WHAT WE DO?

- Our customer was looking for a PLC solution that could be easily integrated with the sensors and that was also easy to program. The free cost of the programming platform, was also a definitive incentive, together with the flexibility of the programming itself.

CASE STUDY

BACKGROUND

The client had experience in well-known brands, but also knowledge and experience in the use of Arduino. That was what allowed to raise the project of the weather station with a broader vision, incorporating to the project the Industrial PLCs based on Arduino.

FINAL SOLUTION (HARDWARE)

- On this project Industrial Shields PLC's have the function to get the data acquisition from different ADCON weather sensors as temperature, humidity, solar radiation, wind speed, barometric pressure and rain meter. Then transmit this data to a intermediate communication Telnet server. Also there is installed an SD card to store local data, an RTC (real time clock) to get the real time, some wireless communication systems, security cameras and alarms. All of these devices are controlled by an M-Duino 42.
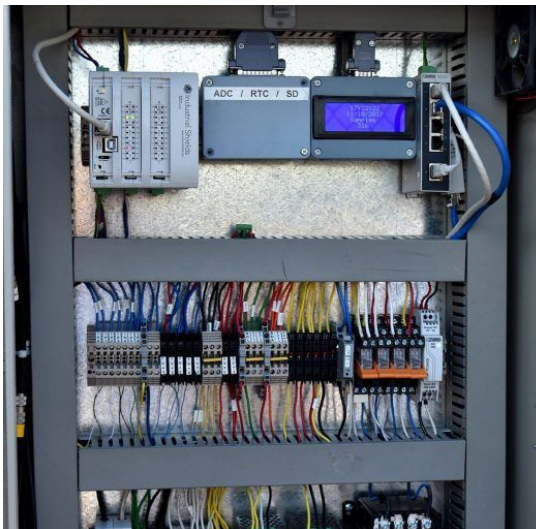
FINAL SOLUTION (SOFTWARE)

- The PLC program was developed with Arduino IDE. The intermediate software between the web site and the PLC is a Telnet server. This Telnet server has a database, some REST service and finally the web site using Angular 4 to show the data on MetApp (weather station web site). Some of these configurations can be configured by remote control using the Telnet platform.

Valores promedio en el Valle del Yaqui

Temperatura: **16.03 ℃**	Horas Frío Acum. (Ciclo): **41.92 Hrs.**	Vel/Dir Viento: **10.05 Km/hr	236.02 °N**
Humedad Relativa: **71.21 %**	Precipitación Acum. (Ciclo): **5.22 mm**	Ráfagas de Viento: **12.16 Km/hr**
Radiación Solar: **155.95 W/㎡**	Presión Barométrica: **771.67 mmHg**	Punto de Rocío: **10.75 ℃**

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