CASE STUDY

INDUSTRIAL SHIELDS

CONTROL OF PUBLIC SPACES (LORA)

Knowing the flow of people who enter in public spaces, like big squares, can be useful to know in advance the number of people who will assist at public events or demostrations. In order to anticipate, we have to analyze the previous data and take advantage of it.

The anticipation consists in knowing, for example, how many police officers or ambulances will be needed for an event. It will also let us know people's trends and preferences; for example, which events will be the most crowded.

SUMMARY

Why have we thought about this application?

Nowadays, most of our customers are interested in the analysis of Big Data, because this fact can provide them a lot of information and let them know the environment better, take better decisions and have agility in internal management.

Basically, Big Data analysis consists of building models from observable patterns in large amounts of data. Models offer a better visualization of relational variables, making it much easier to extract useful information.

CASE STUDY

GOALS

The aim of this project is to create a system which can collect the information from several sensors situated in the different accesses of a square and store it in data packages (registers). Due to the big amount of information, we need to transmit cyclically those registers in order to be sure that we have stored them in a safe way.

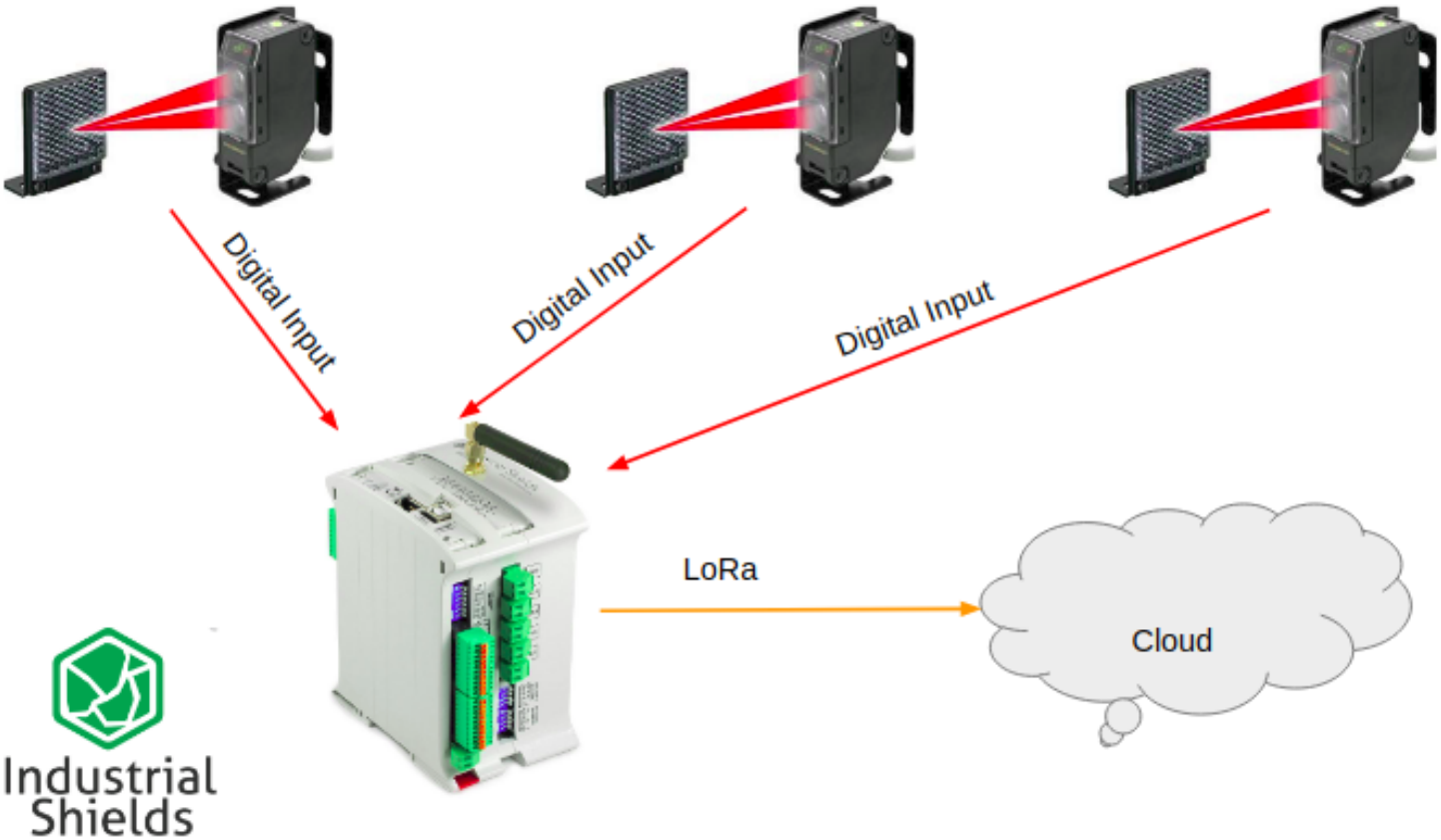
CONCLUSION (HARDWARE)

To achieve our goal, let's design the structure of the system. We have thought in a simplified model because the main idea will be easier to understand and, starting from this point, all our customers will be able to develop it for their specific applications.

Firstly, we have chosen an Arduino based PLC with LoRa communication: MDUINO PLC ARDUINO ETHERNET & LoRa 21 I/Os ANALOG/DIGITAL PLUS. This will be the brain of this system.
With this device, we can collect the information from the sensors and send it by LoRa to the cloud. The software used to program this PLC is Arduino IDE, an open source platform totally free.

To be able to detect the passage of people, we will install several photo-electric sensors which will return us a high voltage level. Our PLC will interpret this pulse and will increase the counter (+1). This counter will be our register and it will be sent to the cloud to another general register.

In the following picture, you can see clearly the system structure.



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