



# CASE STUDY

INDUSTRIAL SHIELDS



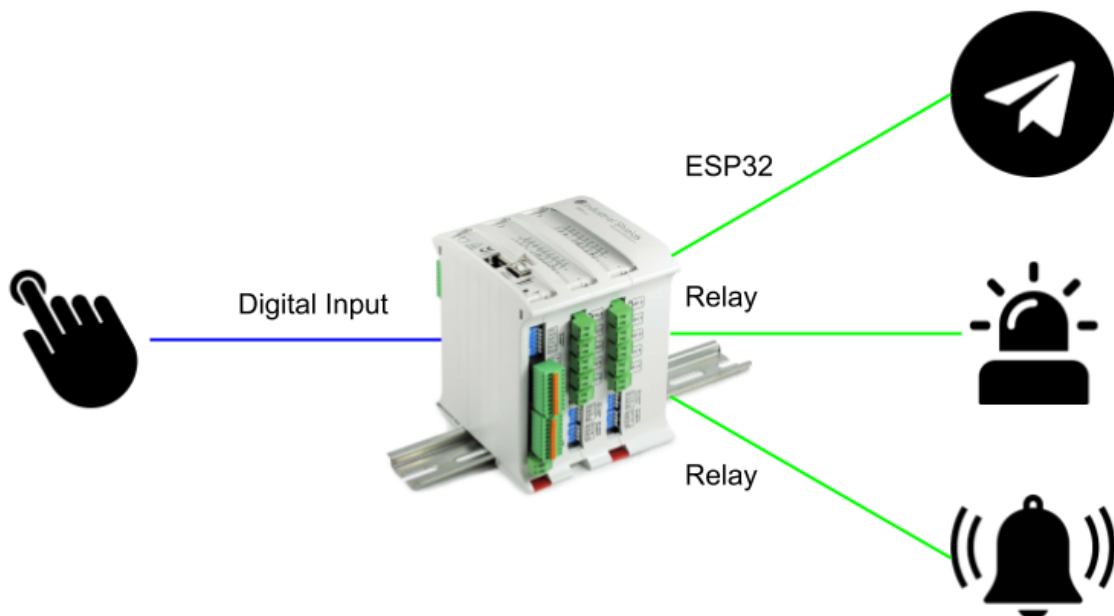
## HOSPITAL ROOM ALARM SYSTEM

### INTRODUCTION

The aim of this Case Study is to show you a way to activate a hospital alarm and communicate the emergency to the nurse team using a Telegram Bot.

### CASE

The idea is to activate the alarm using a push button at patient disposal. Once the button is pushed the M-Duino will send a message to a Telegram Bot and will activate two outputs: an audible alarm and a visible alarm.

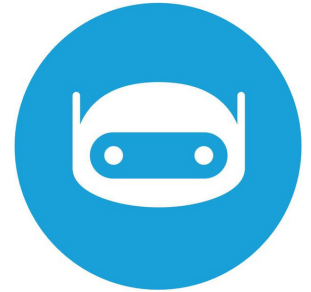


# CASE STUDY

## TELEGRAM BOT

In Telegram you can create a Bot. Bot is the programmable interface of Telegram. You can make different services like share information to a N number of users, and that's what we want, to send an emergency message to the nurse team.

For that, all the nurse team have to install the Telegram Message App to their smartphones. Otherwise they wouldn't have acces to the Bot and wouldn't be able to receive the alarm messages.



## COMMUNICATION WITH TELEGRAM

In Arduino you have available the UniversalTelegramBot library that offers you some tools to communicate with Telegram.

When you create a Bot, it returns a token like: **XXXXXXXXXX : Array of Numbers and Letters**. Where **X** are digits from 0 to 9. You have to create a client that will connect to the Bot. This token allows you to link the client with the Telegram Bot.

## ALARM



When the button is pushed, the **Audible** alarm is activated so a nurse nearby to the patient can hear. The alarm isn't deactivated until someone pushes the button again.



The **Visible** alarm is activated at the same time that the audible alarm. However, even if the audible alarm is deactivated, the visible alarm is still active for a certain time, \*

\*According to Hospital Regulations the visible alarm has to be kept active even if the audible is deactivated.