

# Requirements for building Monitoring Stations

## Introduction

The chosen supplier will get the original design files and the machine files to make and assemble the Monitoring Stations. So they will not be requested to be familiar with the sensors as they will get the specifications to assemble them. For this reason, the supply of the monitoring stations is open not only to hardware manufacturers/providers (although previous experience in this field is of course a plus) but also to other fabrication experts (e.g. Fablabs). Candidates might also add some (artistic) input for the casing of the Monitoring Station.

Requirements are divided into two categories: hardware that should be present in the supplier premises and skills that should be possessed by their personnel.

Candidates should also add a link or a short description of previous related projects and activities.

## Hardware

Below are the recommended hardware that the candidate should own AND be able to operate:

1. Big milling machine (process 2D and 3D milling)
2. Small milling machine for PCB production (or similar process, for example chemical etching)
3. Laser cutter (process engrave and cut)
4. Vinyl cutter
5. 3D printer (preferably able to print ABS)
6. Embroidery (optional)

## Skills

Required skills are the following:

1. Assembling electric circuits (soldering THT and SMD)
2. Testing electric circuits (multimeter, preferably also oscilloscope)
3. Embedded programming workflow (load source code on microcontrollers and microprocessors)

Optional skills that will be positively evaluated are the following:

1. Experience with sound measuring and sensors
2. Experience with proximity measuring and sensors
3. Experience with traffic measuring and sensors
4. Experience with Arduino, and thus also its programming
5. Experience with Raspberry Pi
6. Experience with WiFi modules like the ESP
7. Any experience in environmental monitoring, especially:
  - a. Calibrating
  - b. Availability of precision instruments or controlled sources to verify measured values
  - c. Weather-resistant casing
8. Experience with LoraWan
9. Customization of design and production process of the Monitoring Stations

## Others

Please list any other knowhow or previous projects/experience you think could be relevant for MUV project.

For any arising doubt, please contact Fundació i2CAT [barcelona.muv2020@i2cat.net](mailto:barcelona.muv2020@i2cat.net)