Capteur de CO2

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Python

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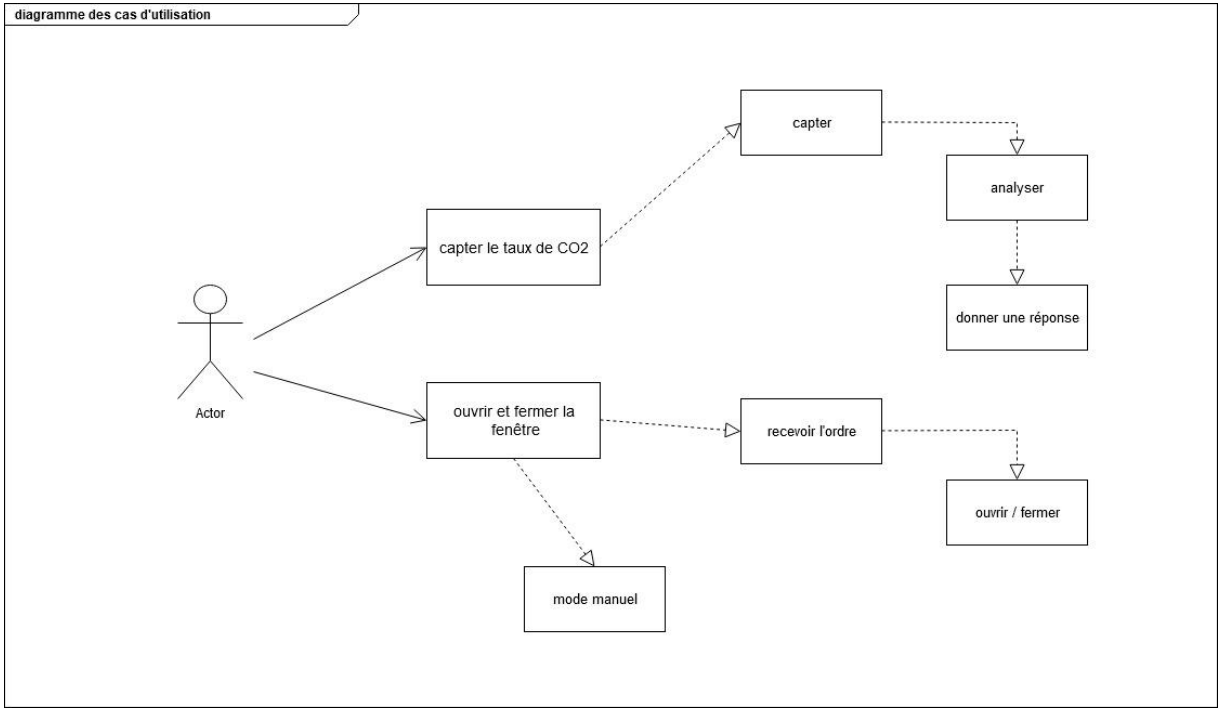
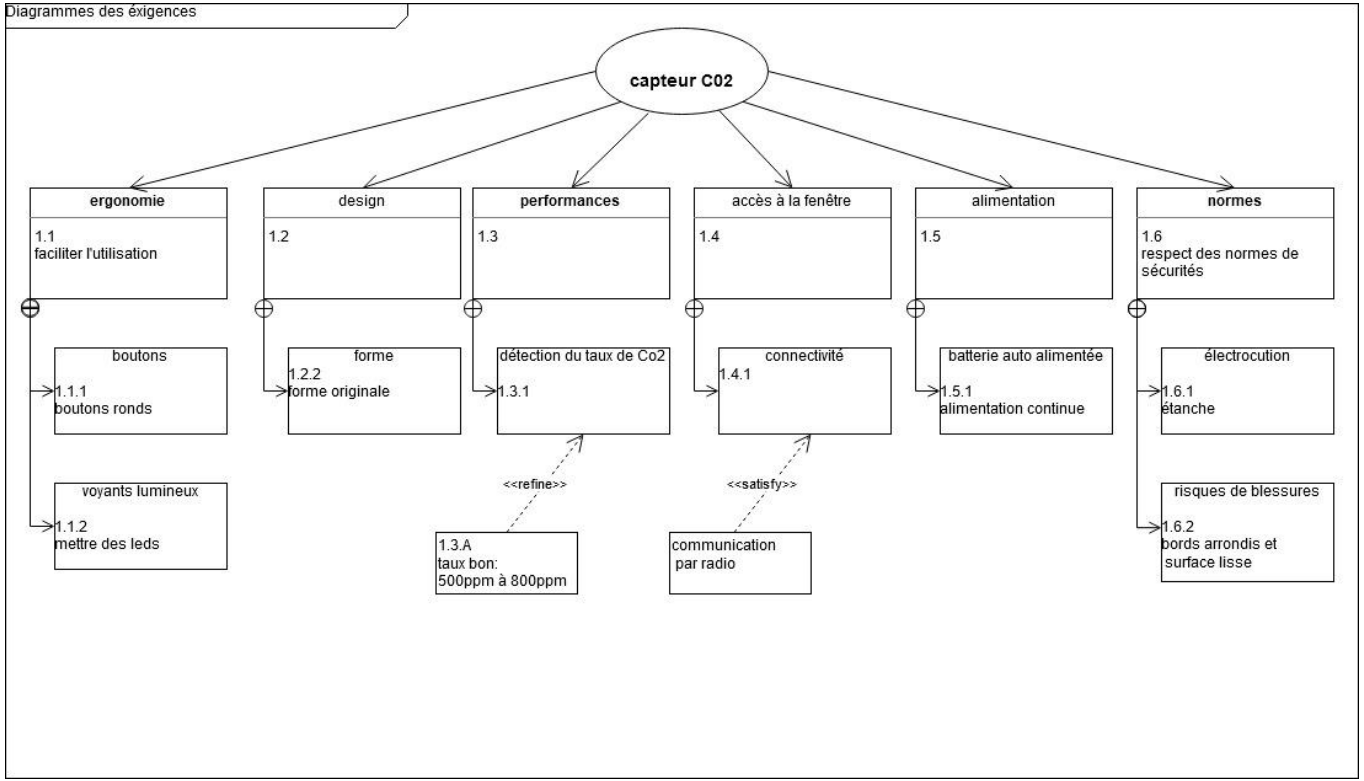
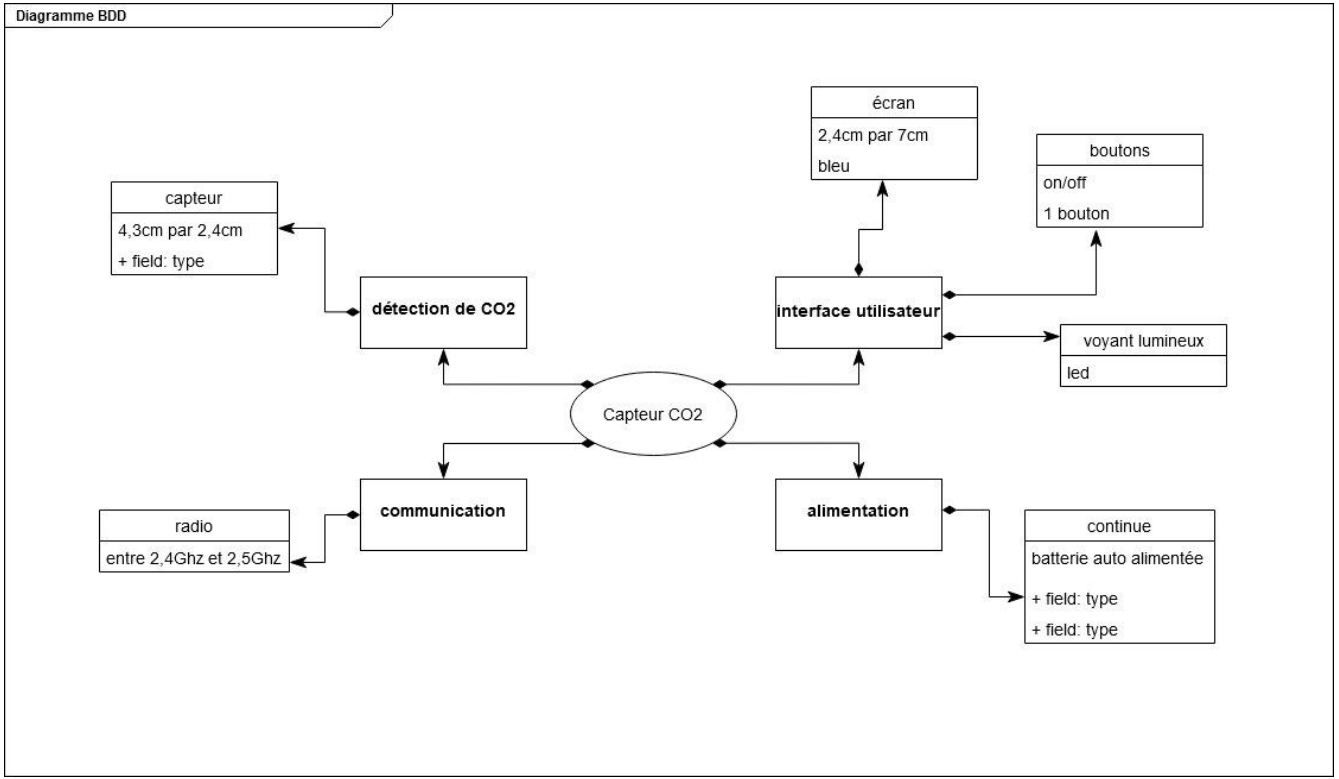
SysML : diagramme des cas d'utilisations



SysML : diagramme des exigences



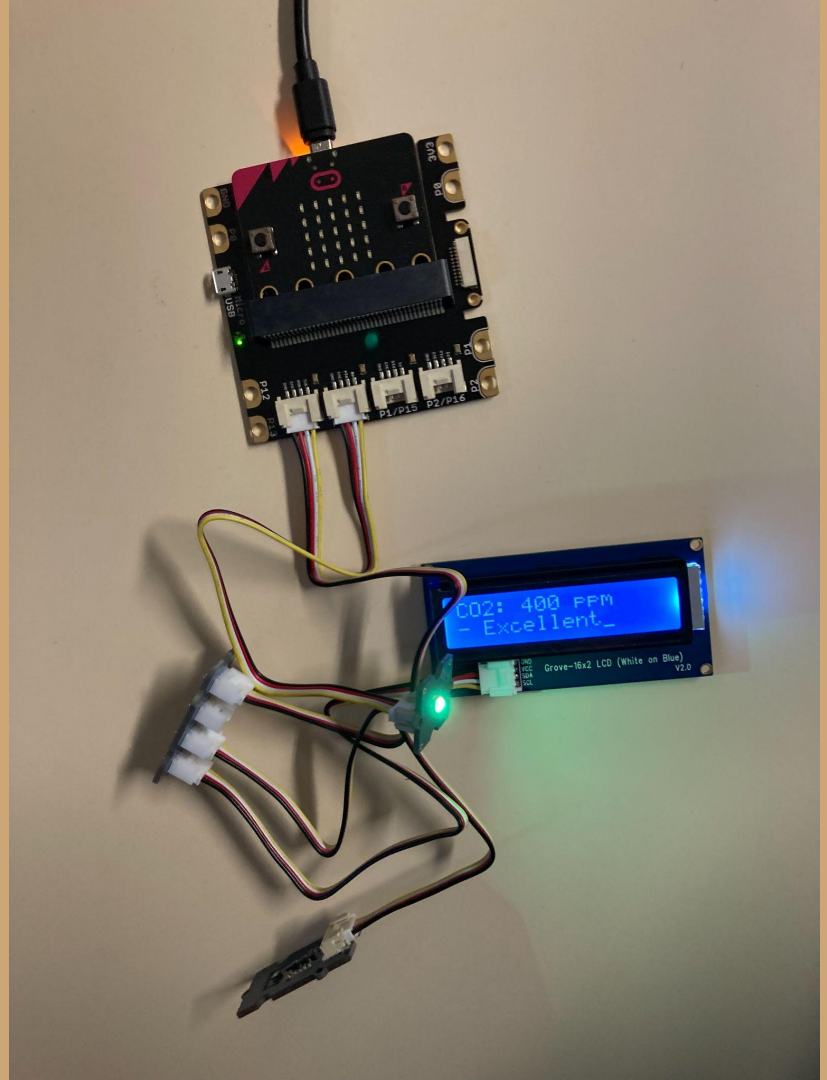
SysML : diagramme de définition de bloc



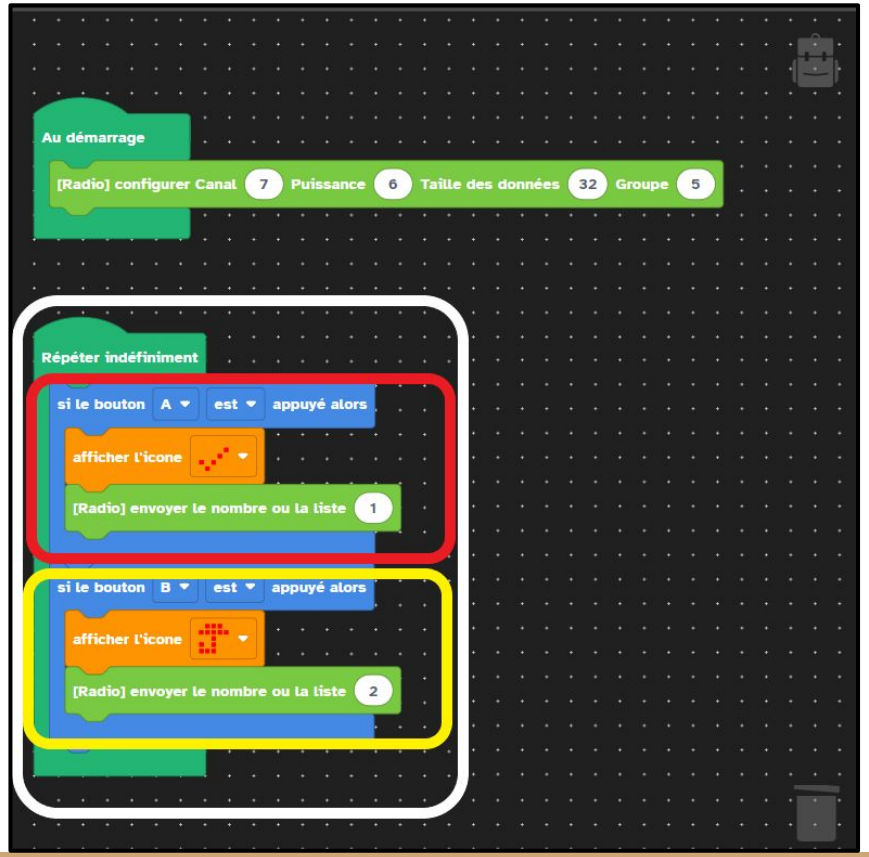
Programmation carte micro:bit Principale

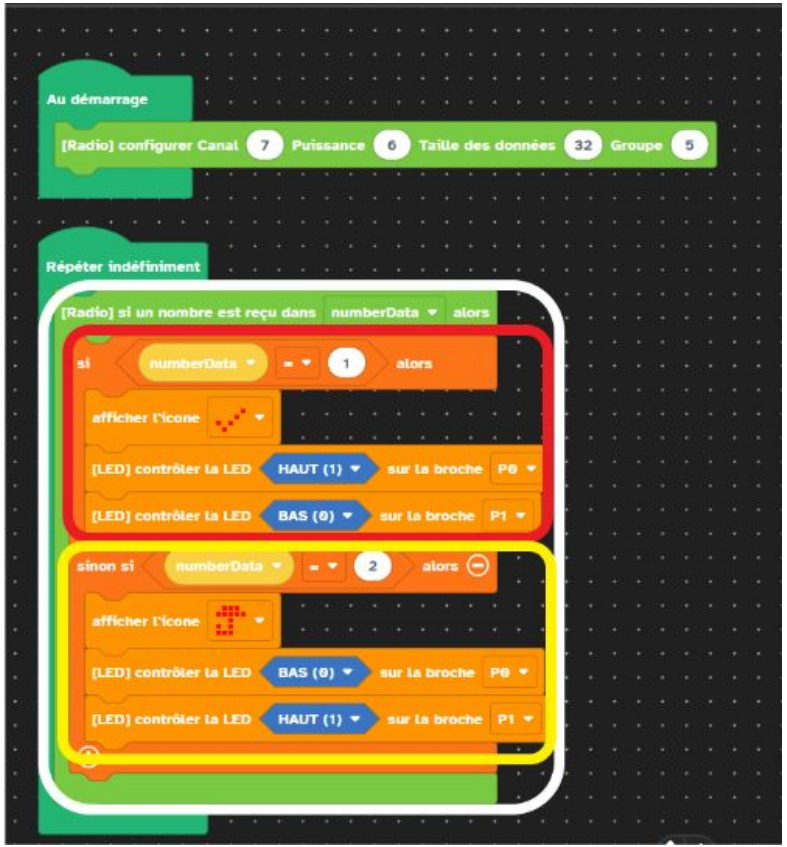
```python
from microbit import *
from sgp30 import SGP30
import neopixel
from lcd_i2c import LCD1602
import utime

NP_LED_COUNT_0 = 30

sgp30 = SGP30()
# Neopixel on pin0
np_0 = neopixel.NeoPixel(pin0, NP_LED_COUNT_0)
lcd = LCD1602()

def neopixel_showAllLed(neoPx, ledCount, R, G, B):
  for i in range(ledCount):
    neoPx[i] = (R, G, B)
  neoPx.show()

while True:
  TauxCO2 = sgp30.eCO2()
  if TauxCO2 <= 600:
    neopixel_showAllLed(np_0, NP_LED_COUNT_0, 51, 204, 0)
    lcd.clear()
    lcd.setCursor(0, 0)
    lcd.writeTxt("CO2: {} ppm".format(sgp30.eCO2()))
    lcd.setCursor(0, 1)
    lcd.writeTxt('- Excellent')
  elif TauxCO2 > 600 and TauxCO2 < 800:
    neopixel_showAllLed(np_0, NP_LED_COUNT_0, 255, 255, 0)
    lcd.clear()
    lcd.setCursor(0, 0)
    lcd.writeTxt("CO2: {} ppm".format(sgp30.eCO2()))
    lcd.setCursor(0, 1)
    lcd.writeTxt('- CO2 Moyen ')
  elif TauxCO2 >= 800 and TauxCO2 < 1000:
    neopixel_showAllLed(np_0, NP_LED_COUNT_0, 255, 102, 0)
    lcd.clear()
    lcd.setCursor(0, 0)
    lcd.writeTxt("CO2: {} ppm".format(sgp30.eCO2()))
    lcd.setCursor(0, 1)
    lcd.writeTxt('- CO2 Tres eleve')
  else:
    neopixel_showAllLed(np_0, NP_LED_COUNT_0, 204, 0, 0)
    lcd.clear()
    lcd.setCursor(0, 0)
    lcd.writeTxt("CO2: {} ppm".format(sgp30.eCO2()))
    lcd.setCursor(0, 1)
    lcd.writeTxt('- CO2 excessif')
  utime.sleep_ms(1000)
```

Rendu final du montage

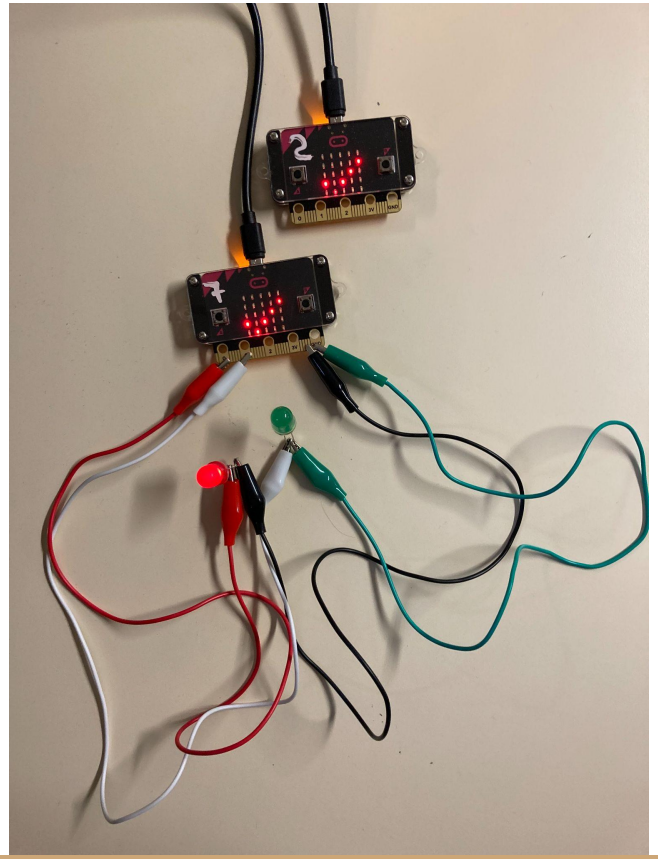


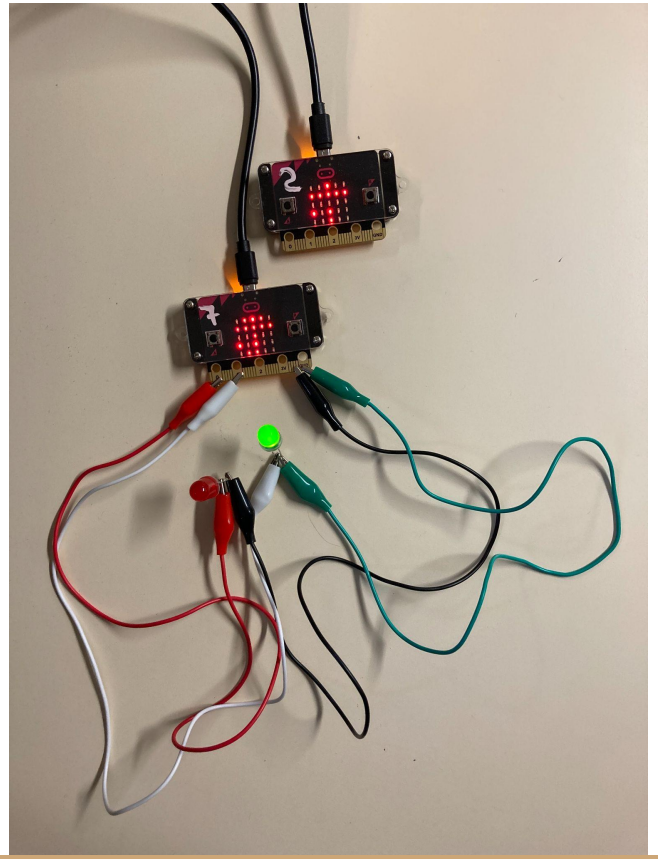
Programmation carte micro:bit secondaire



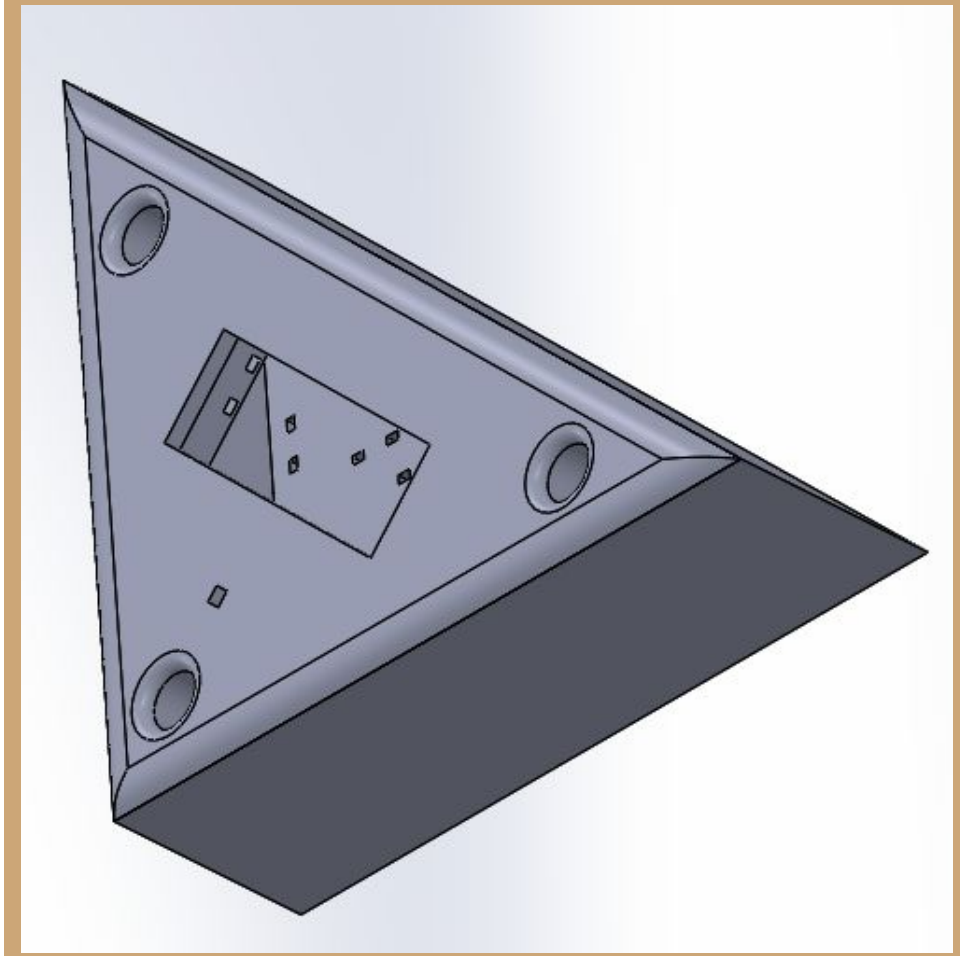


Montage final du code secondaire

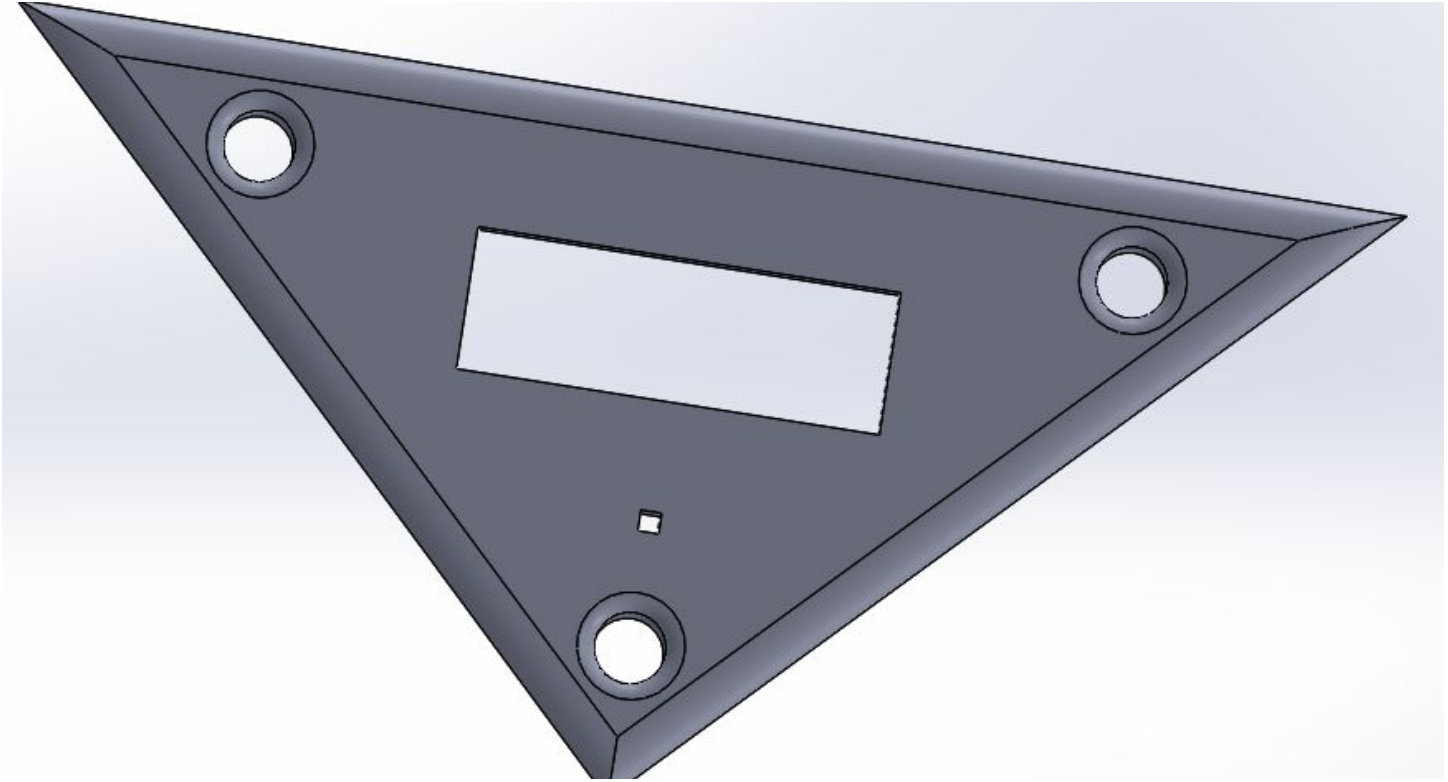




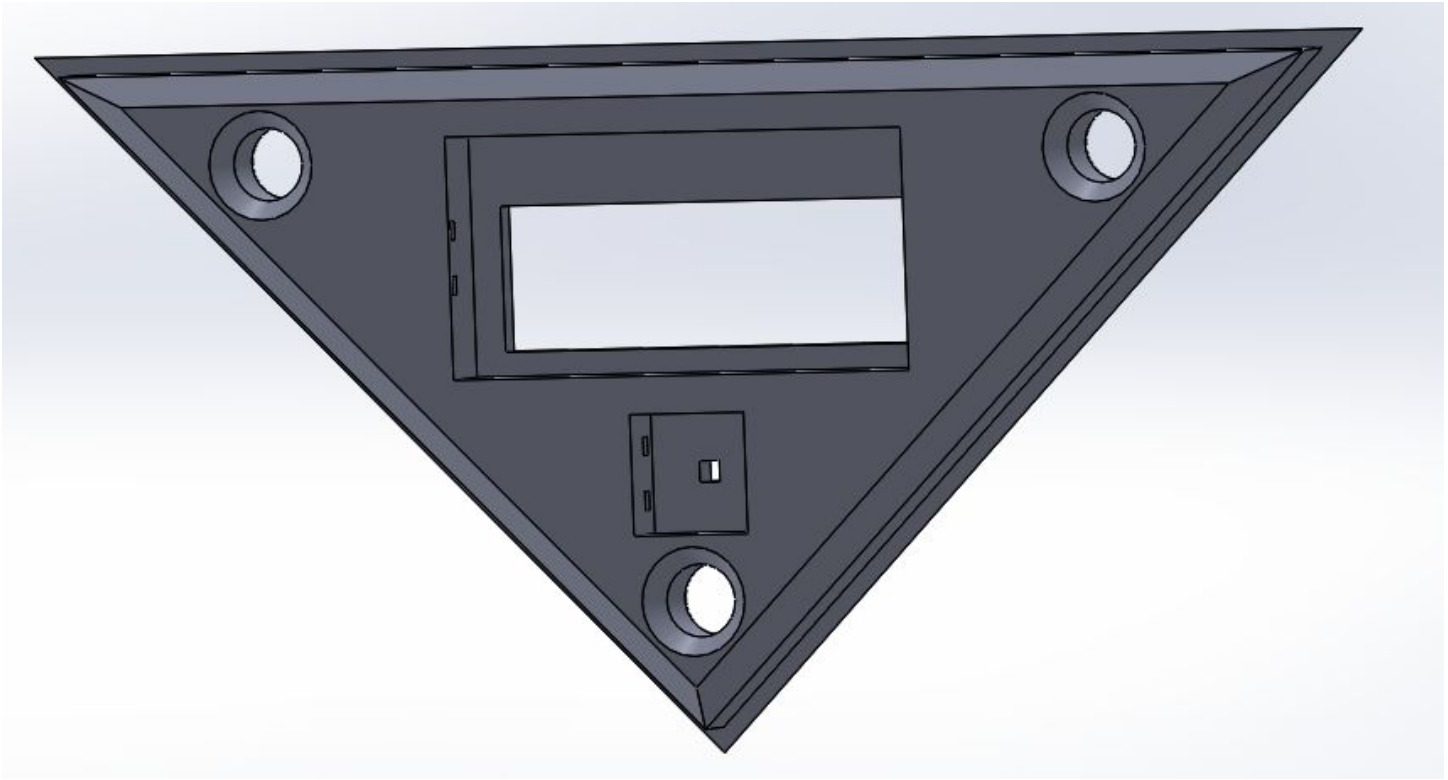
Modélisation



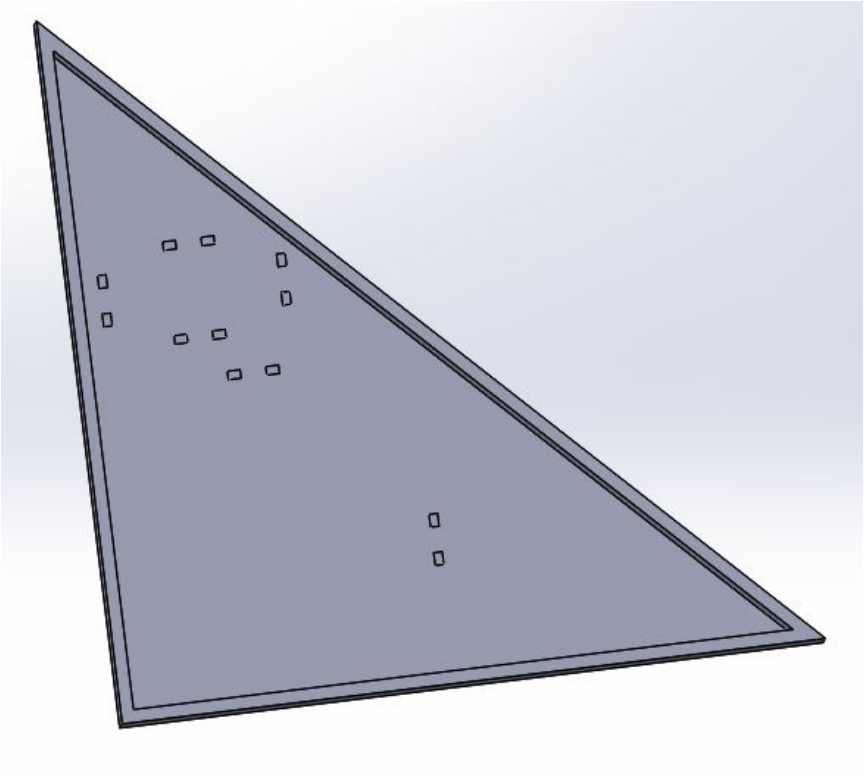
Couvercle



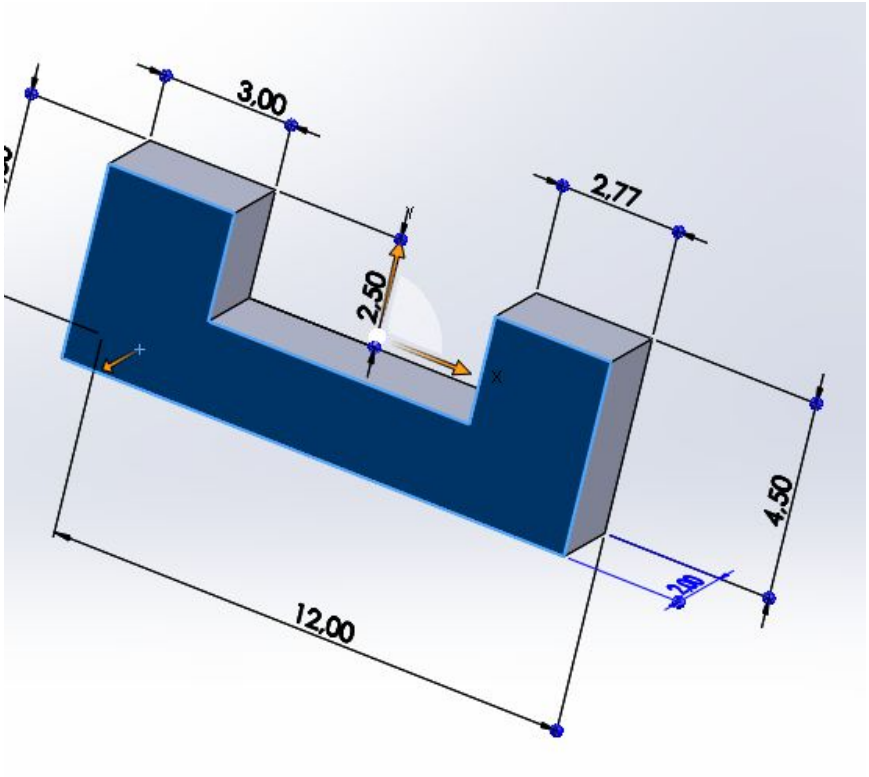
Couvercle



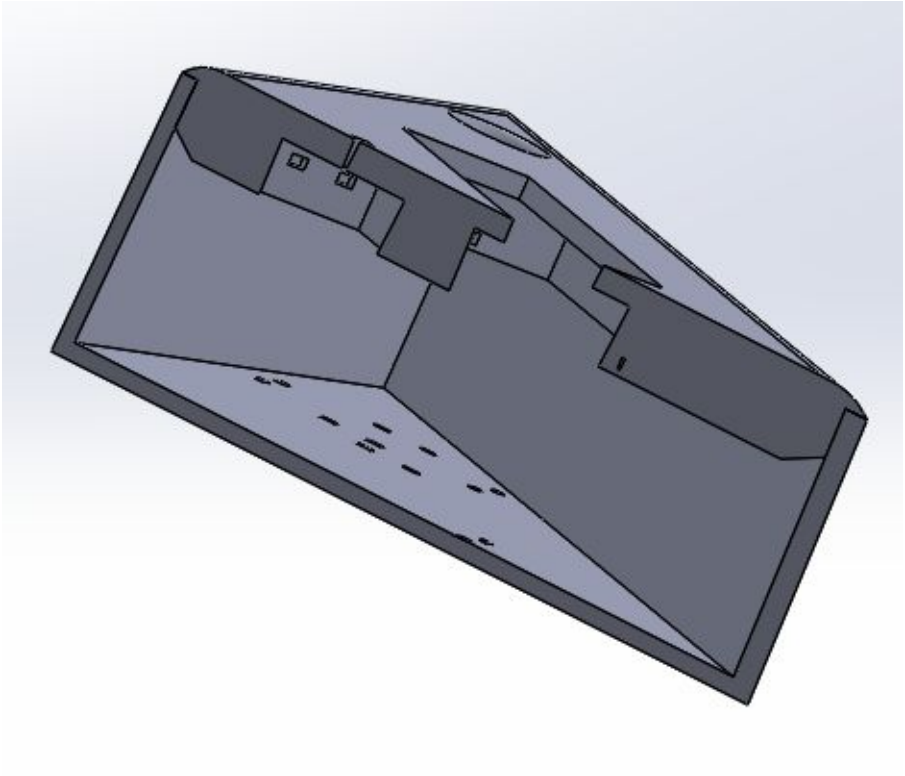
Socle

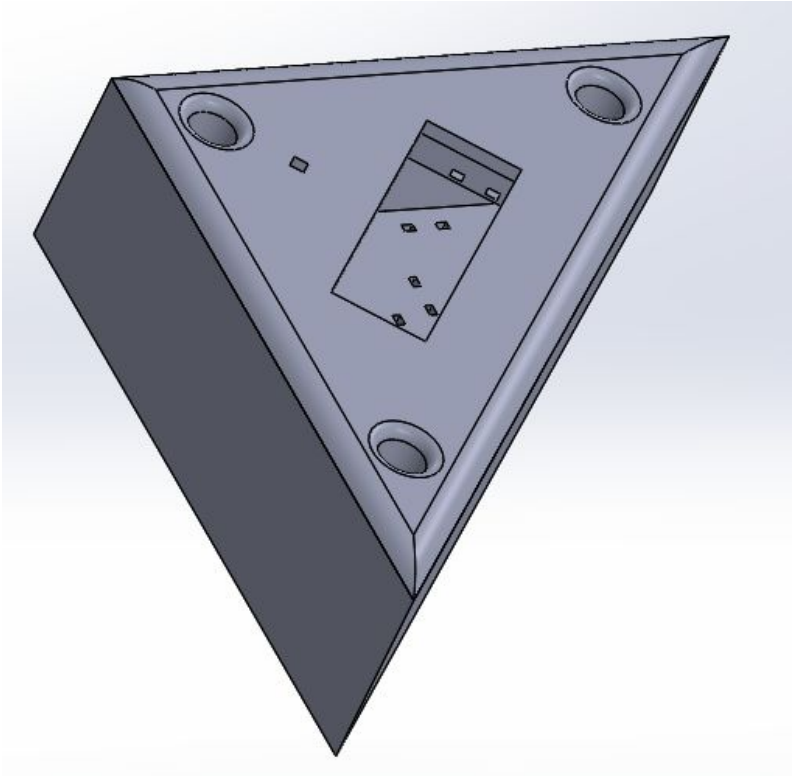


Pièce de fixation



Vue d’ensemble





Q/A

Avez-vous des questions ?

Merci !