Building your low-cost IoT platforms & Demo of WAZIUP long-range IoT platform

iSpace, Accra, Ghana
June 17th, 2016

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Université de Pau, France

Rural Sensing Applications

Moisture/ Temperature of storage areas

10-15kms

GSM GPRS

Pay subscription
Limitation of coverage
High energy consumption

Soil parameters such as soil humidity

Rural Sensing Applications

Moisture/ Temperature of storage areas

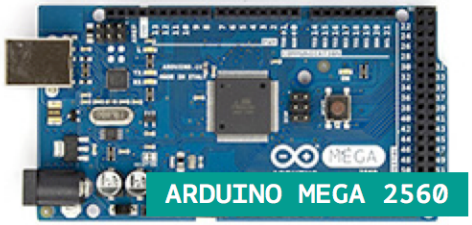
10-15kms

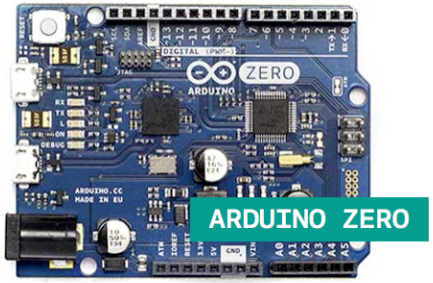
LoRa™

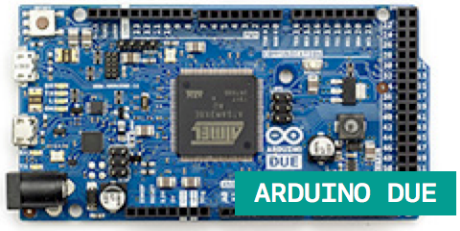
No subscription
Deploy own network
Low energy consumption

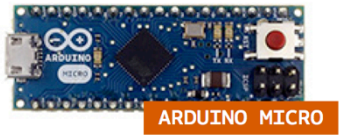
Soil parameters such as soil humidity

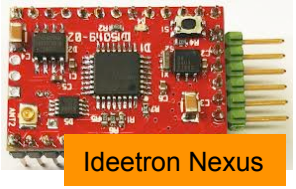
Building your IoT device











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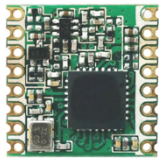


HopeRF RFM92W/95W

Libelium LoRa

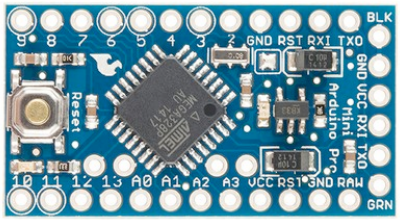
Modtronix inAir9/9B

NiceRF LoRa1276

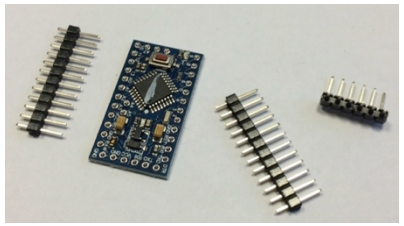
Long-Range communication library

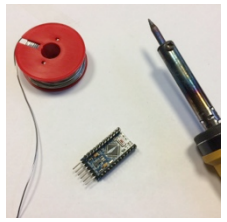
The Arduino Pro Mini

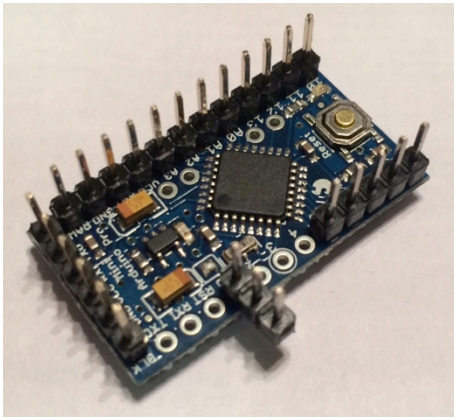
Arduino Pro Mini

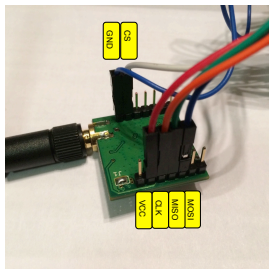


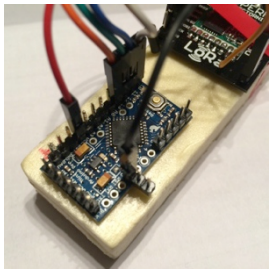
3.3v and 8MHz version

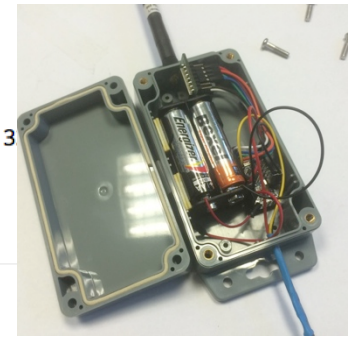


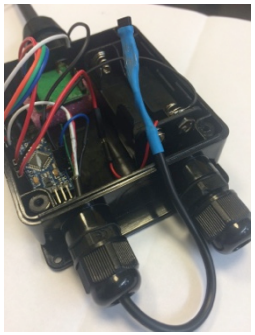


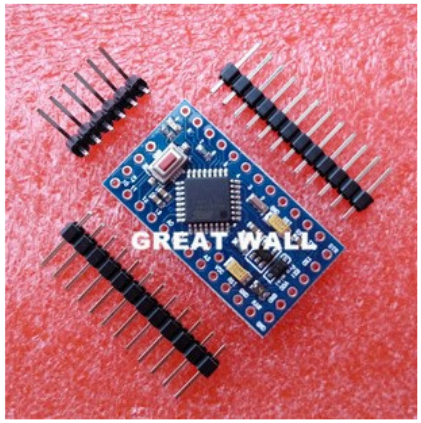












Avec la bootloader 1 pcs Pro Mini ATMEGA328 Pro Mini 3
MHz pour Arduino

View original title in English

4.9 (417 Votes) | 434 Commandes

Prix : € 1,49 / Kit

Trouvez plus de deals sur l'App

Livraison : € 0,29 vers France via China Post Ordinary Small Pac

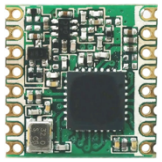
Livraison : 15-34 jours (envoyé en 7 jours ouvrables)

Quantité : – 1 + Kit (55350 Kits available)

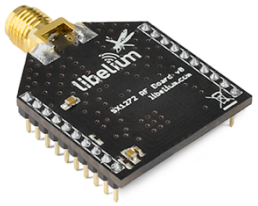
Montant total : € 1,78

Acheter maintenant | Ajouter au panier

LoRa radios that our library already supports



HopeRF RFM92W/95W



Libelium LoRa

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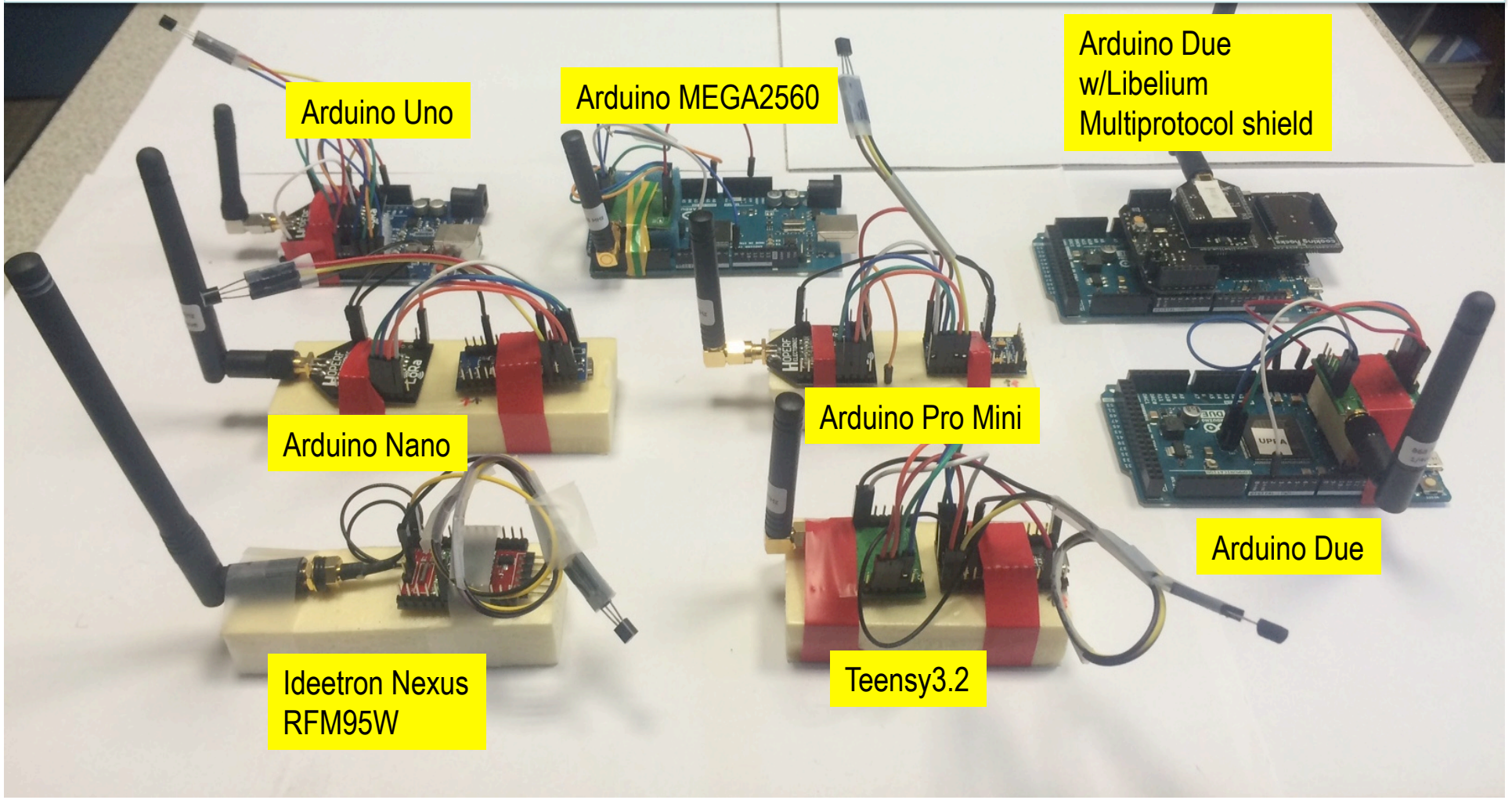
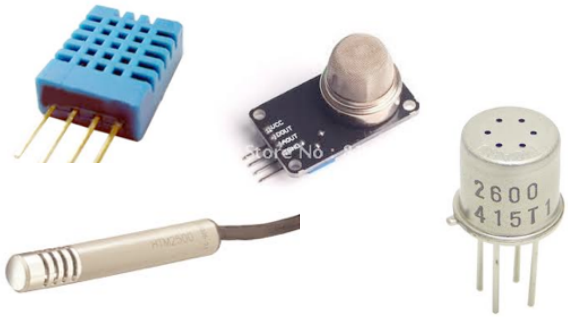
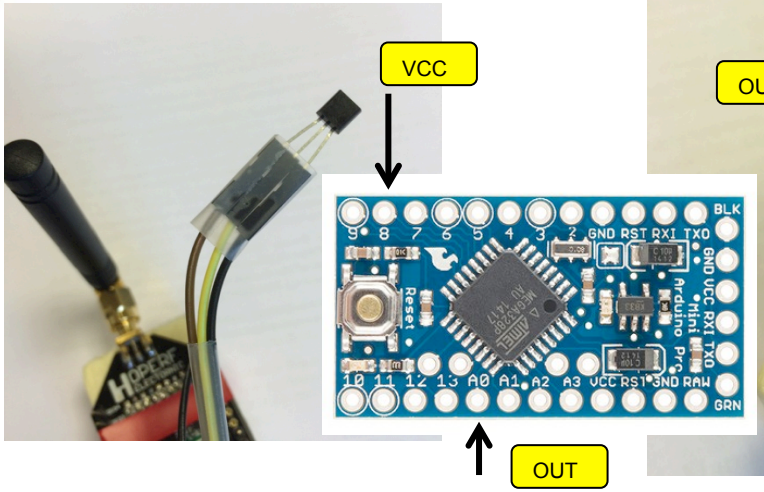
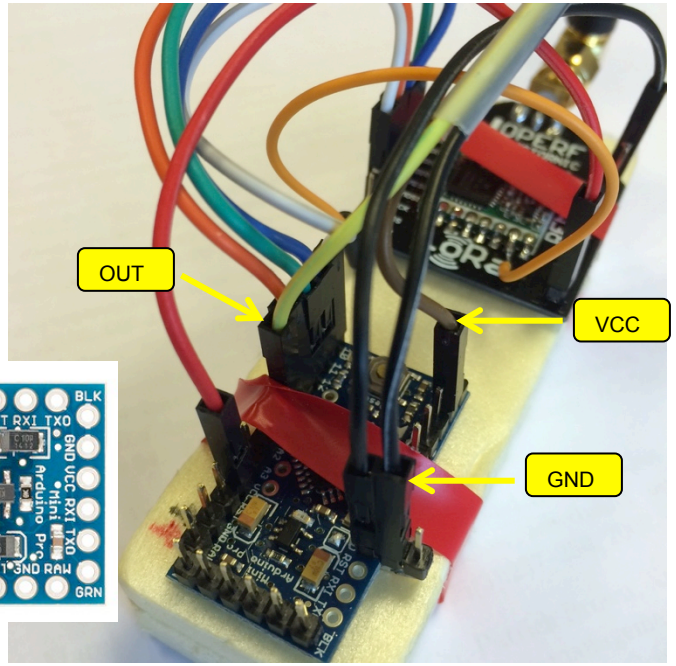


Connecting a sensor







READY-TO-USE TEMPLATES

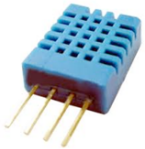
Physical sensor reading

Physical sensor reading

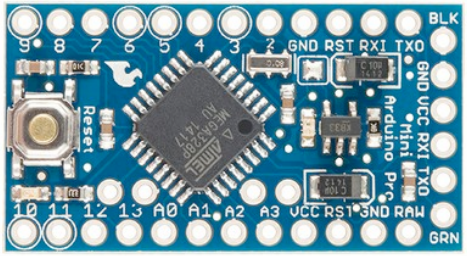
Physical sensor reading

IoT catalogue

Code generation



Physical sensor management



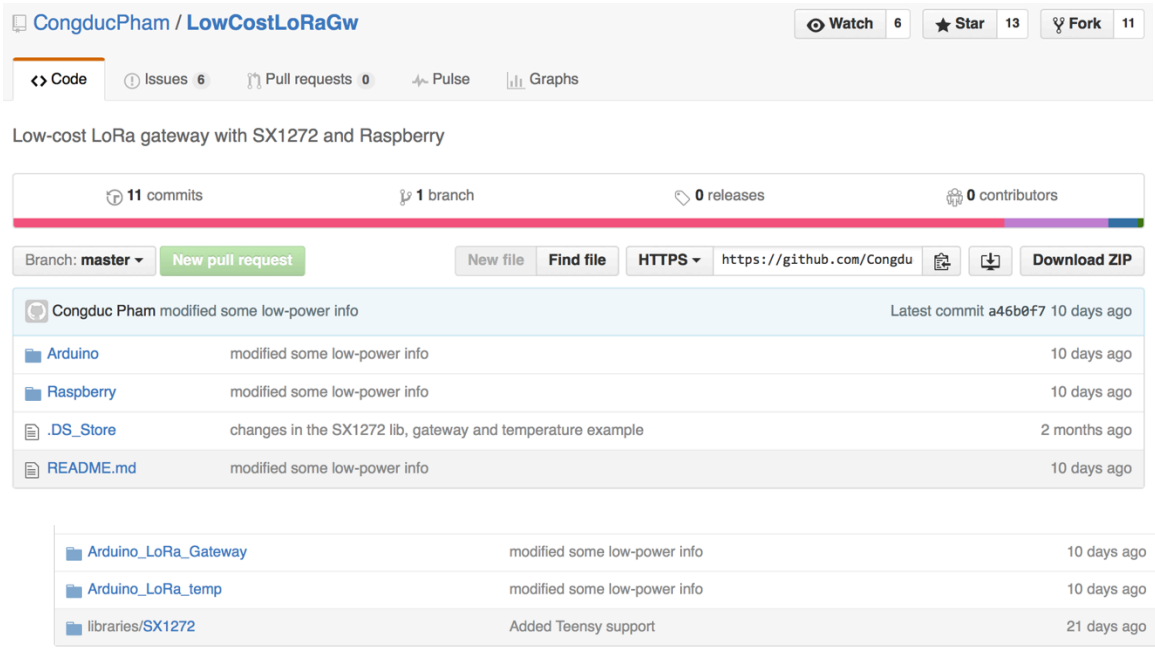
Activity duty-cycle, low power

Security

Long-range transmission

Logical sensor management

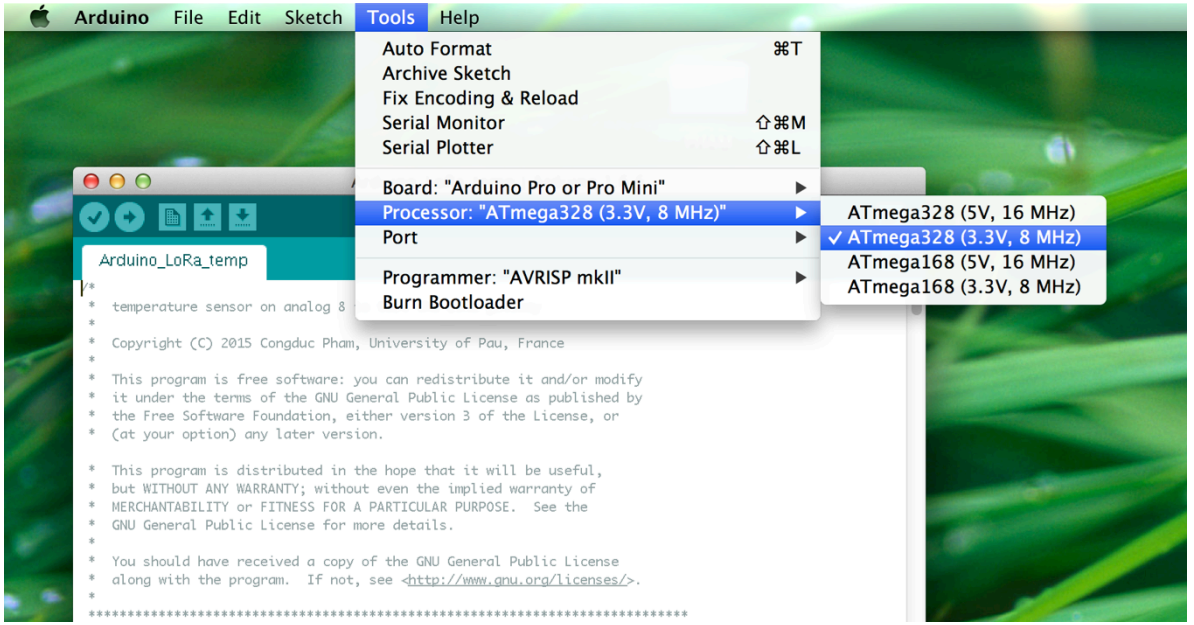
GETTING THE SOFTWARE



Fisrt, you will need the Arduino IDE 1.6.6 or later (left). Then get the LoRa library from our github: https://github.com/CongducPham/LowCostLoRaGw (right).

Get into the Arduino folder and get both Arduino_LoRa_temp and SX1272 folder. Copy Arduino_LoRa_temp into your “sketch” folder and SX1272 into “sketch/libraries”

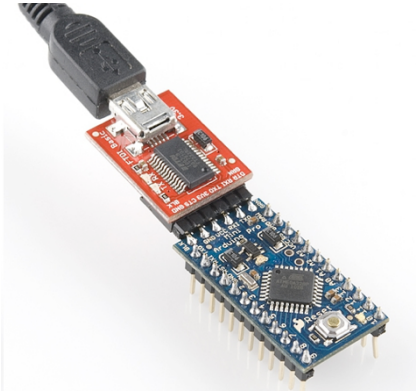
Compiling

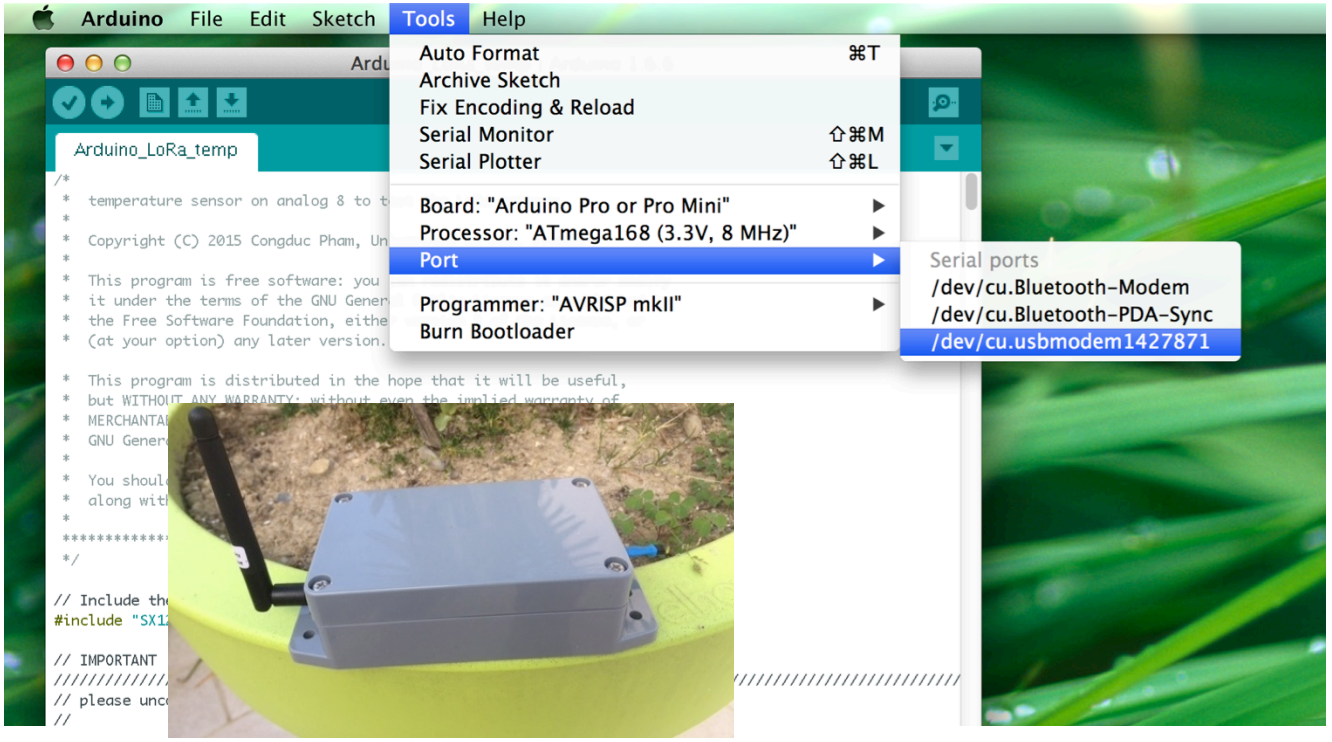


Open the Arduino_LoRa_temp sketch and select the Arduino Pro Mini board with its 3.3V & 8MHz version.

Then, click on the « verify » button

Uploading





Connect the USB end to your computer and the USB port should be detected in the Arduino IDE. Select the serial port for your device. It may have another name than what is shown in the example. Then click on the « upload » button

Oups, one more step!

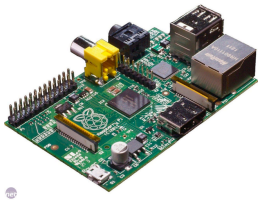
Moisture/
Temperature
of storage
areas

10-15kms

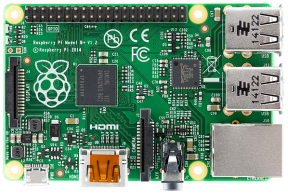
Need a gateway!

Building your IoT gateway

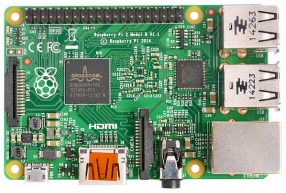
RPI v1 model B



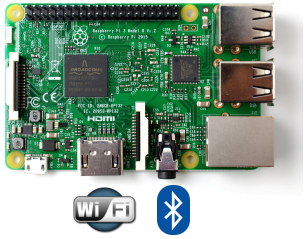
RPI v1 model B+



RPI v2 model B



RPI v3 model B



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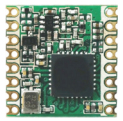

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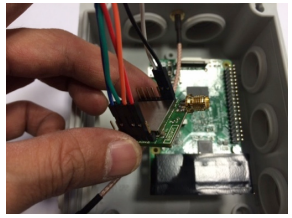
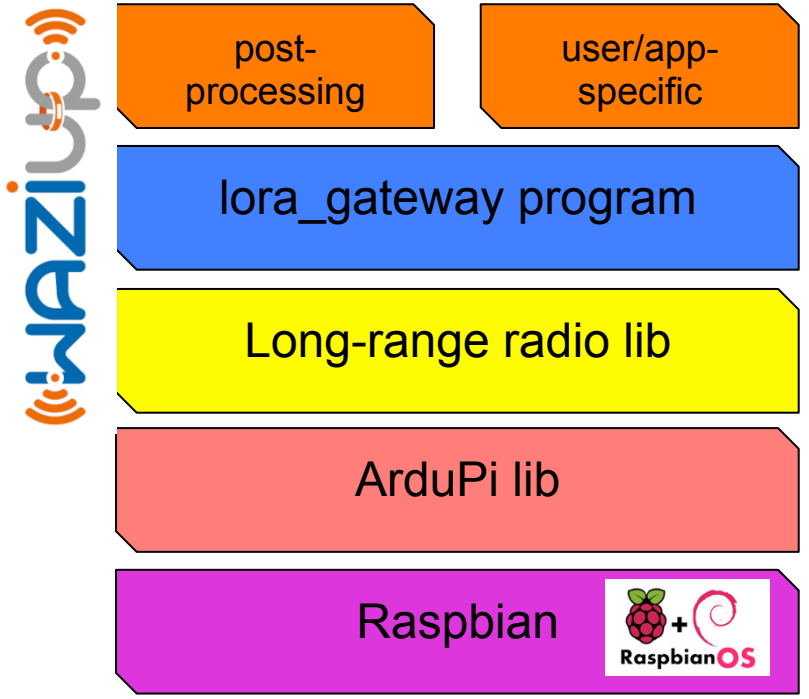
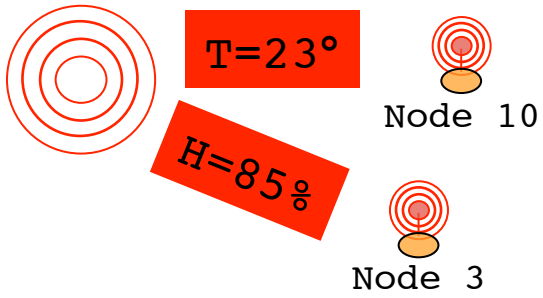


Our Low-Cost gateway architecture

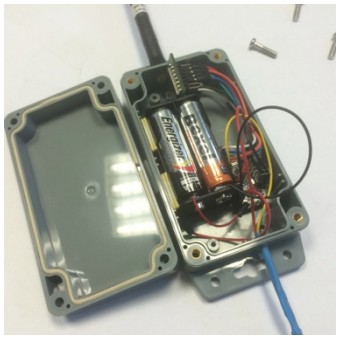
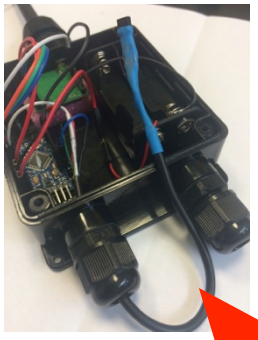


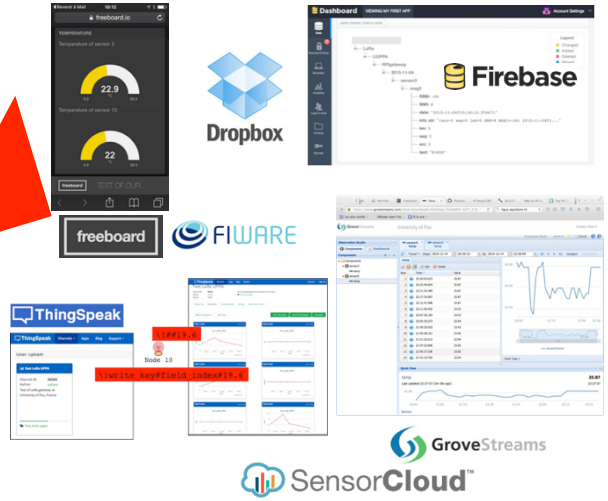
Starting the basic gateway



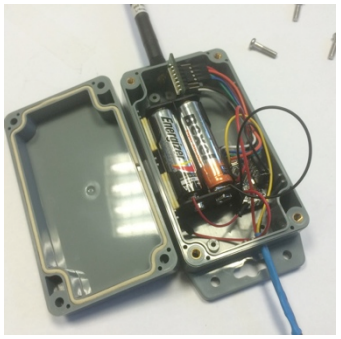

```
> sudo ./lora_gateway
Power ON: state 0
LoRa mode: 4
Setting mode: state 0
Channel CH_10_868: state 0
Power M: state 0
Get Preamble Length: state 0
Preamble Length: 8
LoRa addr 1 : state 0
SX1272/76 configured as LR-BS. Waiting RF input for transparent RF-serial bridge

--- rxlora. dst=1 type=0x10 src=10 seq=0 len=5 SNR=9 RSSIpkt=-54
^p1,16,10,0,5,9,-54
T=23°
--- rxlora. dst=1 type=0x10 src=3 seq=0 len=5 SNR=8 RSSIpkt=-54
^p1,16,3,0,5,8,-54
H=85%
```

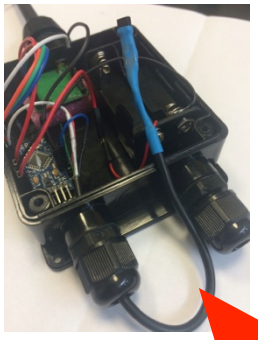
Out-of-the-box surveillance

Do it yourself !

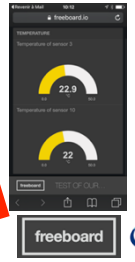


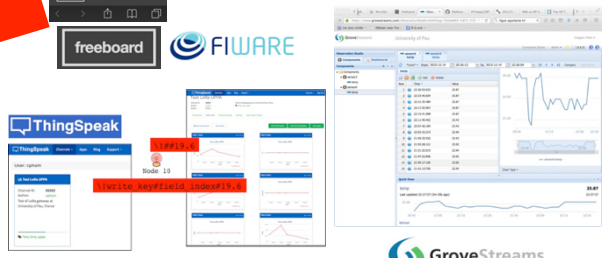


Step-by-step tutorial and source code available

Step-by-step tutorial and source code available

Python scripts available





https://github.com/CongducPham/LowCostLoRaGw

Working without Internet access

A

10-15kms

GSM GPRS

3G

Wi Fi

Internet access

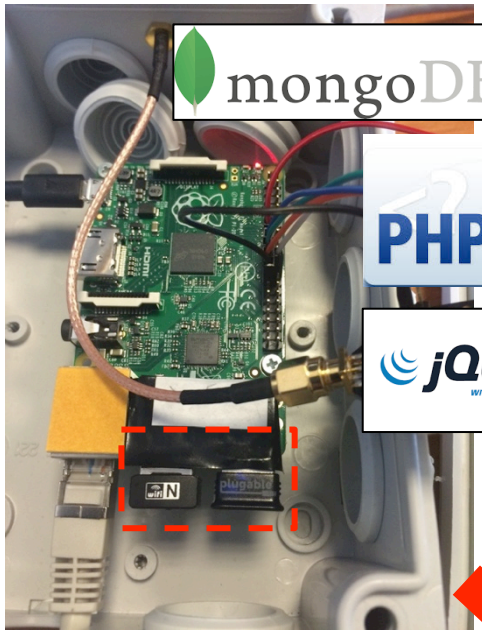
LoRa™

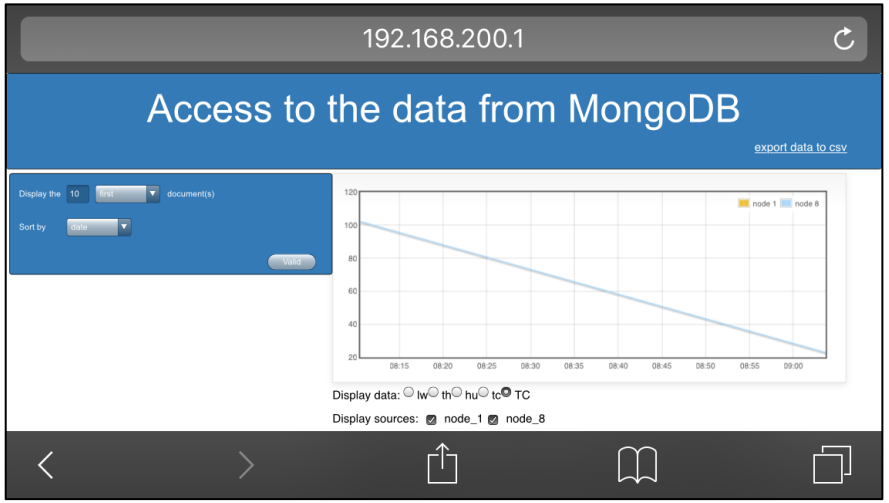
No subscription
Deploy own network
Low energy consumption

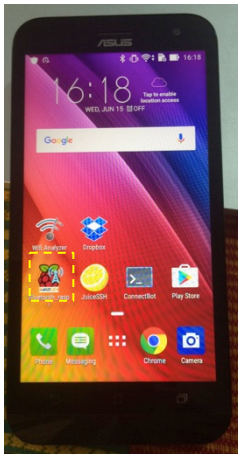
B

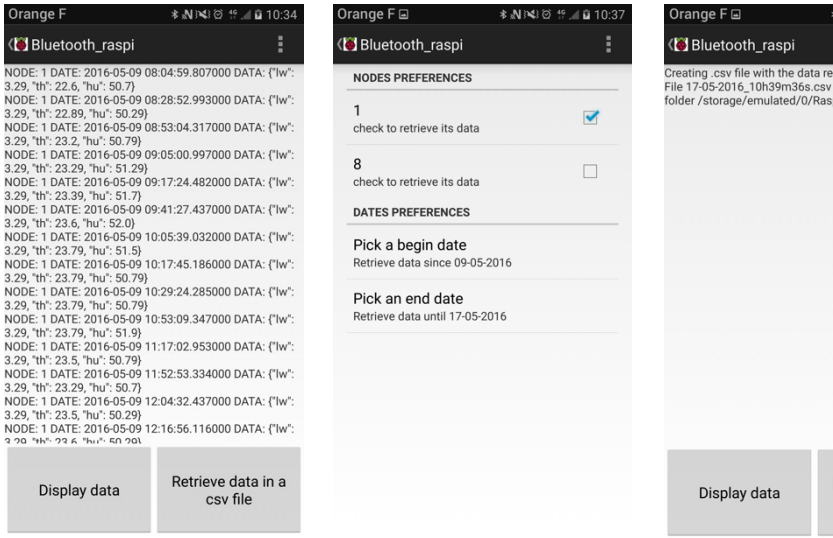
Wi Fi

STANDALONE GATEWAY









Now demo time!


iSpace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