

# INTERNET OF THINGS

## INS RAMBLA PRIM



@rPrimTech

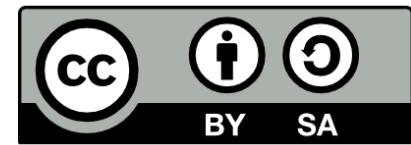
JORNADES  
TÈCNIQUES  
07/05/2018



JAUME NOGUÉS

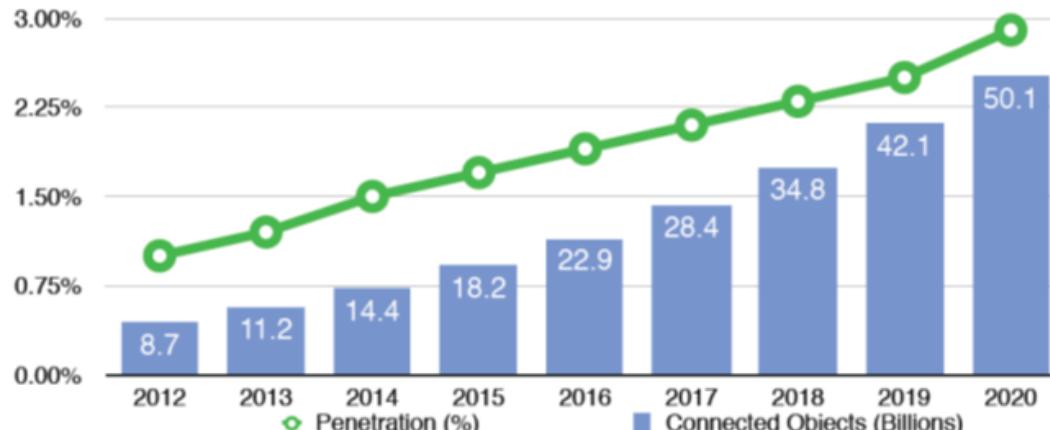
TBBT

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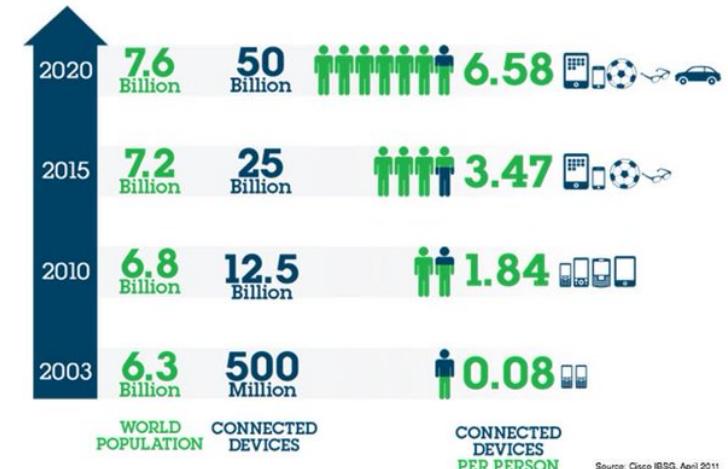


# DISPOSITIUS CONNECTATS

Cisco's Projections For The Internet of Things

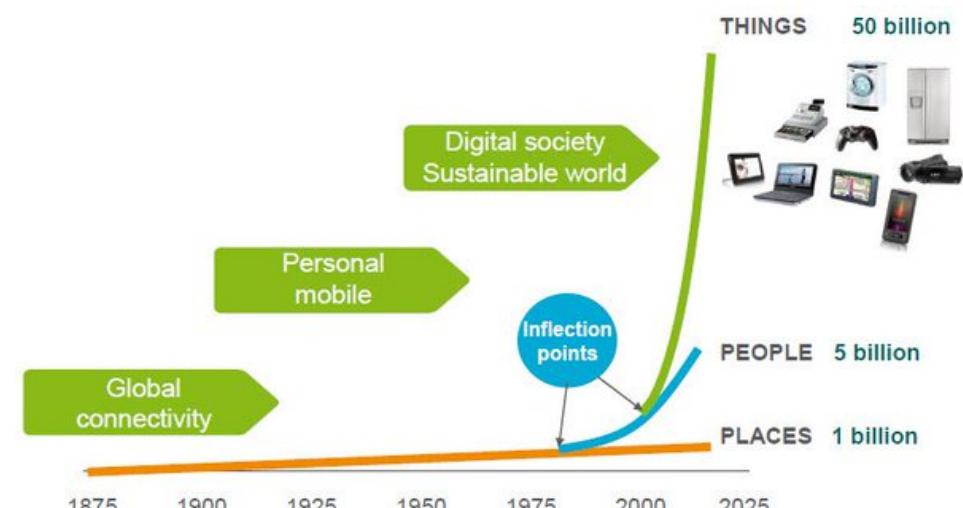
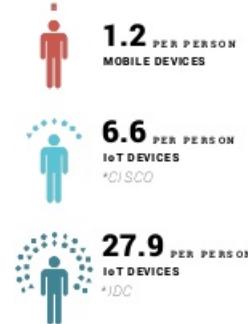
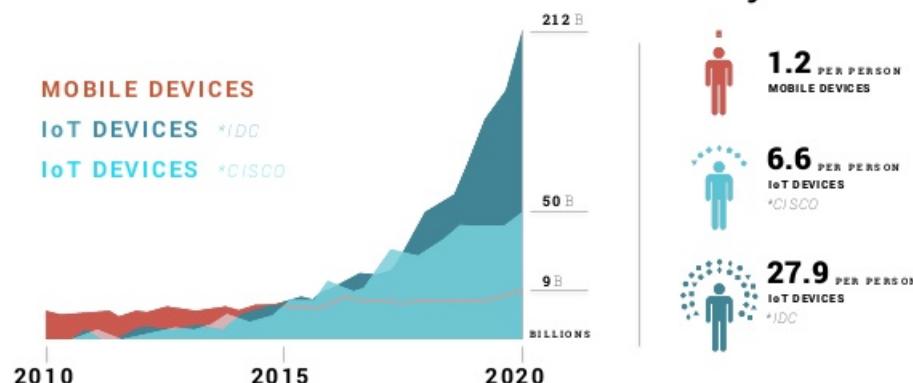


Source: Cisco



Source: Cisco IBSG, April 2011

212BB Connected Devices by 2020



Source: Ericsson

ON TROBEM IOT

SMART HOME

SMART DEVICE

CONNECTED HOME

D2D DEVICE TO DEVICE

M2M MACHINE TO MACHINE

SMART FARM

SMART FACTORY

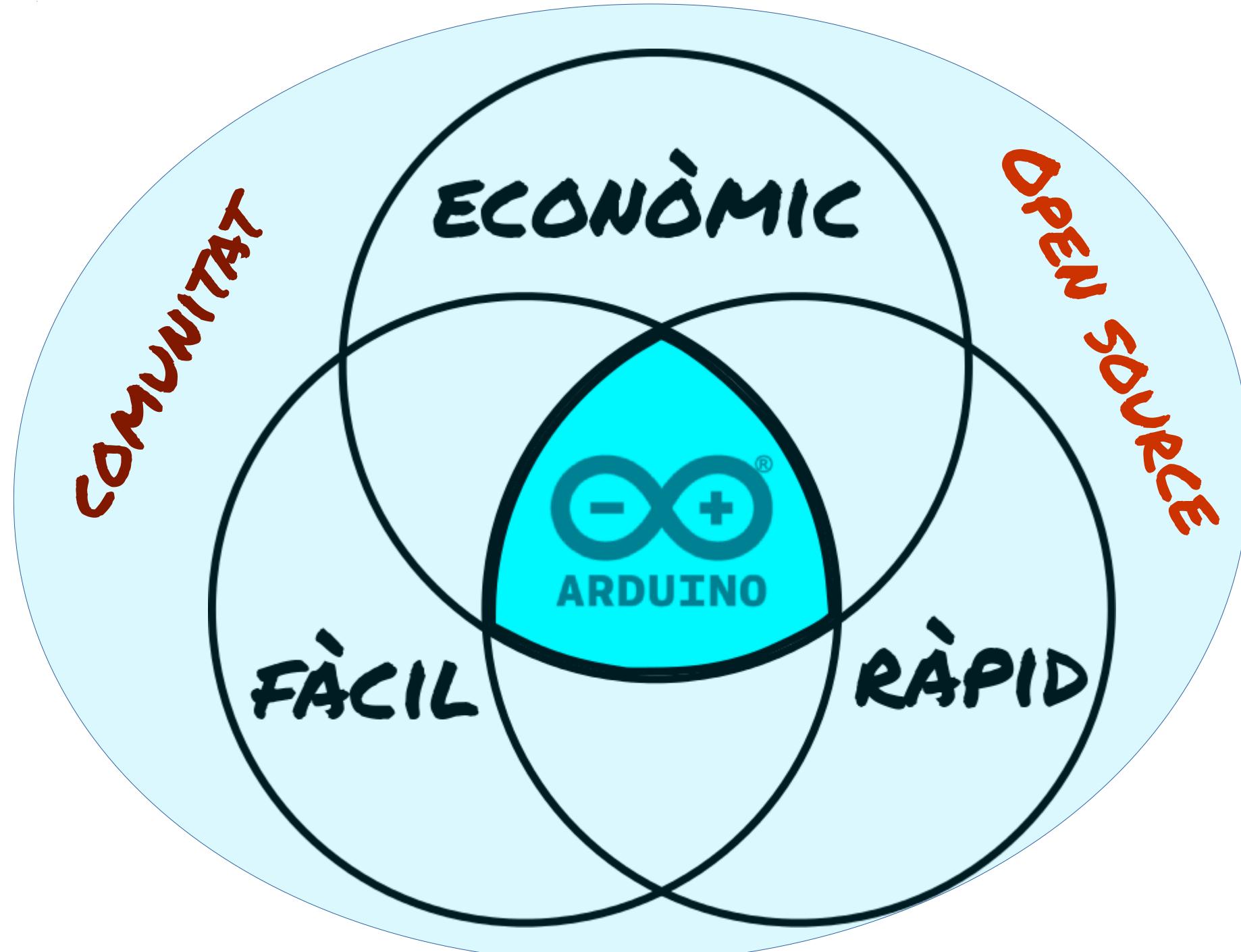
CONNECTED CAR

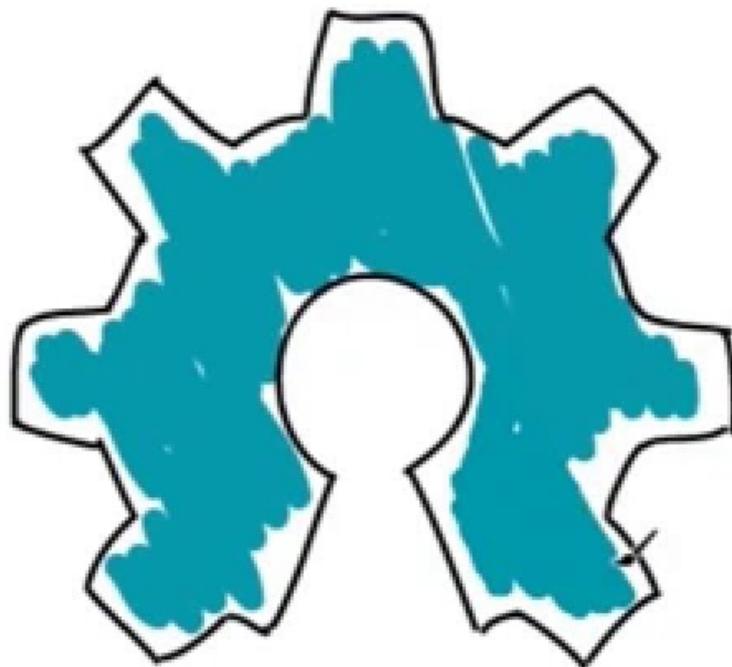


LIFE SIMPLIFIED WITH CONNECTED DEVICES

IOT DIY

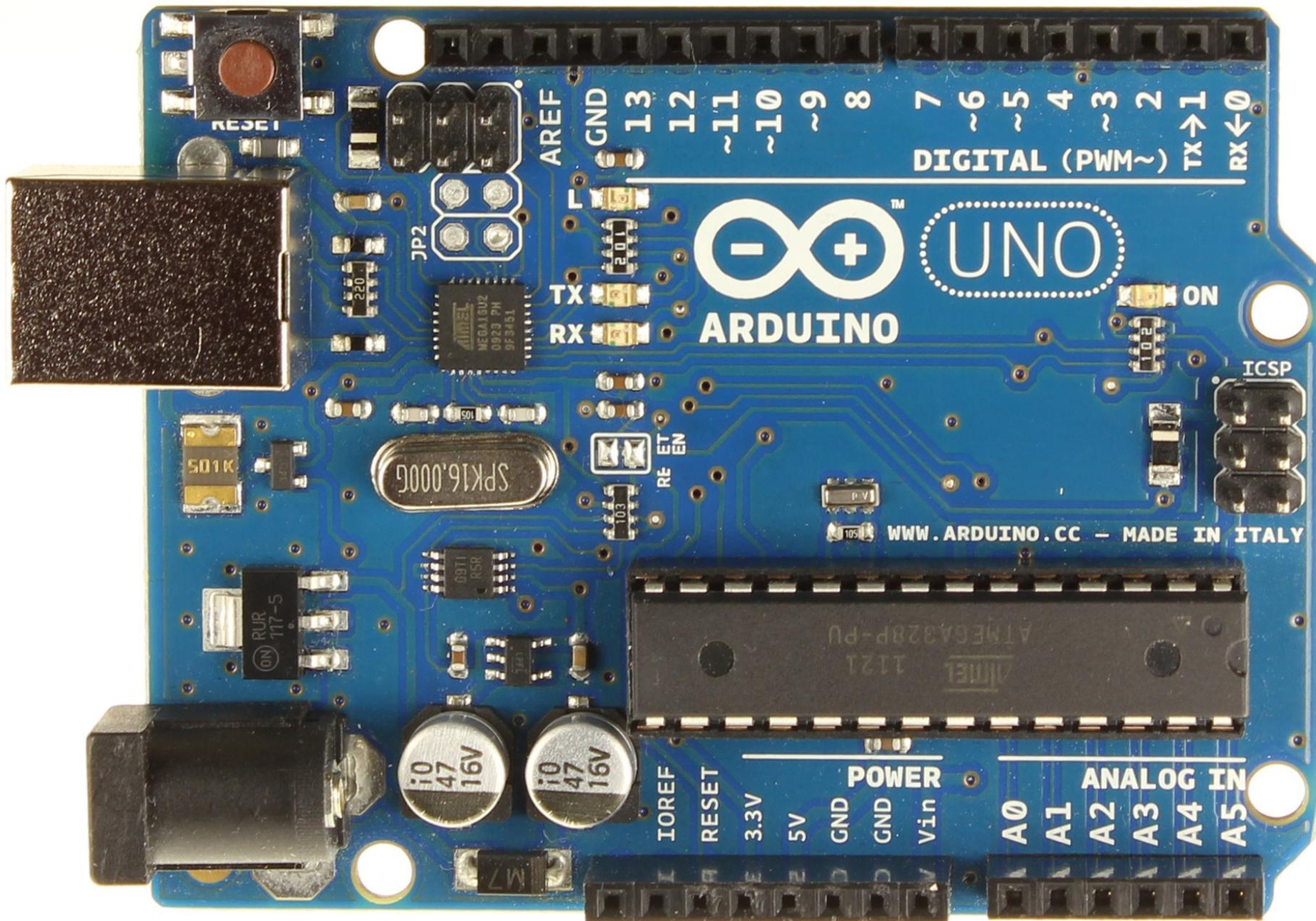
DO IT YOURSELF





open source  
hardware

# ARDUINO UNO, L'INICI DE TOT



L'EQUIP

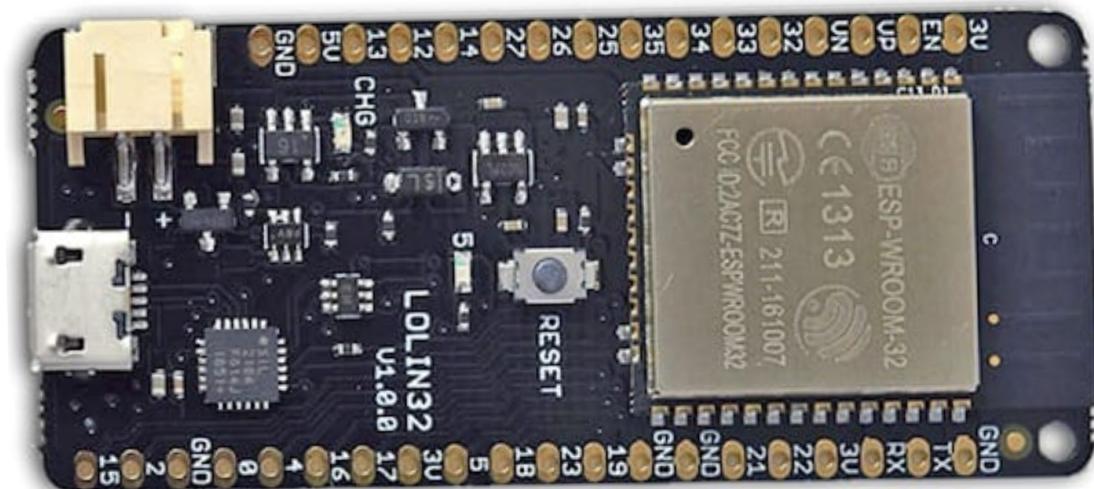
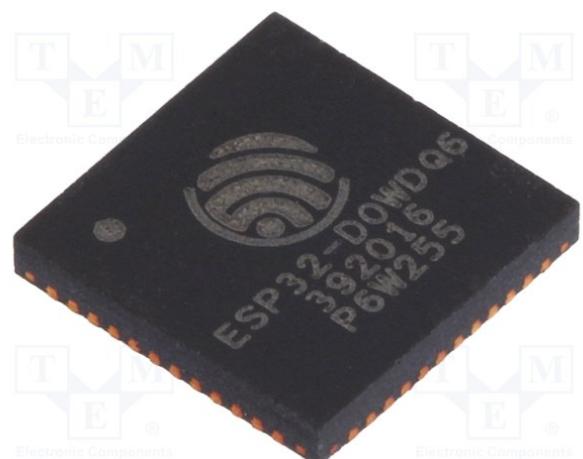
# Il Team Arduino



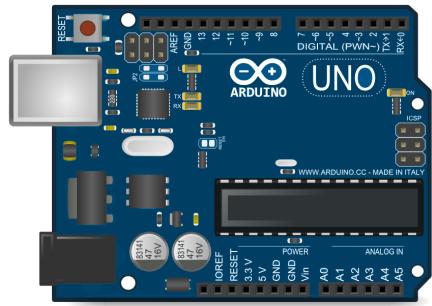
# ESP8266 / ESP32, PRESENT I FUTUR



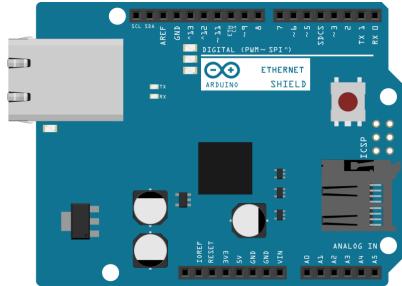
**1 €**



# HARDWARE



ARDUINO UNO + ETHERNET

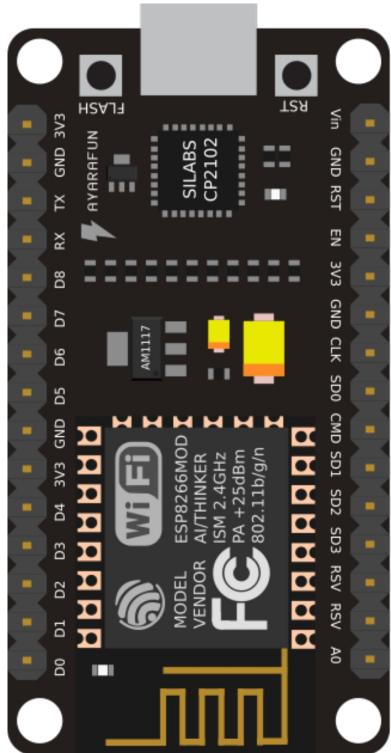


MKR WAN 1300

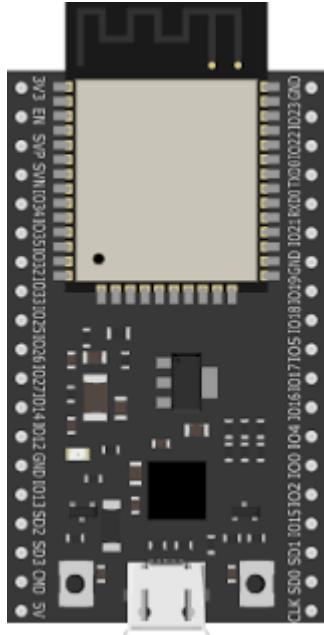


WHITECATBOARD

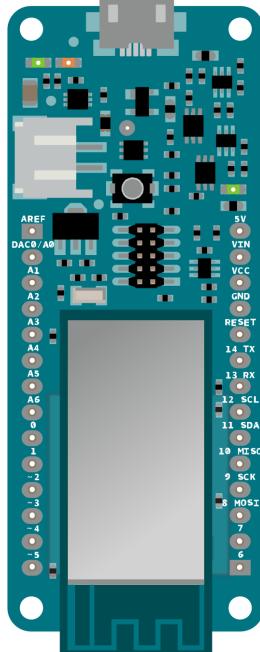
NODEMCU ESP8266



ESP32



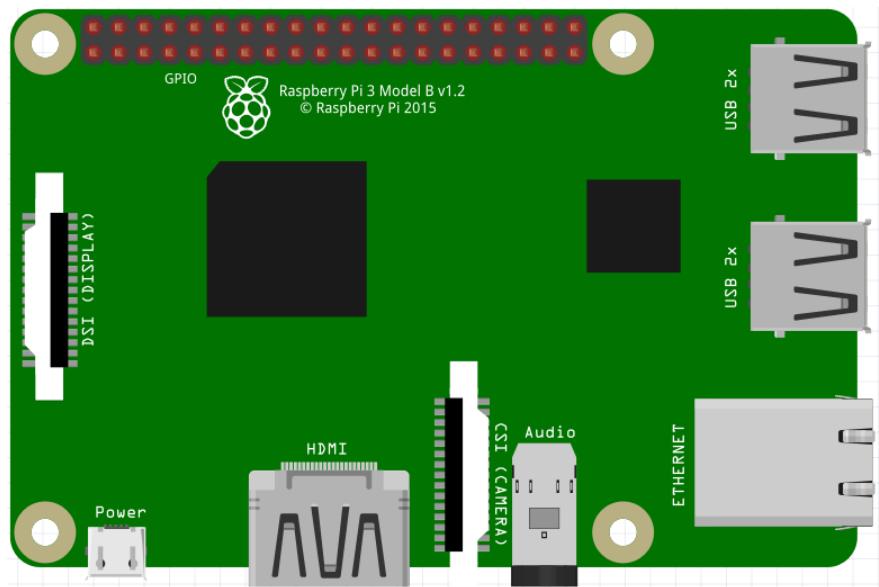
MKR1000



MKR FOX 1200



RASPBERRY PI

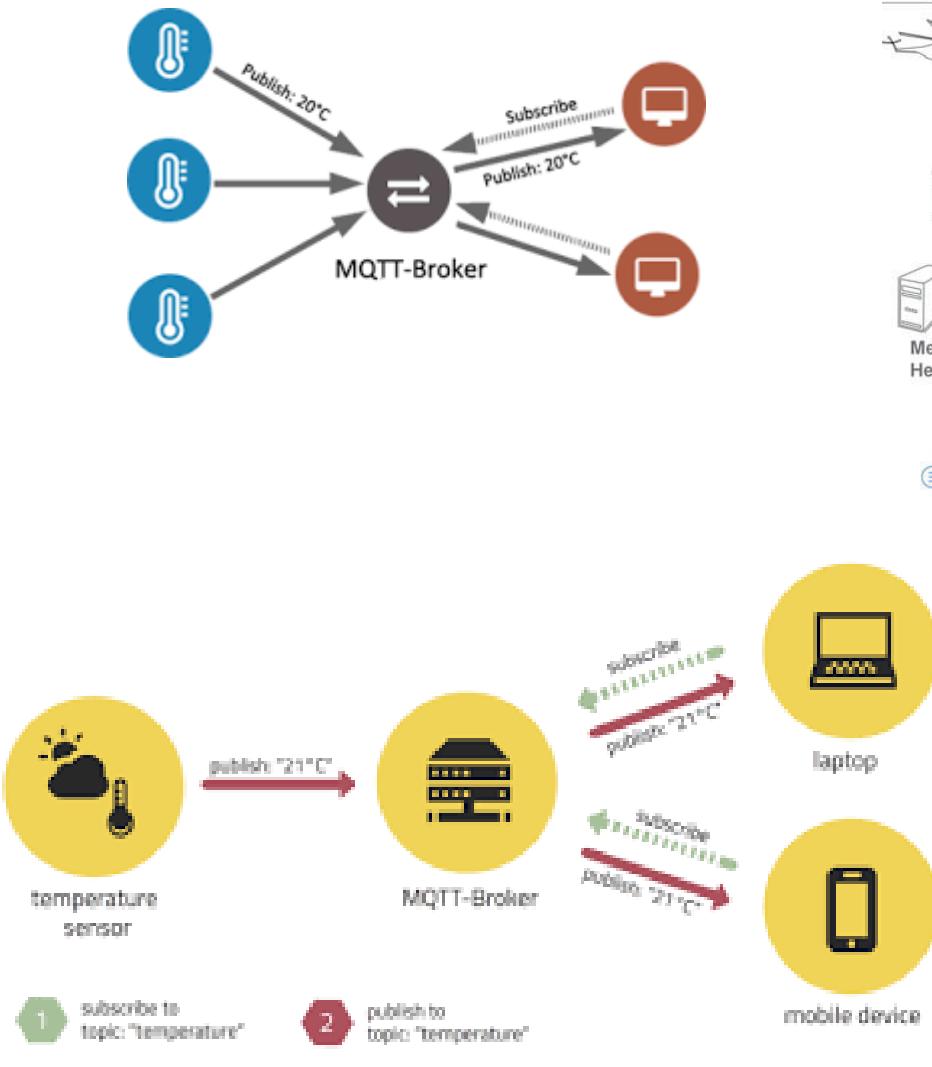


# TECNOLOGIES DE CONNECTIVITAT

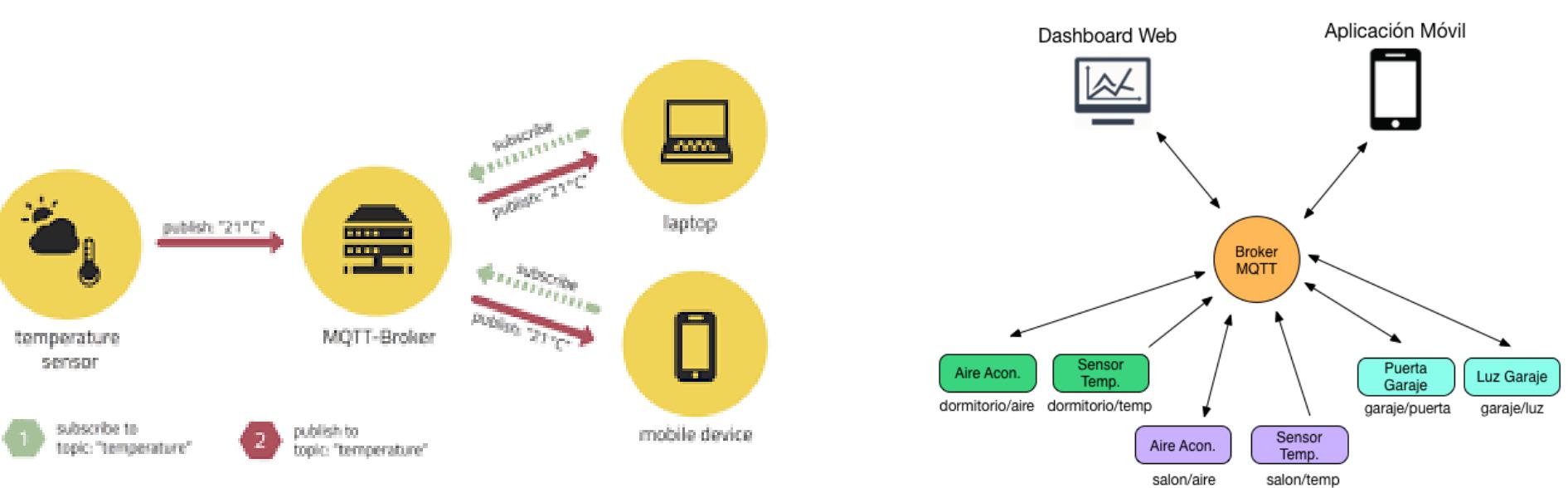
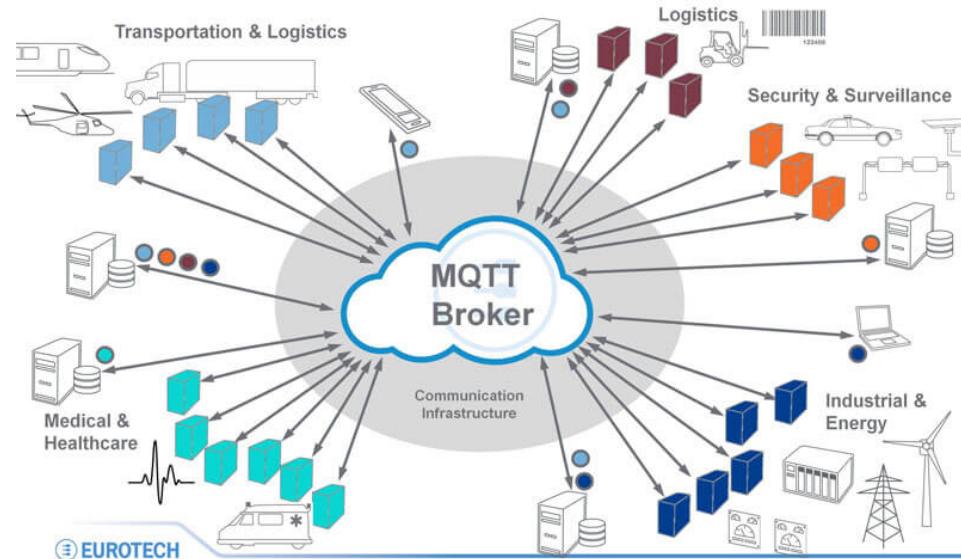


# MQTT

## MESSAGE QUEUING TELEMETRY TRANSPORT

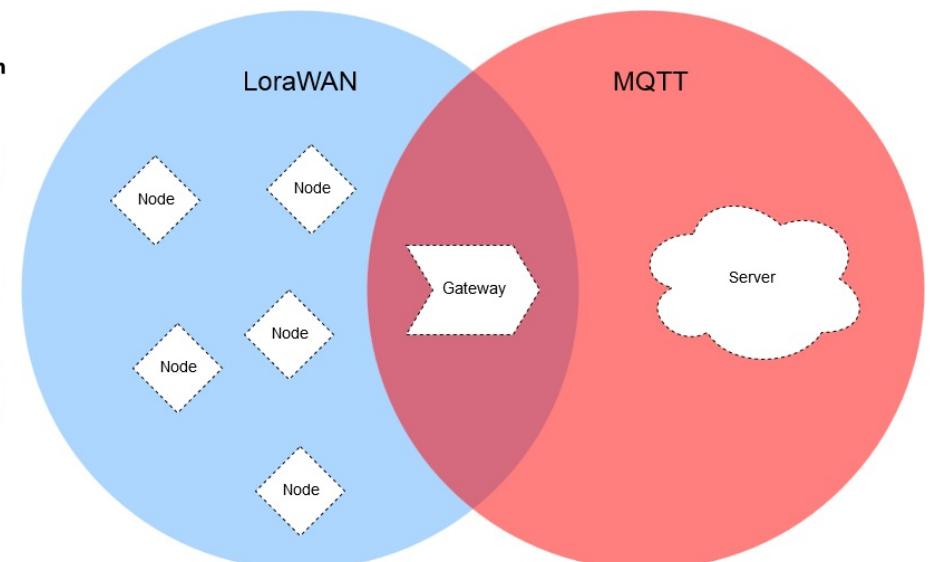
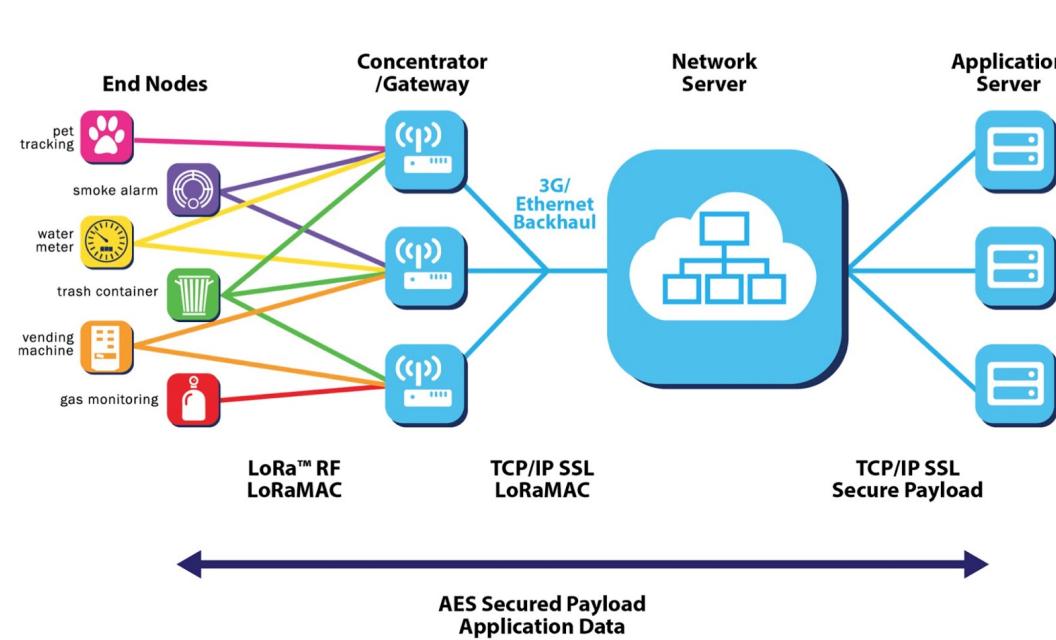
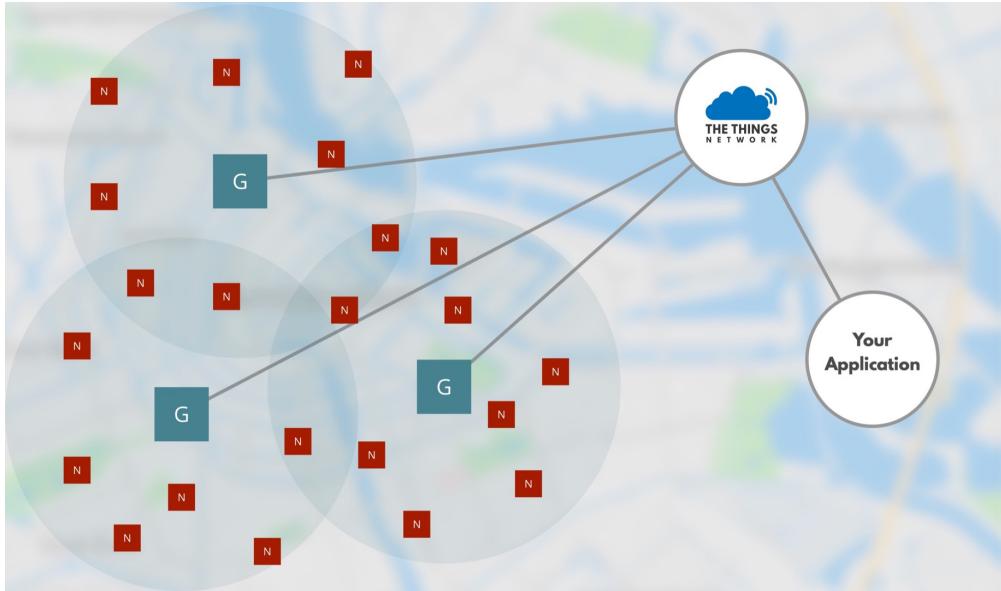


### The Internet of Things Decoupling Producers & Consumers of M2M Device Data



# LORA, LORAWAN

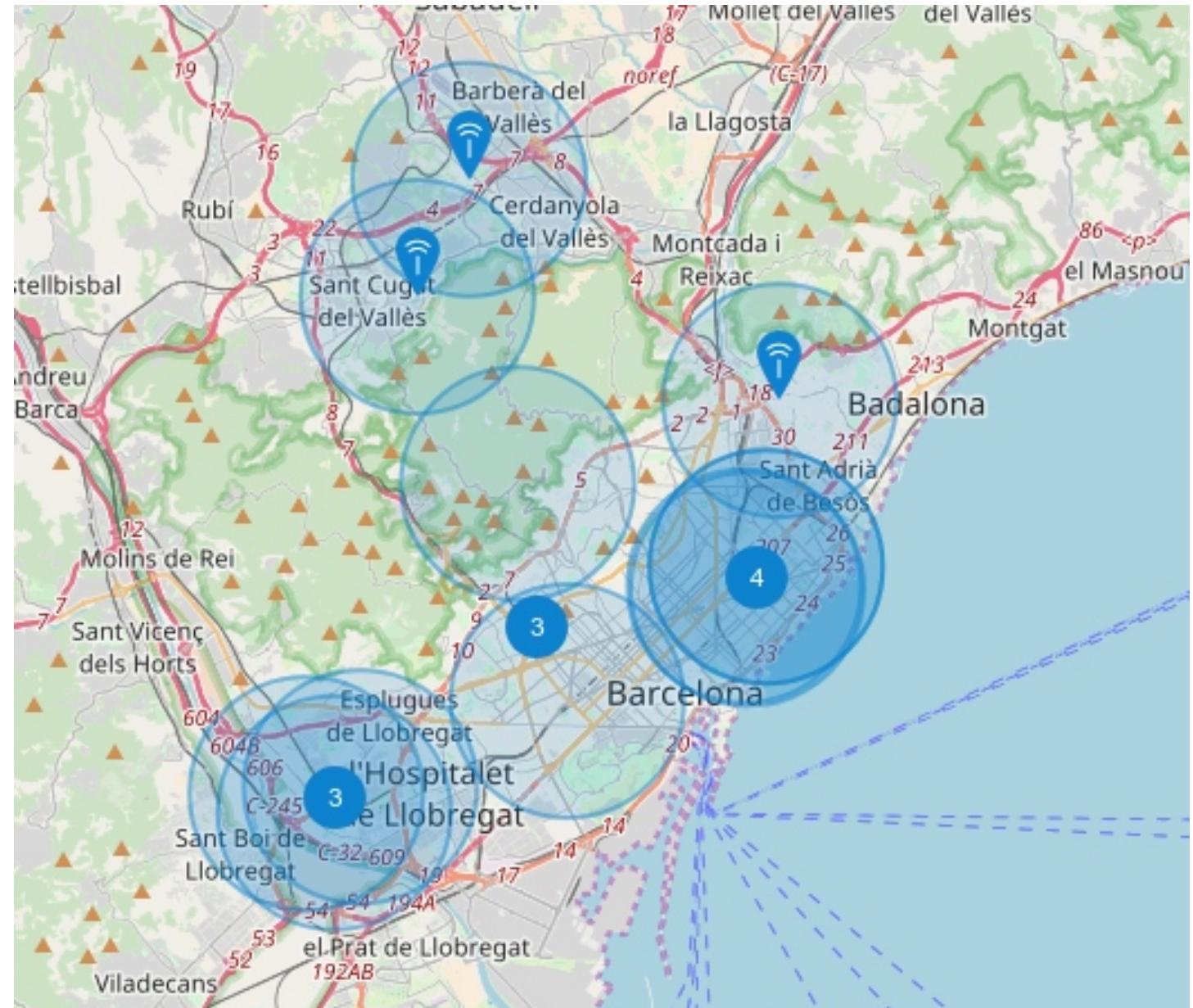
## LONG RANGE RADIO, LORA WIDE AREA NETWORK





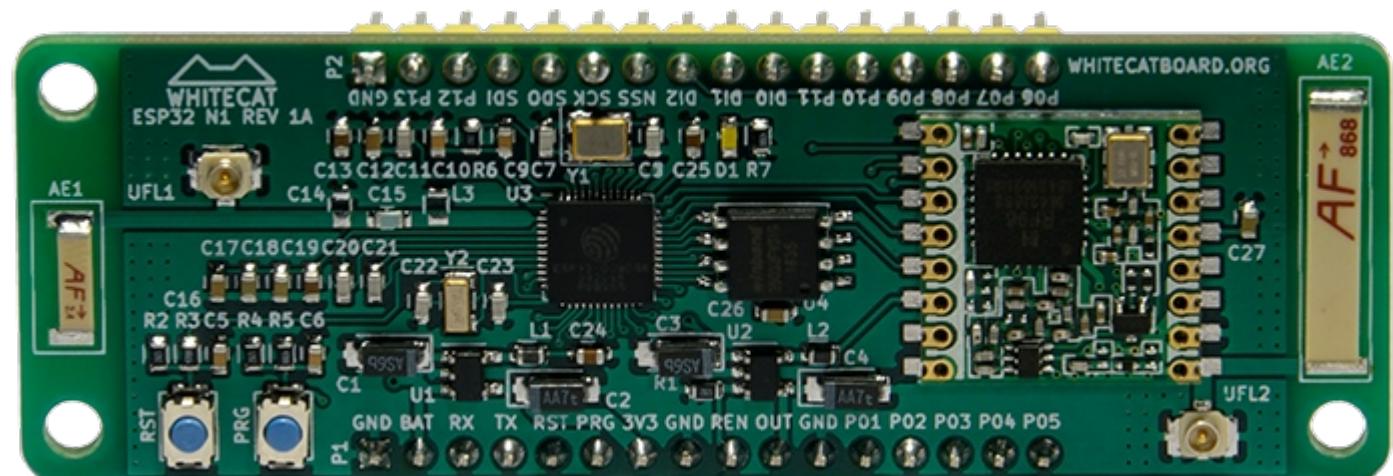
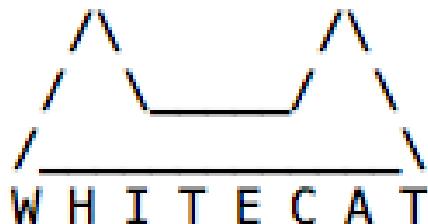
THE THINGS  
NETWORK

# THE THINGS NETWORK



# WHITECATBOARD

WIFI + LORA + BLUETOOTH



```
when board starts
do repeat while true
do set digital pin P6 - GPIO26 to high
  wait 150 milliseconds
  set digital pin P6 - GPIO26 to low
  wait 150 milliseconds
```

The interface includes a toolbar with icons for delete, comments, file, save, and various blocks. A sidebar menu lists categories: Events, Control, Operators, Lists, Variables, Functions, Input / Output, Communications, Sensors, Actuators, Network, Wi-Fi, LoRa, and MQTT. Two main code blocks are shown:

- "when a message is received to topic `“ ”` with QOS0 with: length, payload" (with a receive message icon)
- "publish `“ ”` to topic `“ ”` with QOS0" (with a publish message icon)"

# PRODUCTES COMERCIALS

Philips Hue



Nest



Itead Smart Home



Samsung



Simon 100



emberlight



Wink



Ikea tradfri

# ASSISTENTS DE VEU

Amazon echo



Google Home



Apple homePod



SEAT



FORD



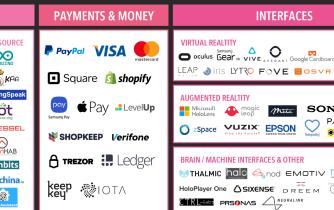
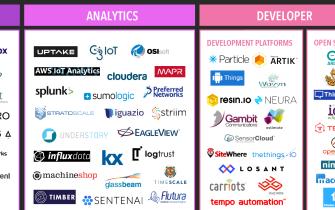
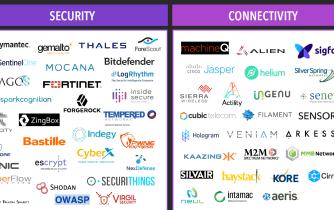
# COMPANIES IOT

## Internet of Things Landscape 2018

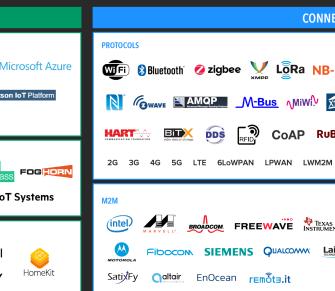
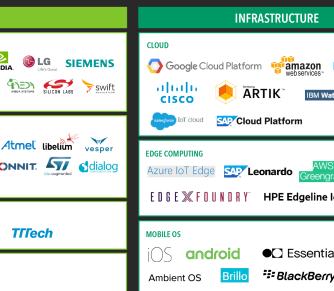
## APPLICATIONS (VERTICALS)



#### PLATFORMS (HORIZONTALS)



BUILDING BLOCKS



© Matt Turck (@mattturck), Demi Obavomi (@demi\_obavomi) & FirstMark Capital (@firstmarkcap)

*Final version, revised and updated as of February 7, 2018*

FIRSTMARK  
EARLY STAGE VENTURE CAPITAL

# Link document original

# SENSORS

- ✓ Sensor de pols
- ✓ Sensor de qualitat de l'aire
- ✓ Sensor de gas
- ✓ Sensor de gas
- ✓ Sensor d'alcohol
- ✓ Sensor de pH
- ✓ Sensor de pluja
- ✓ Sensor de pluja
- ✓ Sensor nivell d'aigua
- ✓ Sensor de temperatura i d'humitat hambiental
- ✓ Sensor de temperatura submergible
- ✓ Sensor d'humitat del terra
- ✓ Sensor d'humitat del terra
- ✓ Sensor de distància
- ✓ Sensor de distància



# BLYNK APP

smartHome

EX 7

Q13 Q13 Q0 Q2 Q15 Q15

OFF OFF OFF

TEMP HUM

24 55

Q5 Q6

D5 D6

SLIDER V22: 40

TAB 1 TAB 2

Type here

TERMINAL

Type here

IoT-01

Q3 Q7 QA3 Q9

D3 D7 A3 D9

I2 Q3 I8 Q7 IA1 QA3 IA2 Q9

TEMP HUM

24 55

Q5 Q6

D5 D6

SLIDER V22: 40

TAB 1 TAB 2

smartHome

EX 7

Q13 Q13 Q0 Q2 Q15 Q15

OFF OFF OFF

TEMP HUM

24 55

Q5 Q6

D5 D6

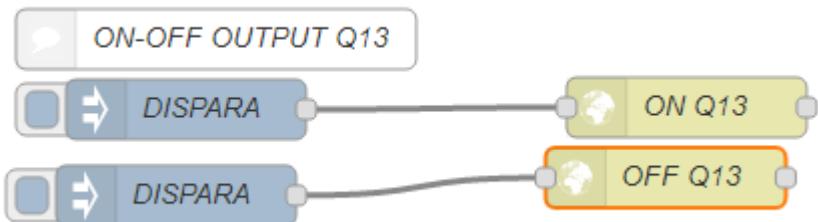
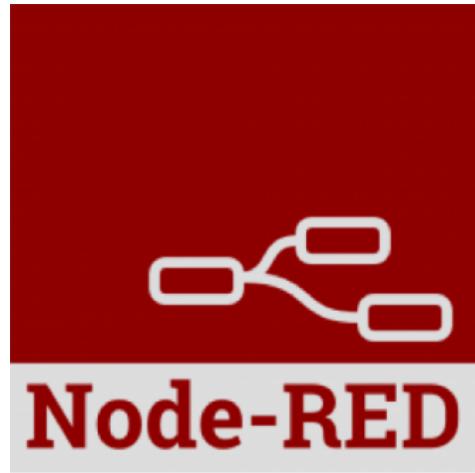
SLIDER V22: 40

TAB 1 TAB 2

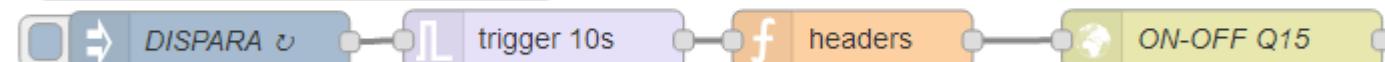
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TERMINAL

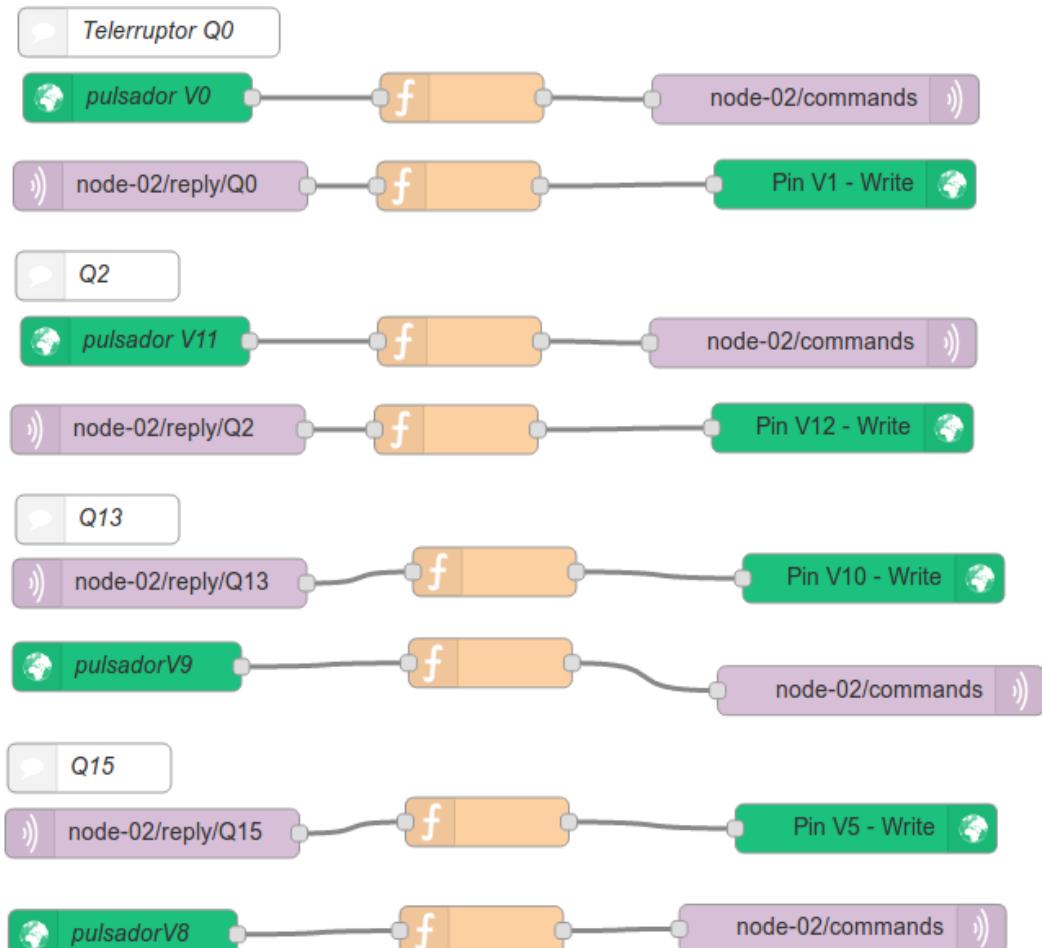
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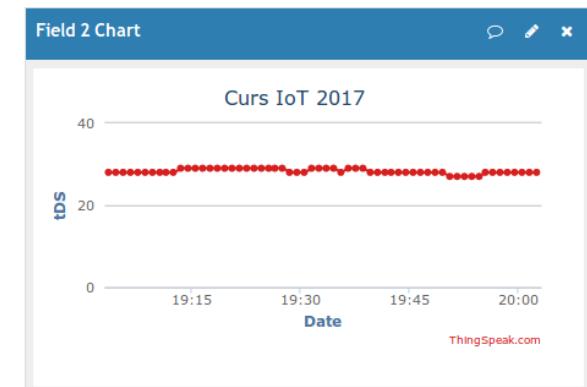
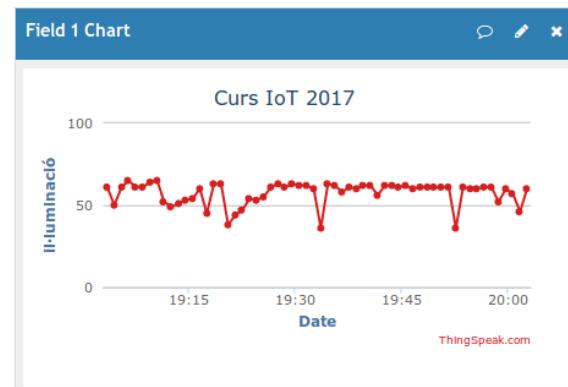


INTERMITÊNCIA OUTPUT Q15



ON-OFF Q7 telegram





Add devices and datasources

freeboard

DATASOURCES

Sensors	12:26:33 AM		
Weather	12:58:23 AM		
Clock	12:58:26 AM		

19:45 20:00

ThingSpeak.com

CURRENT TIME

12:58:26 AM

WEB CAM

MAP

Google Map Data Terms of Use Report a map error

LOCAL CONDITIONS

Outside Temp

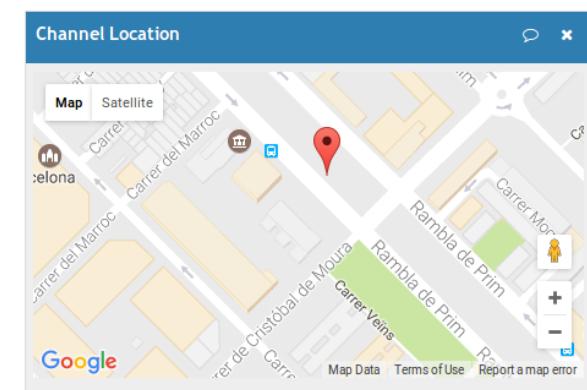
27 F

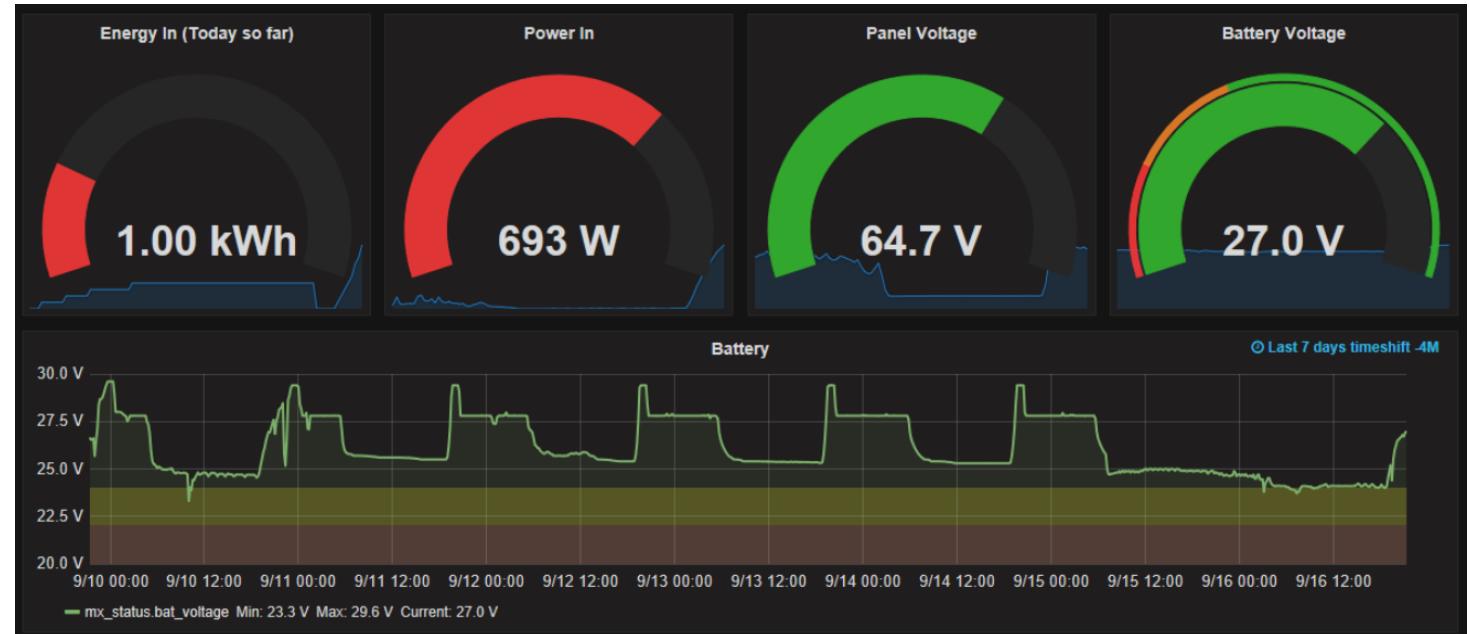
MOTION DETECTION

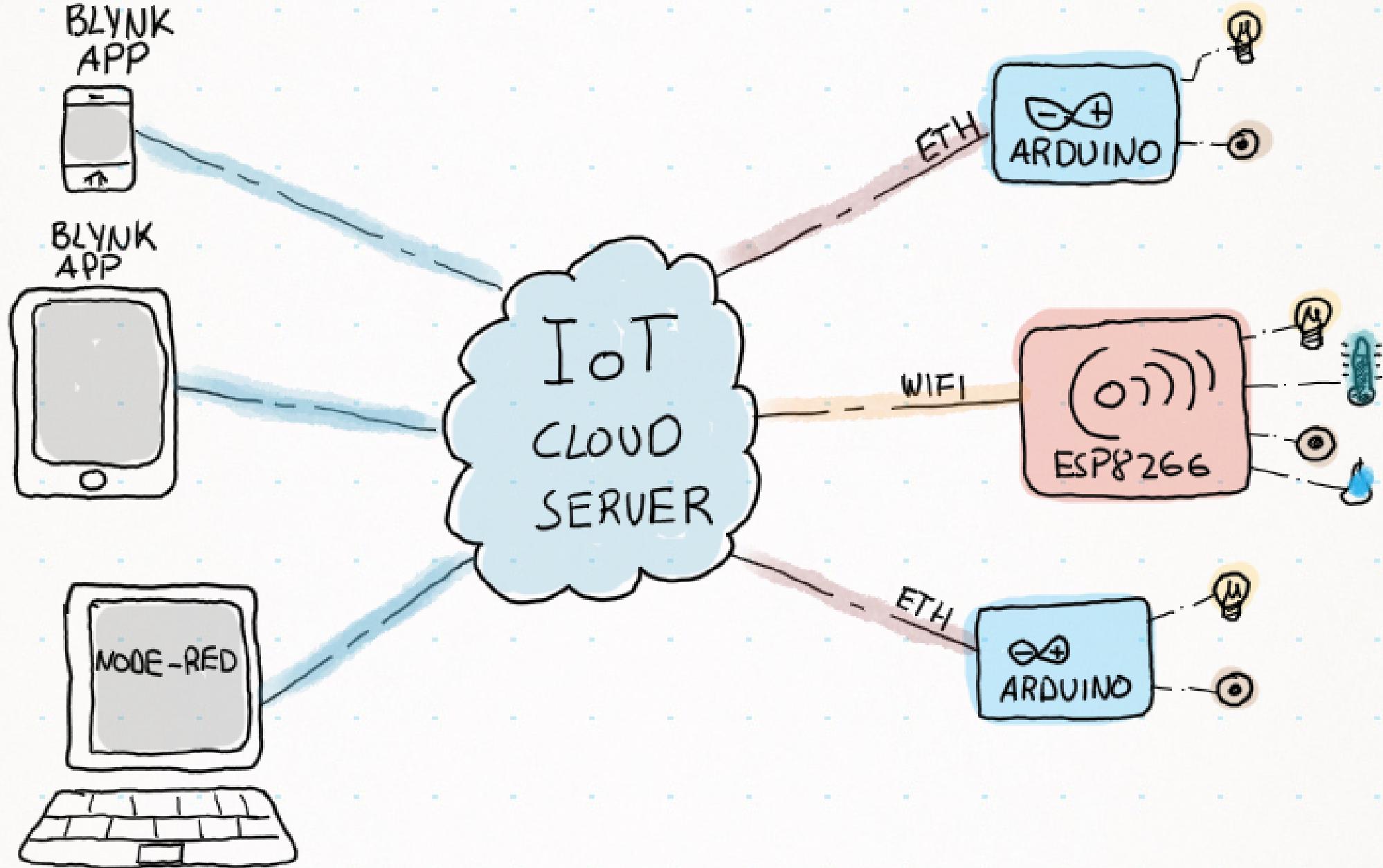
X Accelerometer

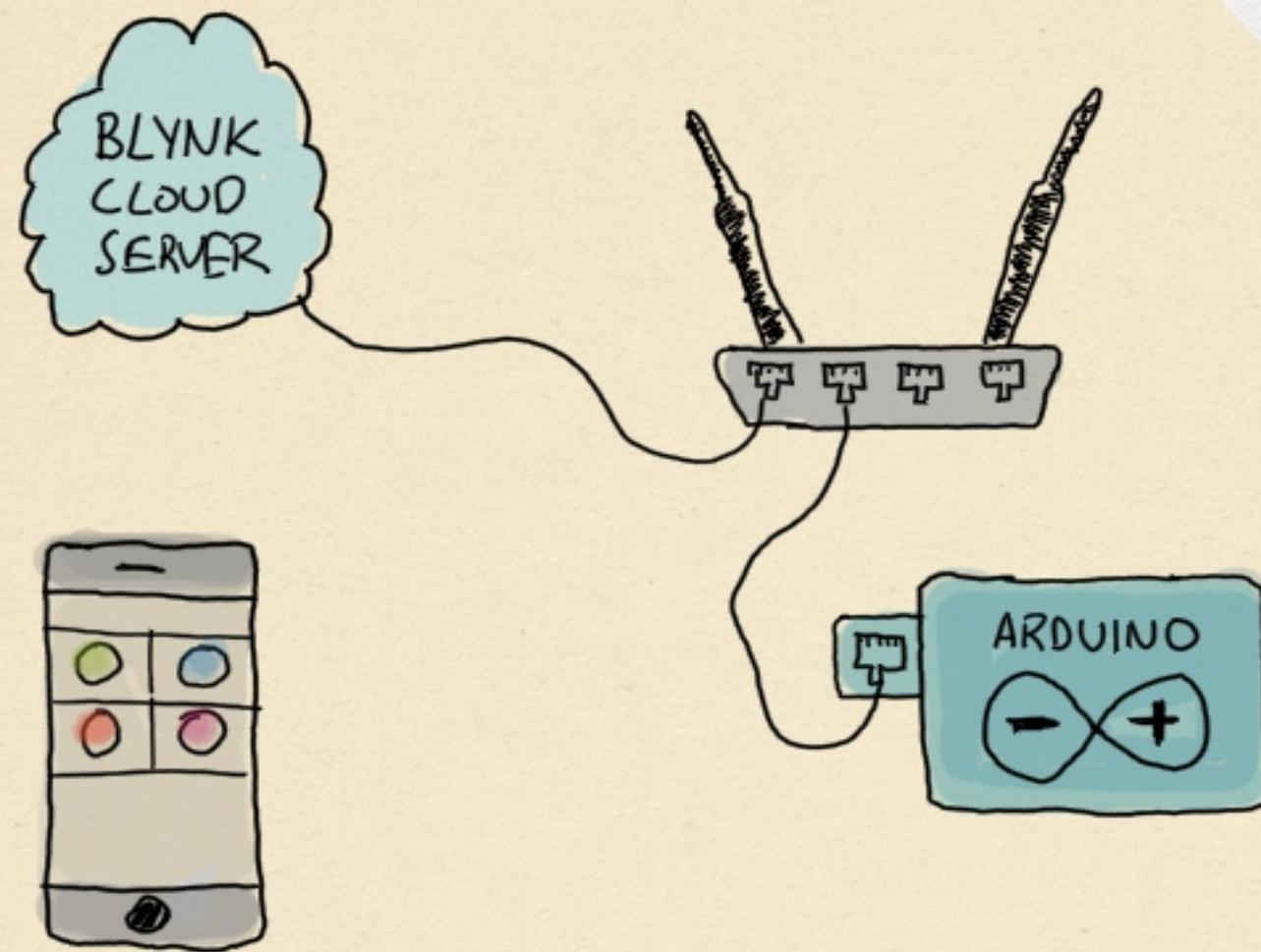
2

FULLSCREEN SHARE CLONE

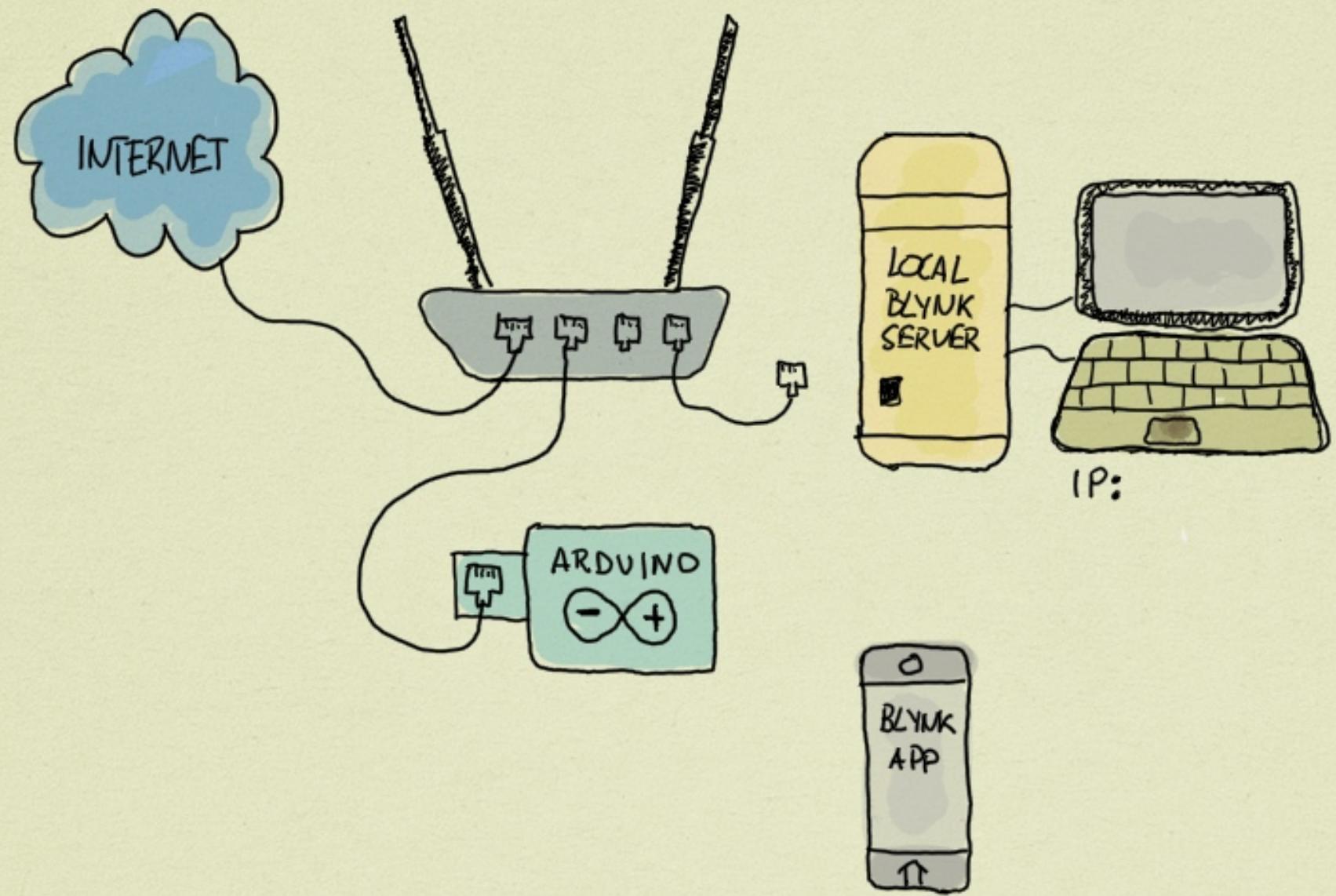


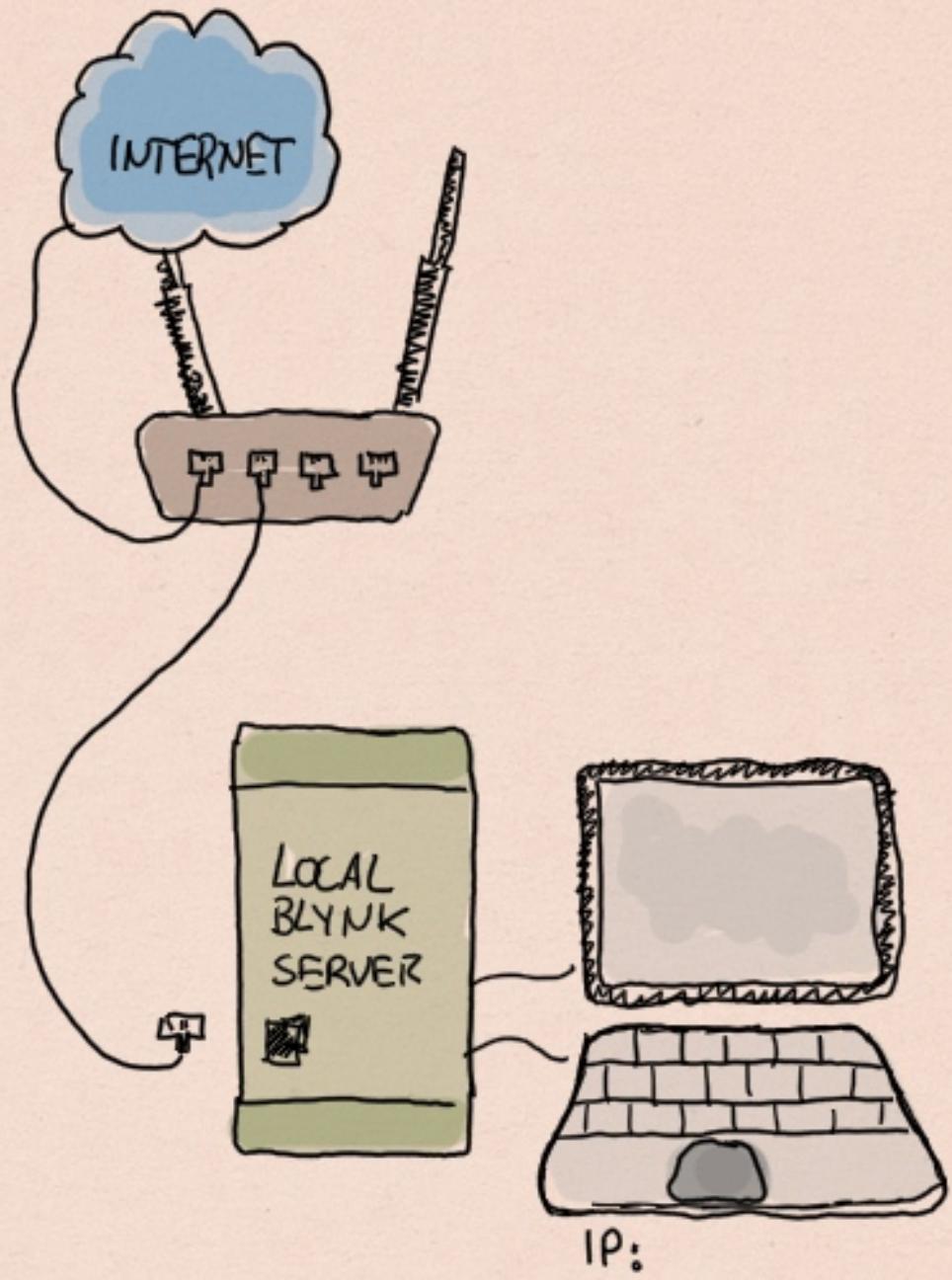
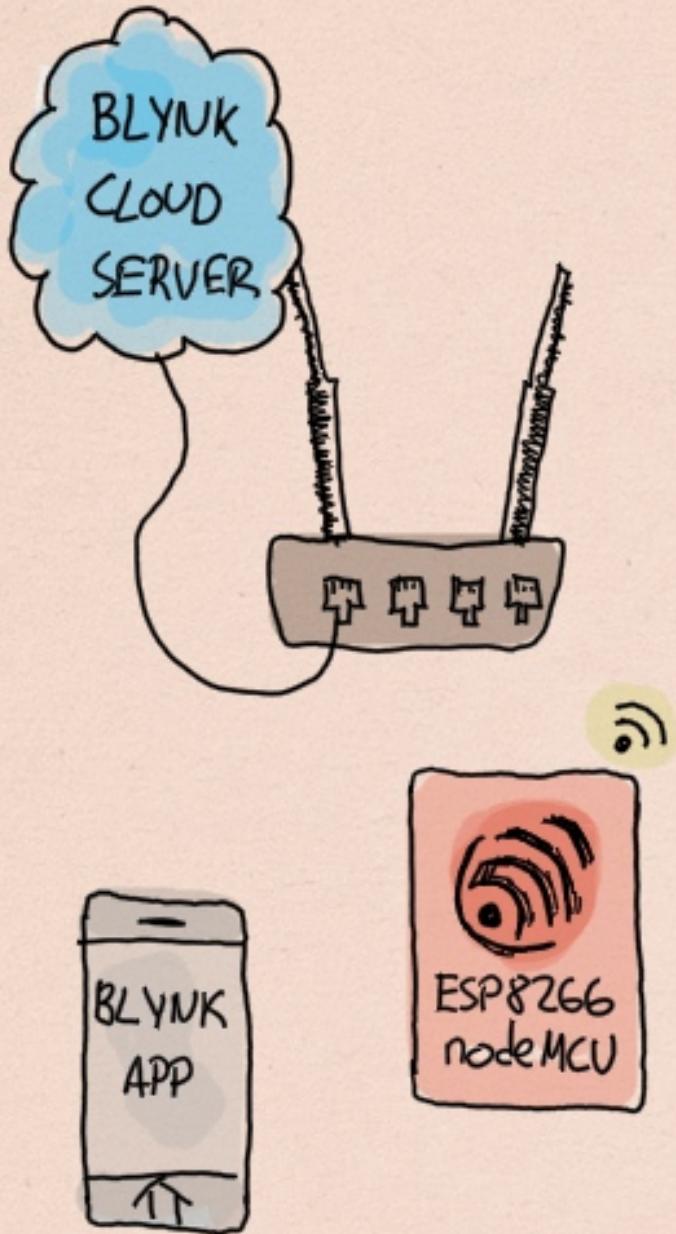






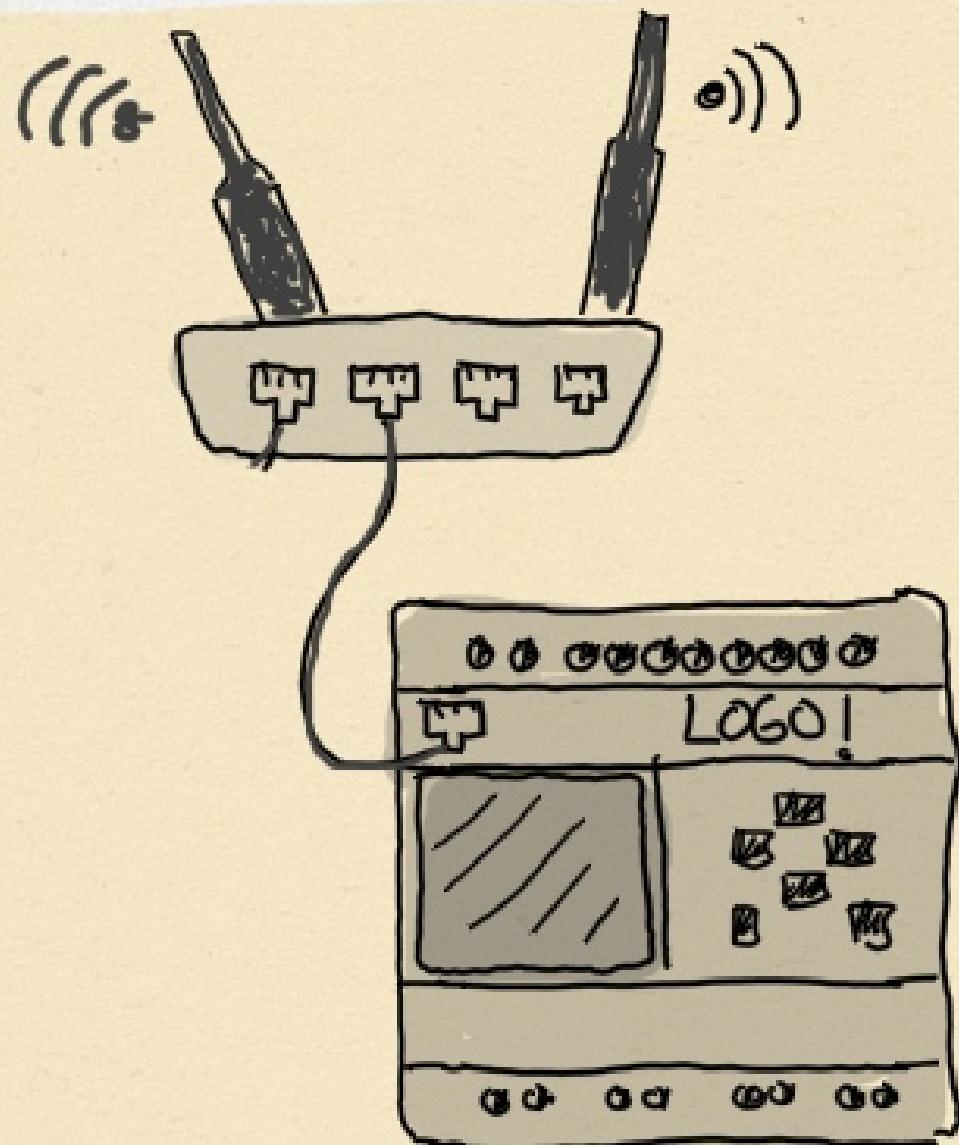
© JAUME NOGUÉS



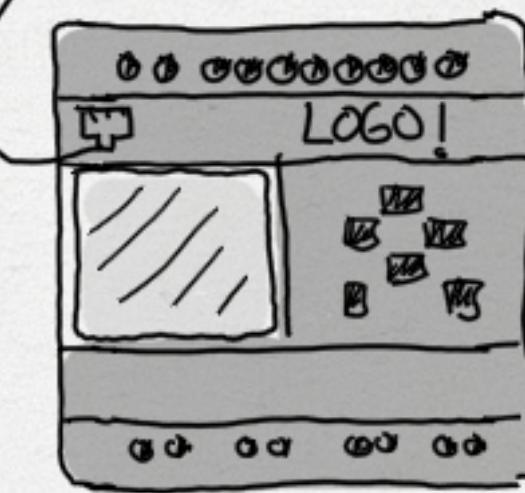
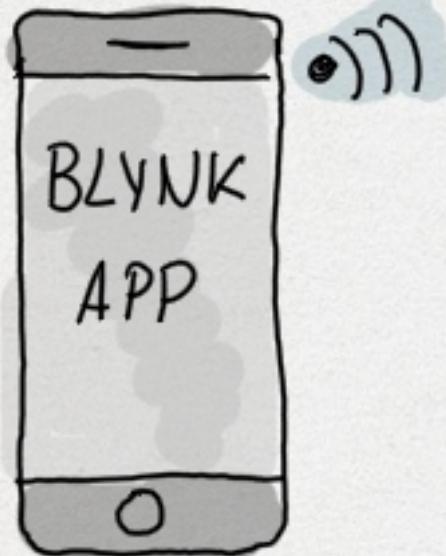
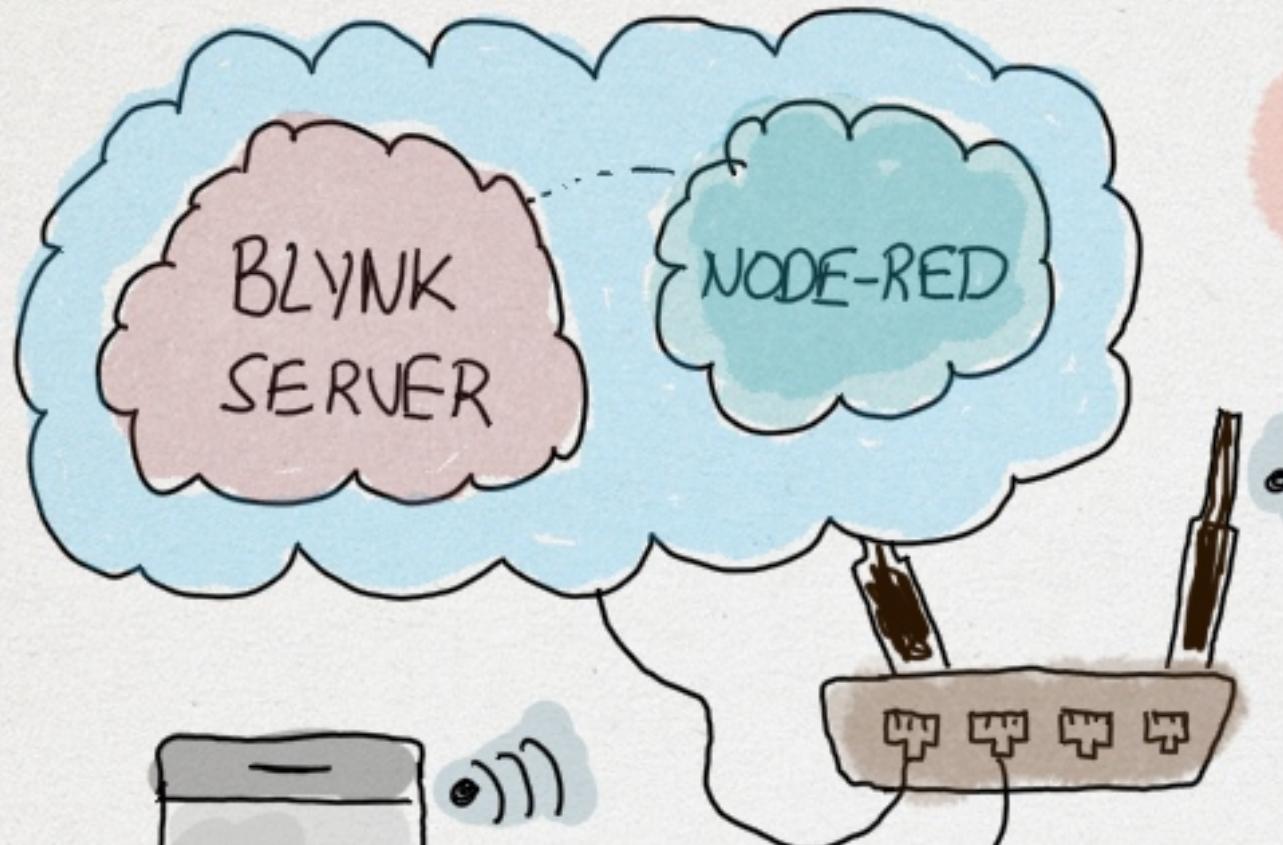


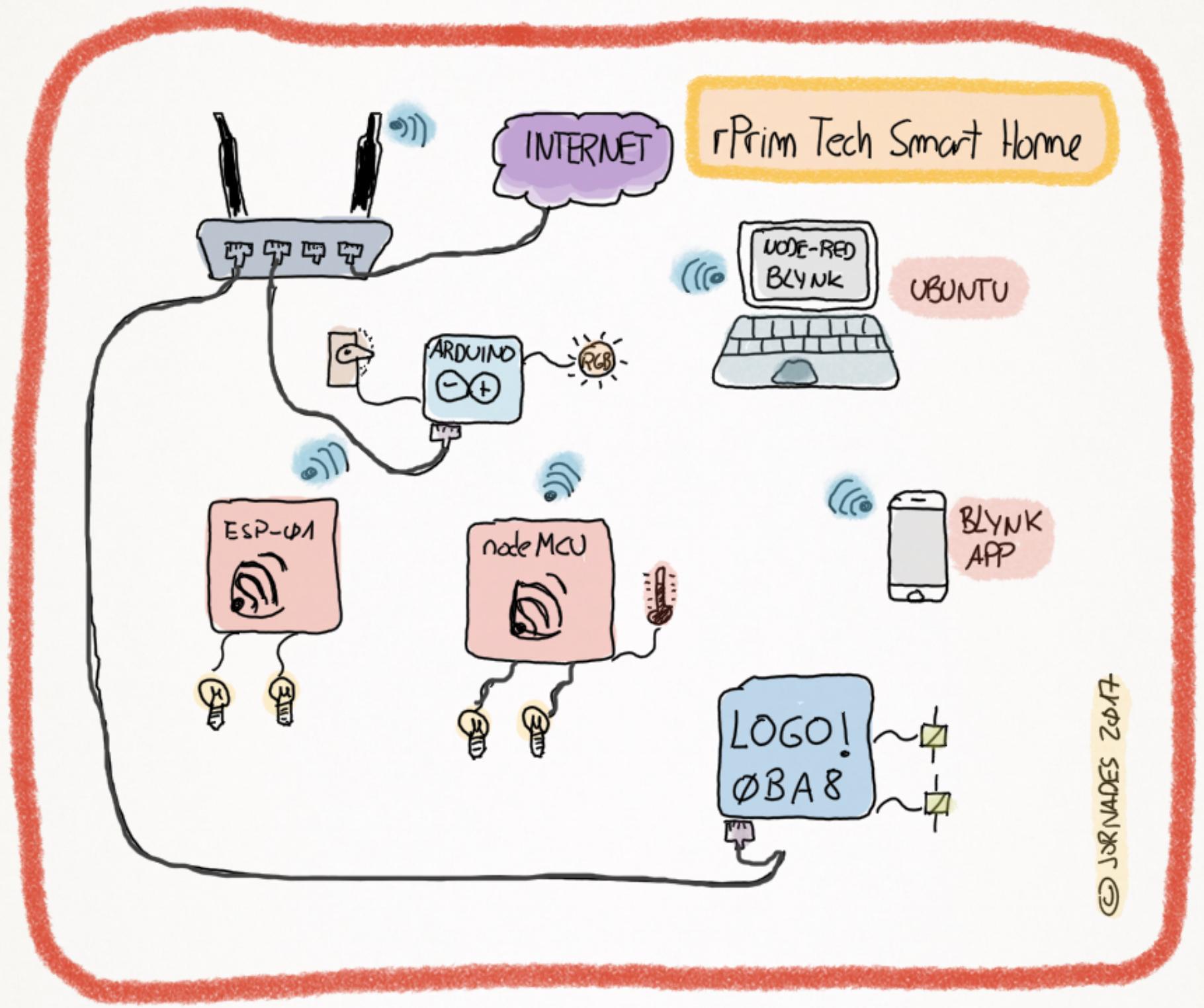


ESP8266

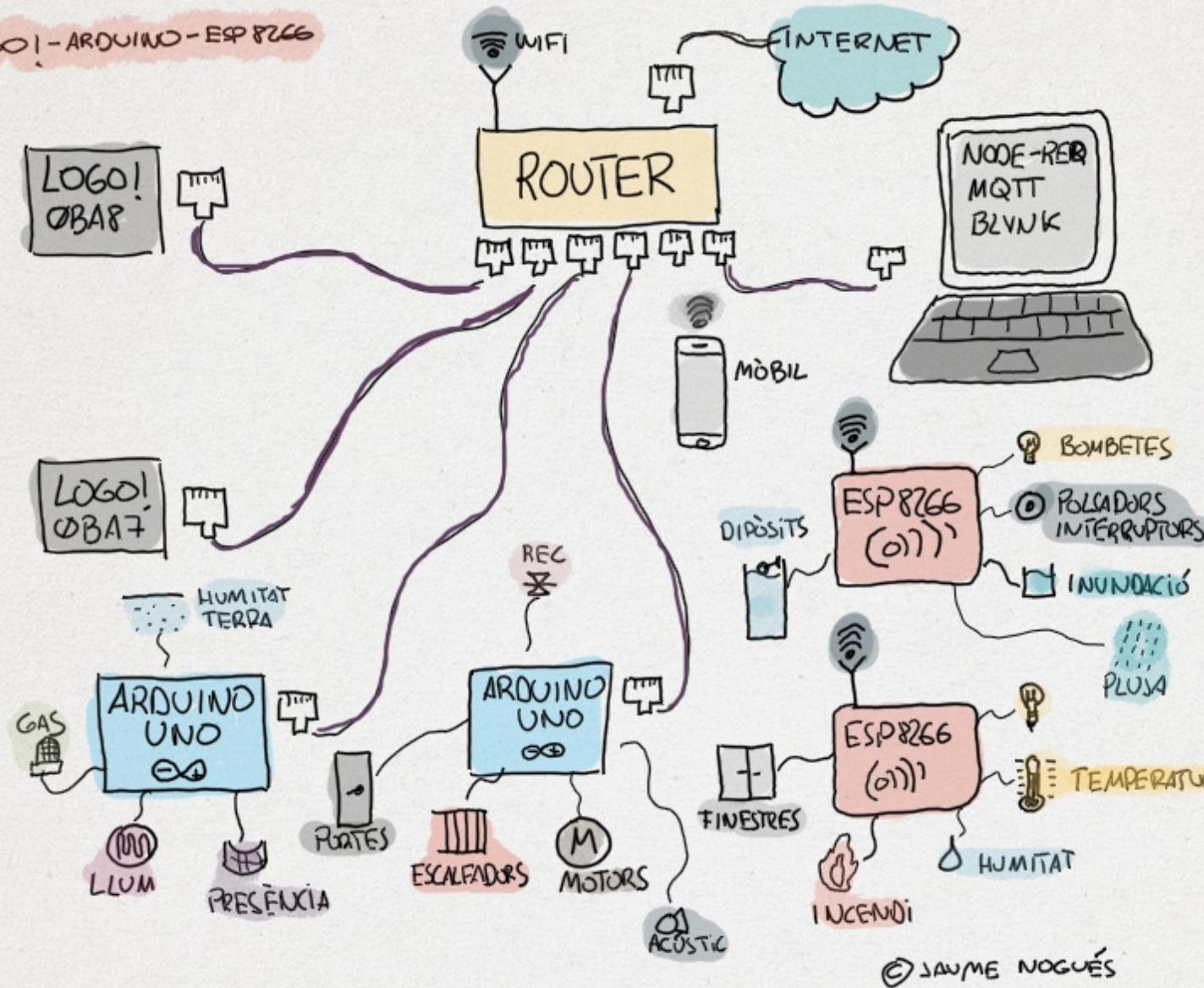


BLYNK  
&  
LOGO!



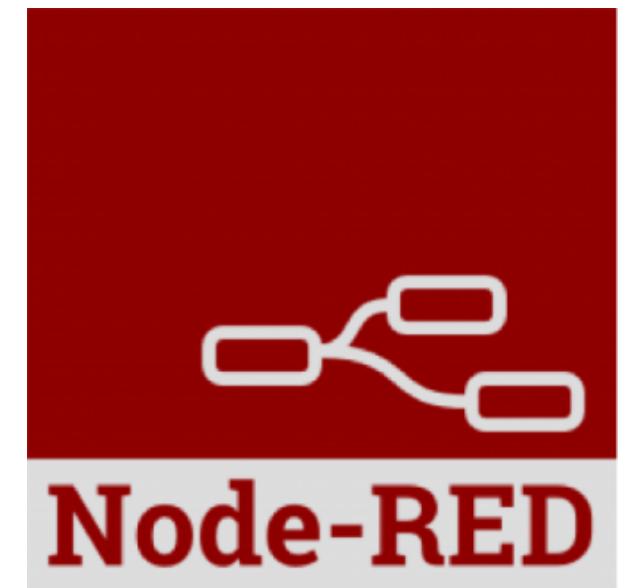
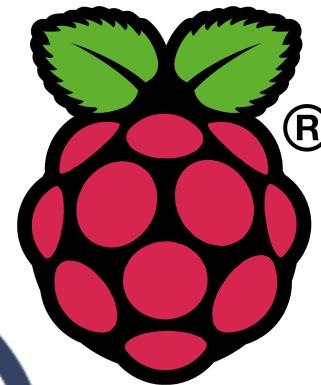


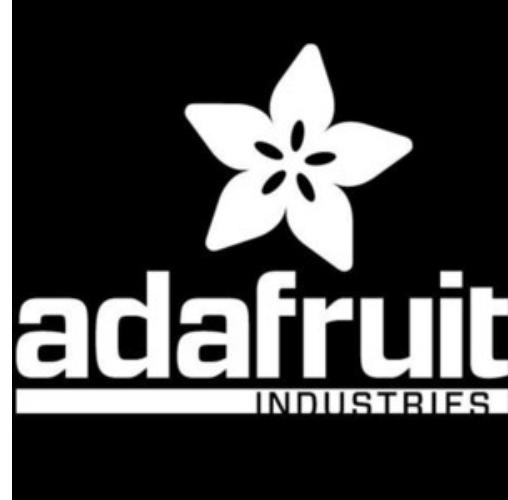
LOGO! - ARDUINO - ESP 8266





freeboard





Particle



Bluetooth®

GRÀCIES PER LA VOSTRA ASSISTÈNCIA



JNOGUES@GMAIL.COM



[HTTP://RPRIMTECH.TK](http://RPRIMTECH.TK)

INS RAMBLA PRIM

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