



@Anth0_



SIGFOX doesn't sell chipsets

SIGFOX doesn't build solutions

SIGFOX invented a radio protocol

SIGFOX operates its own global network



Core concepts





An object emits a radio message

Our antennas pick this message

We transmit this message to your server



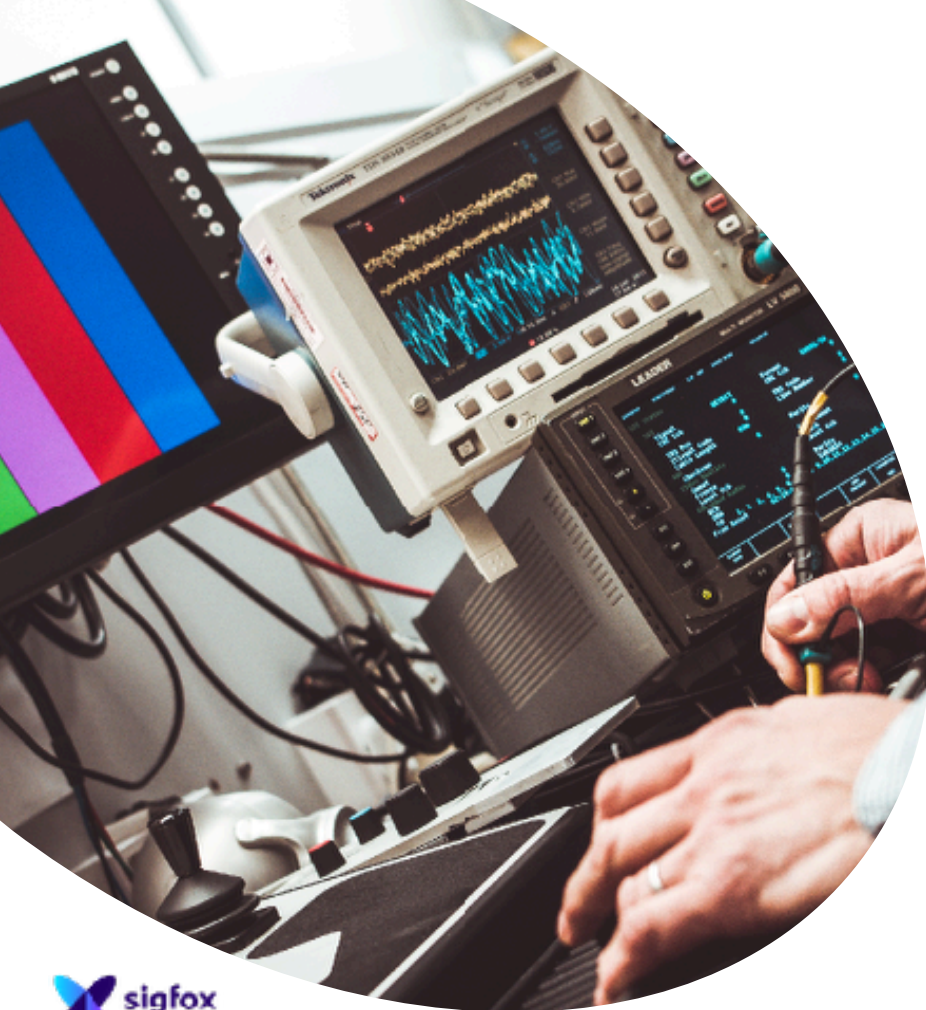
Complex ?

You send an **AT command** :

```
SigFox.print(« AT$SF=Payload »);
```

You receive the answer **on your server**

via **Callbacks** or **API**



Complex ?

Develop, subscribe, & certify **once**
& ship everywhere (inside Radio Zones)

Very cheap to develop Sigfox solutions &
deploy it. (between 1 and 10€/year)



Long range

Ideal cases

+200 kms(record at 1024)

Reality

City : 2-10 km

Rural : up to 100km.

= Network cheaper to deploy.

ETSI Regulation

1% emission each hour rule.

1% of 1 hour = $3600 \text{ sec} / 100 = \mathbf{36 \text{ secs of emission}}$

1 message sigfox = **6 seconds**

So we can send $36/6 = \mathbf{6 \text{ messages per hour (12 bytes)}}$

Low cost != cheap

Very low subscription fees **but high SLA**

- (in deployed environments, success rate is >99%)

Simple hardware = **higher battery life**

- Only technology able to predict battery life consumption

Discrete objects = **a lot of them**

- more objets on the network mean cheaper price for customers

Different & complementary

- We don't compete with others, we **complete** them.
- So cheap & easy to integrate, lots of use case will use Sigfox as **primary** or **secondary**.
- Sigfox + (GSM, BLE, WiFi, LoRa, & others) makes a lot of sense
- It whole depends of the **use case**.

Spot it

- New geolocation service based on triangulation of BTS
- Works with all devices on our network, no additional cost
- KM accuracy , depends on density.
- Perfect for most of industrial tracking use cases



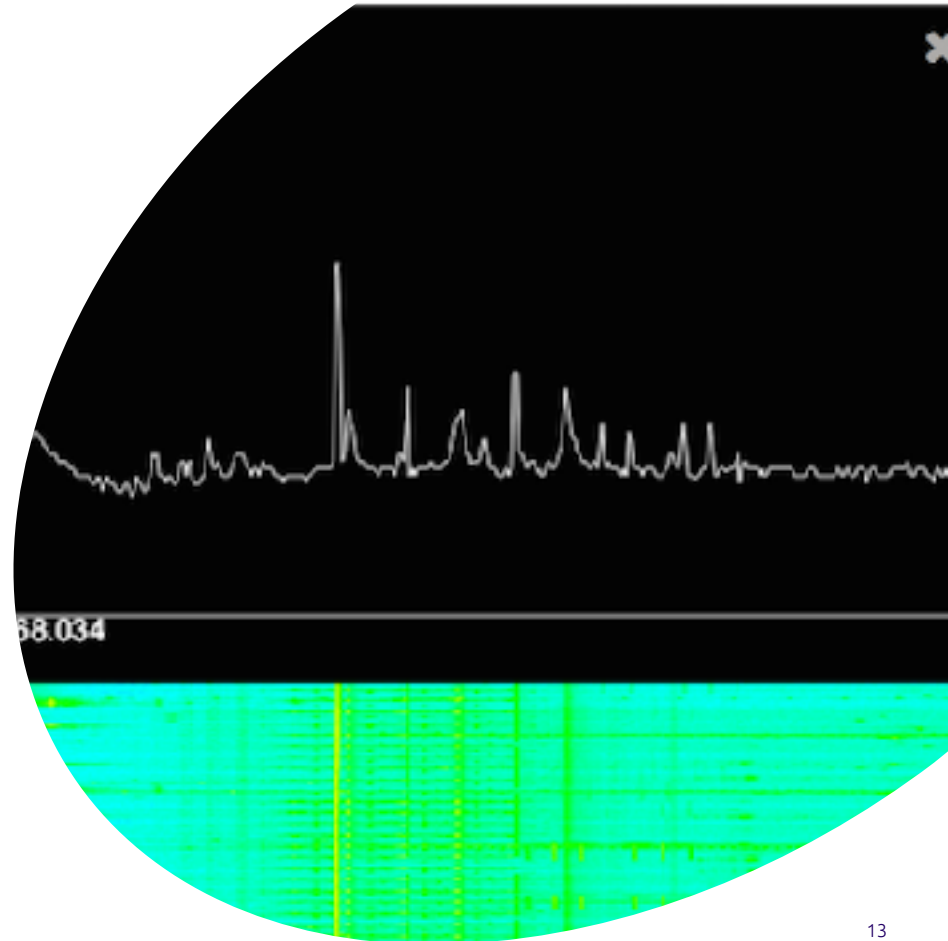
Ultra Narrow Band



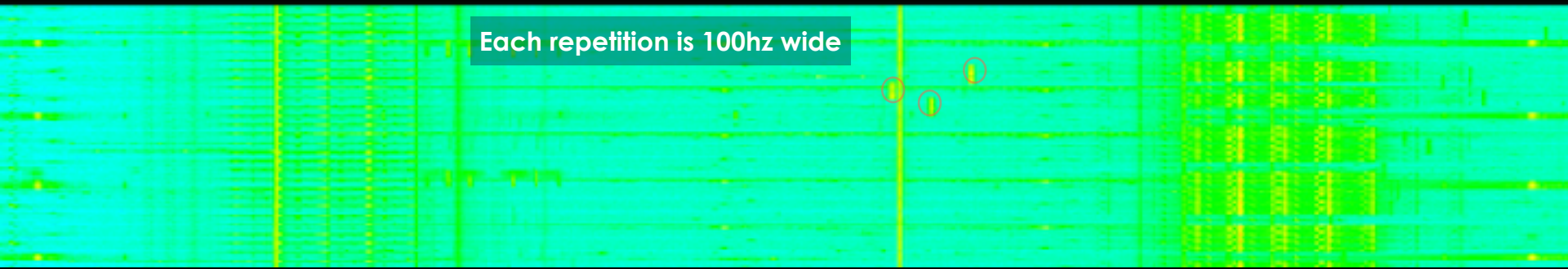
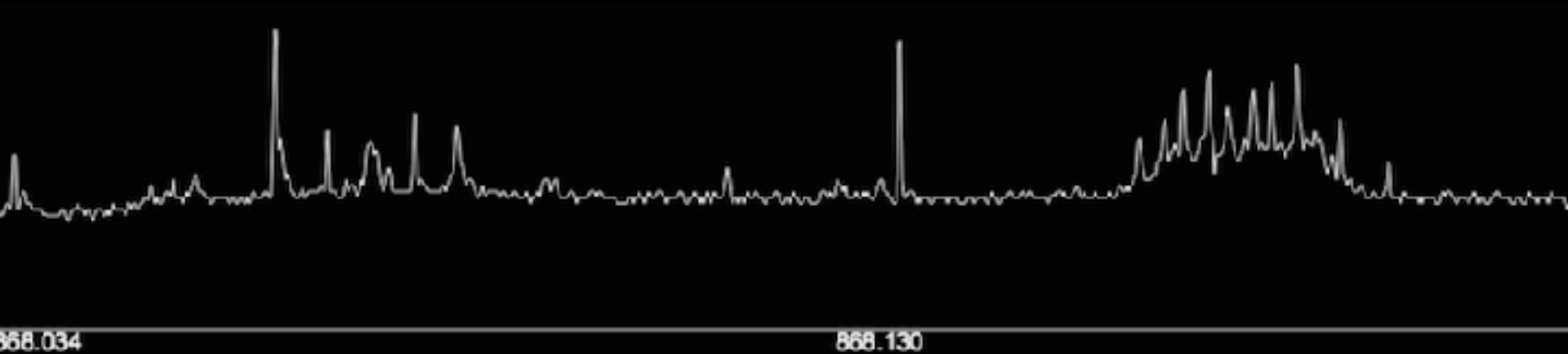
Radio Spectrum

We listen **200 KHz** on the band
(we could do more)

each message is **100Hz wide**

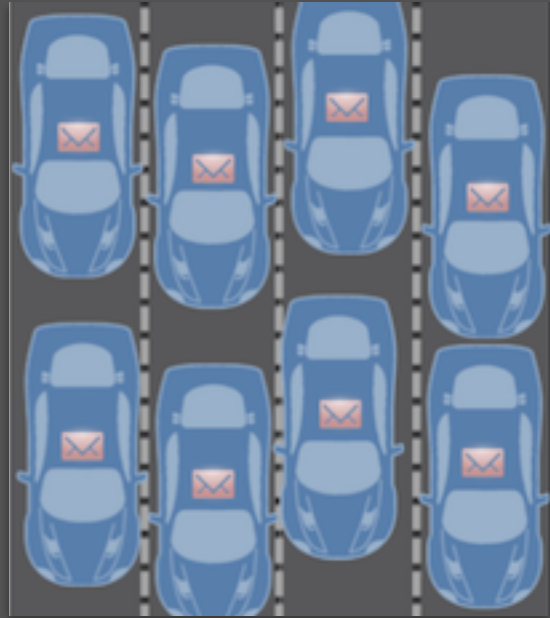


Radio spectrum



Each repetition is 100hz wide

Why UNB ?



Frequencies

ISM bands : **Shared** and **non-licensed**

Comply with local regulations

- Europe : **868MHz** (ETSI 300-200)
- USA: **902MHz** (FCC part 15)
- etc.



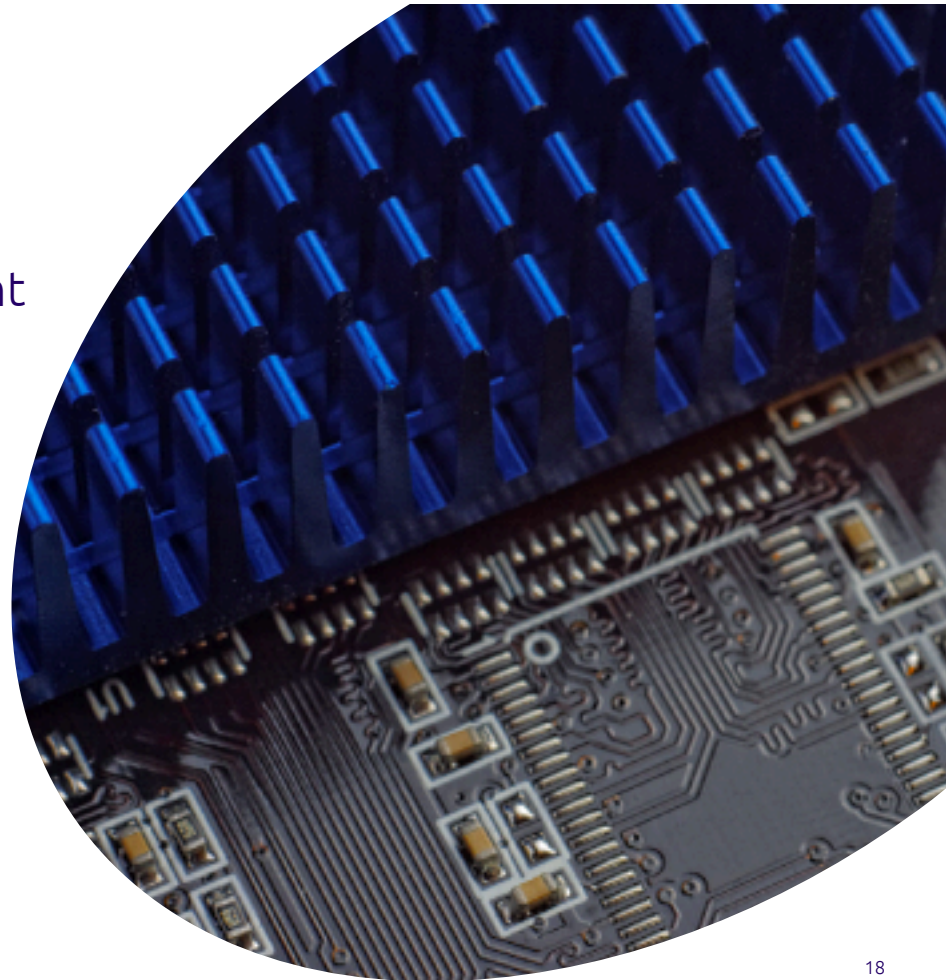


Hardware solutions



Stack

- Stack is **free**, everybody can implement
- Preloaded with modules & SoC
- Can be integrated in compatible transceivers
- Distributed as binaries, compiled for various MCUs
- Can be integrated in most of compatible Sub-GHZ HW



Lots of different options for different needs

Modules : Easy to integrate, start at <2\$

- TDNext, ATIM, Wisol, Innocom, M2COMM, etc. Lots of good options

SoCs : based on ref designs, a bit more modular

- ONSem, NXP (Qualcomm) , Atmel (Microchip) etc.

Transceivers : implement the stack yourself

- STMicro, Texas Instruments, Semtech, etc.

Open ecosystem = fair competition on prices
important to ensure maximum number of use cases.

How to start ?

Couple of minutes

Lots of devkits available (from 20€)

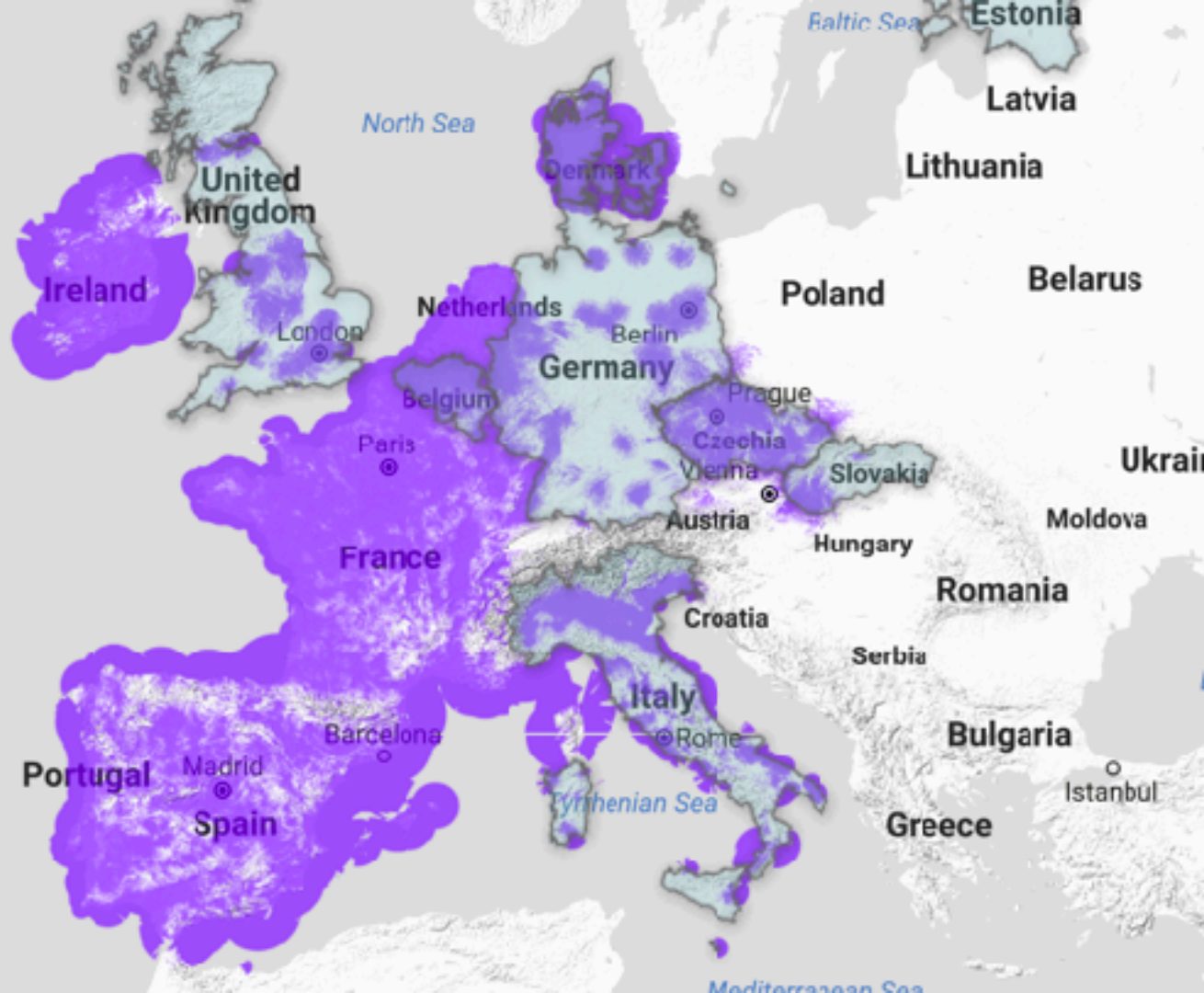
Connectivity is included for developers





Coverage



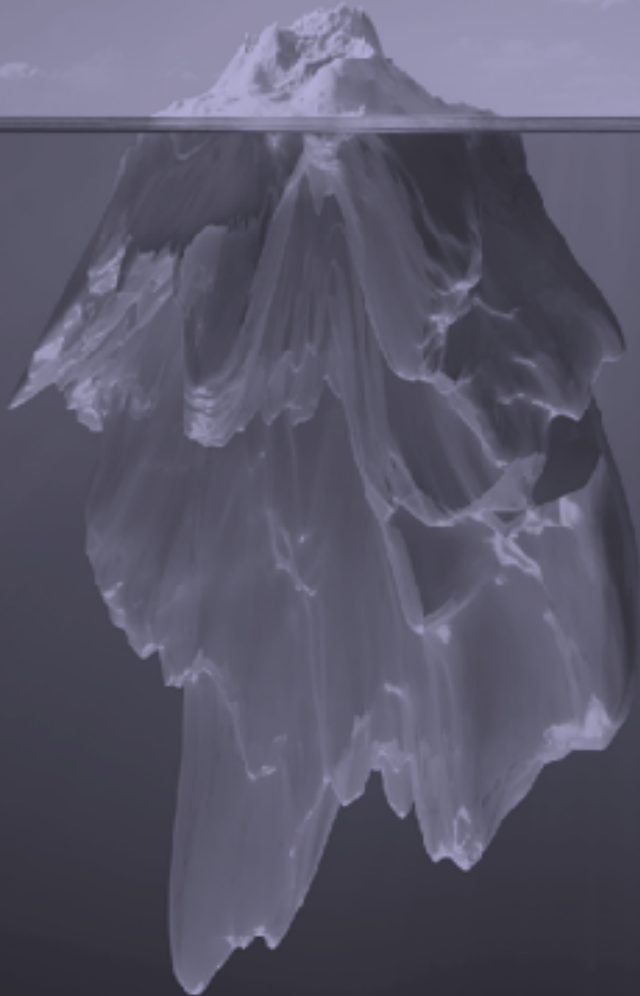




Use cases

Examples of solutions already in production

Gadgets



Water
metering



silver economy



Smart parking

IoT

Predictive maintenance

Connected beer



Connected
Pallets



CAPTURS

Outdoor tracker



Oil & Gas
tank monitoring



ELM Leblanc
Connected boiler





SensDumpster
Connected trash



Weenat

Agriculture sensors