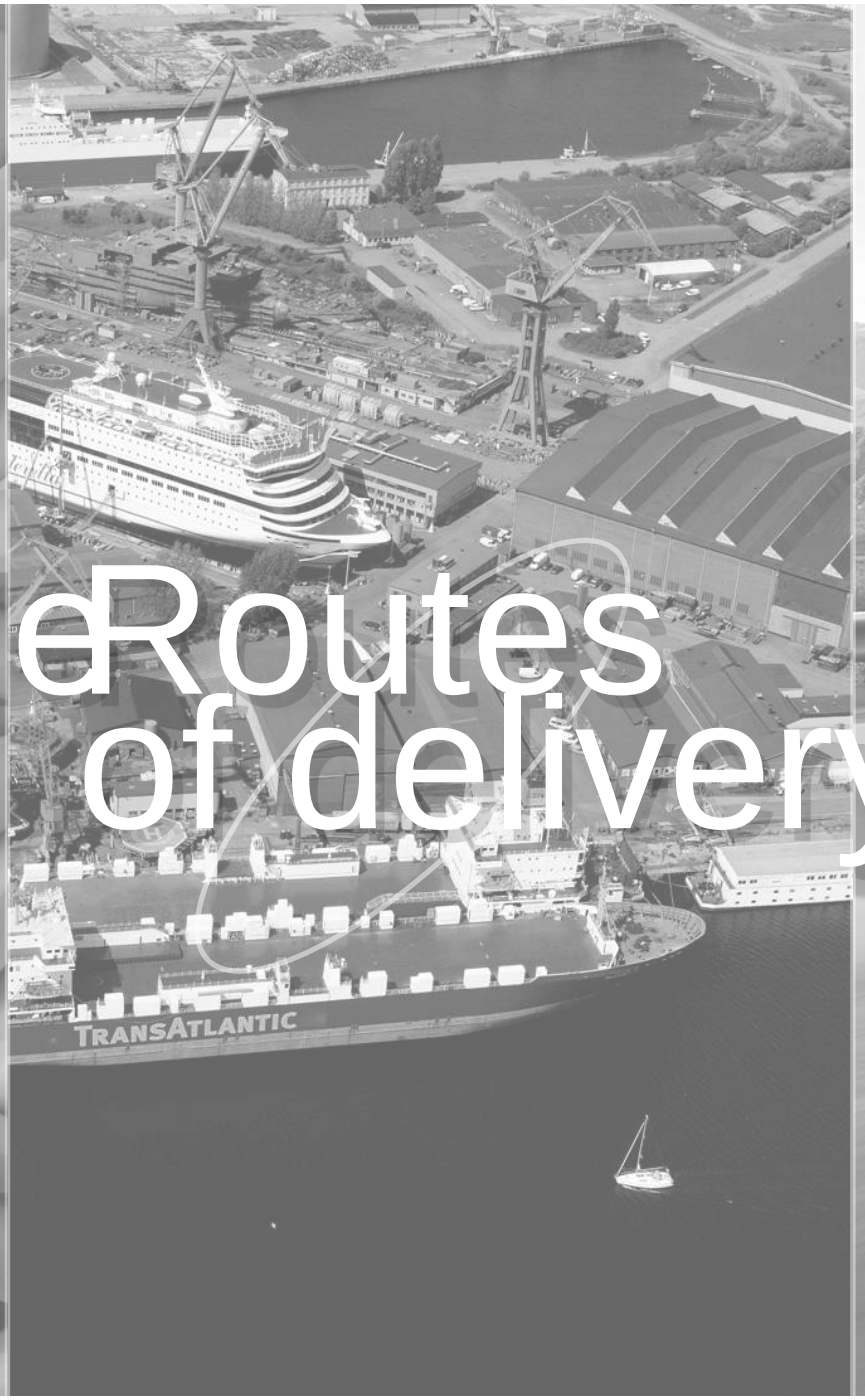
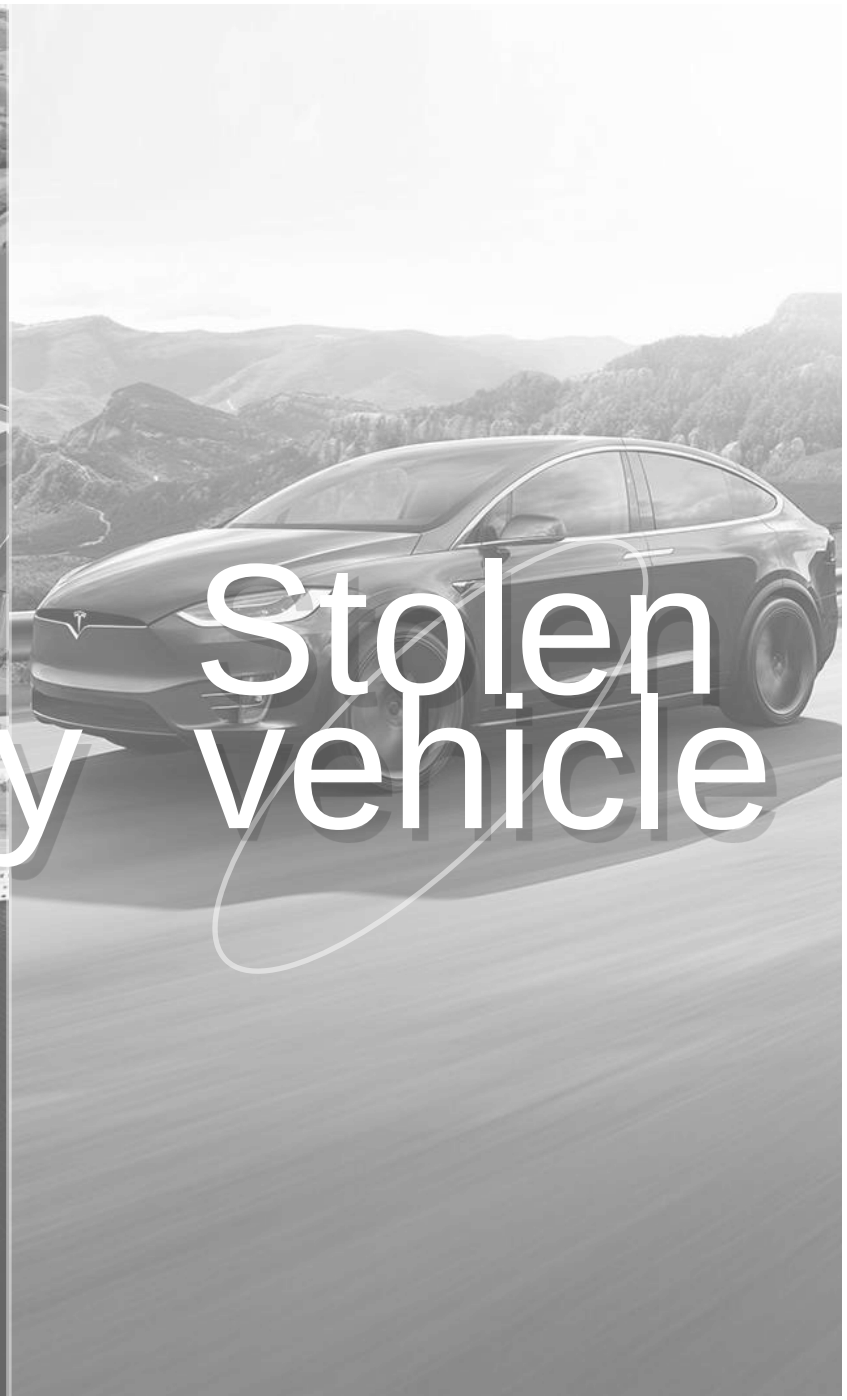
SIGFOX
and Internet of Things :
We are making things alive

November 14, 2017

Perishable goods



Routes of delivery



Stolen vehicle

simple. reliable. global.

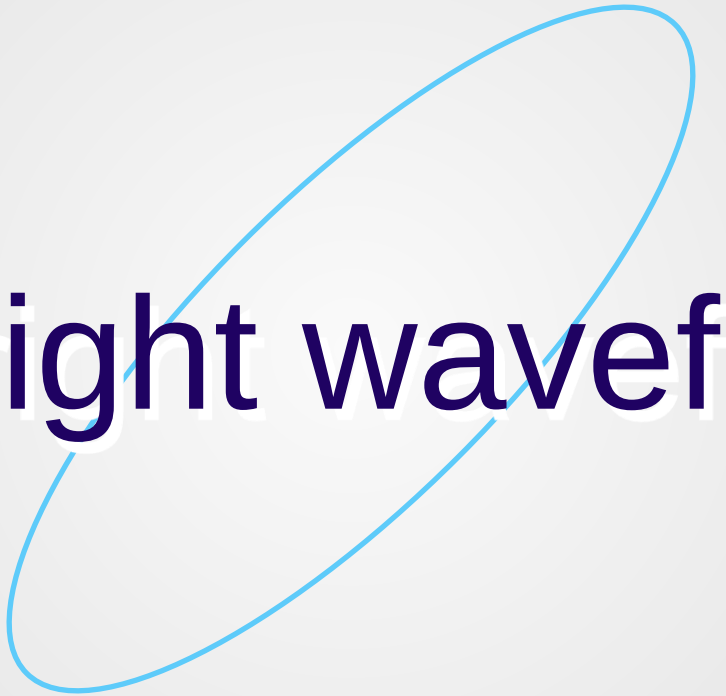
Paradoxe and rationals behind Massive IoT

The paradoxe and rationals behind MTC and IoT

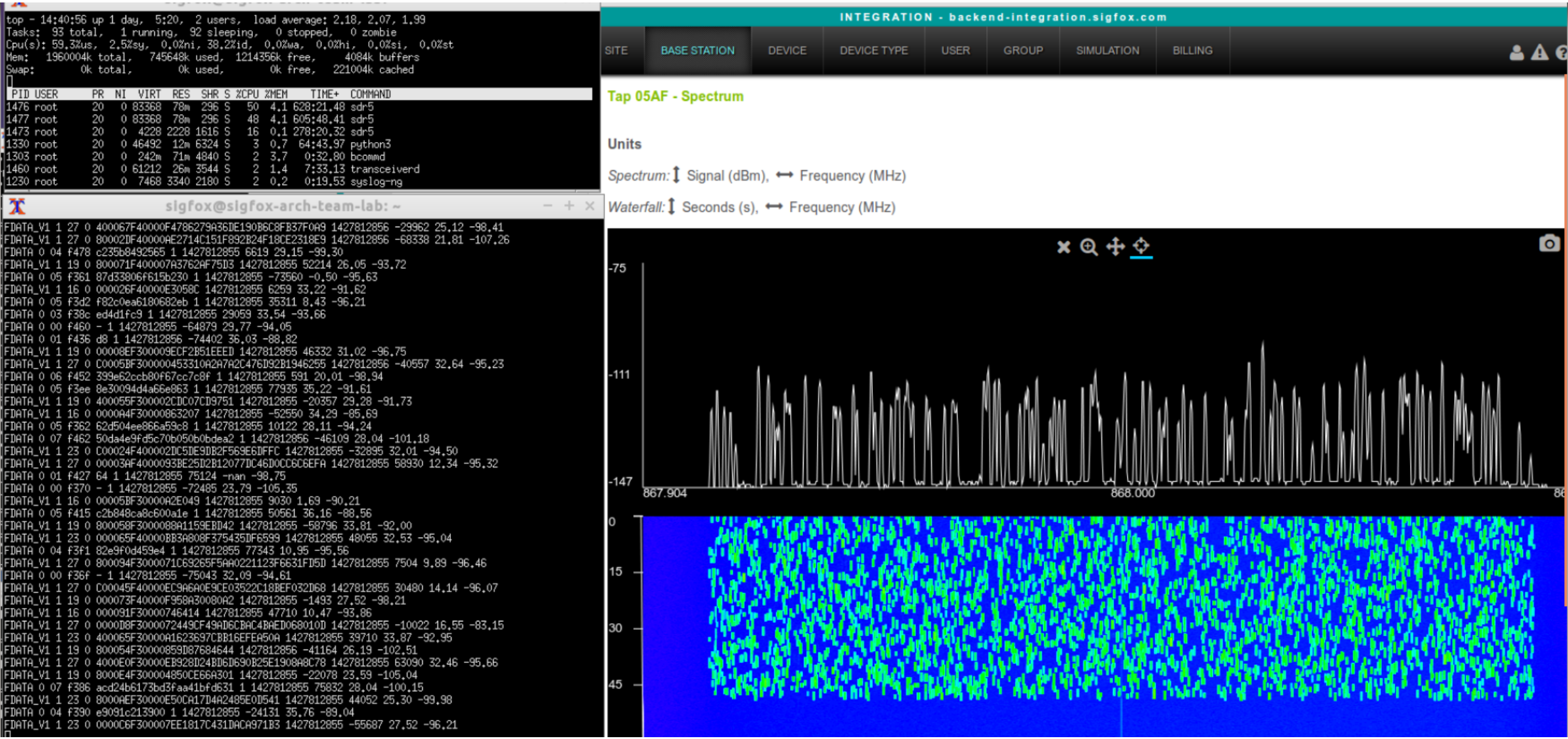
- You want large cells to minimize Capex/Opex
- But you also want massive capacities per KM²
- And low power / ultra low cost “non perfect” devices
- Use Tiny free spectrums
- Thus you will have to deal with unpredictable spectrum
- Minimize protocol and ideally go for totally random access leading to device simplicity and fully predictable lifespan
- But you definitely want high reliability
- Hopefully you will focus on tiny piece of information

A totally new approach is needed – Choosing the right waveforms, massively using modern computer techniques for network cognition capability, advanced signal processing, massive MiMo, and extensive real-time data processing in general

The right waveforms



SIGFOX is like the rain…



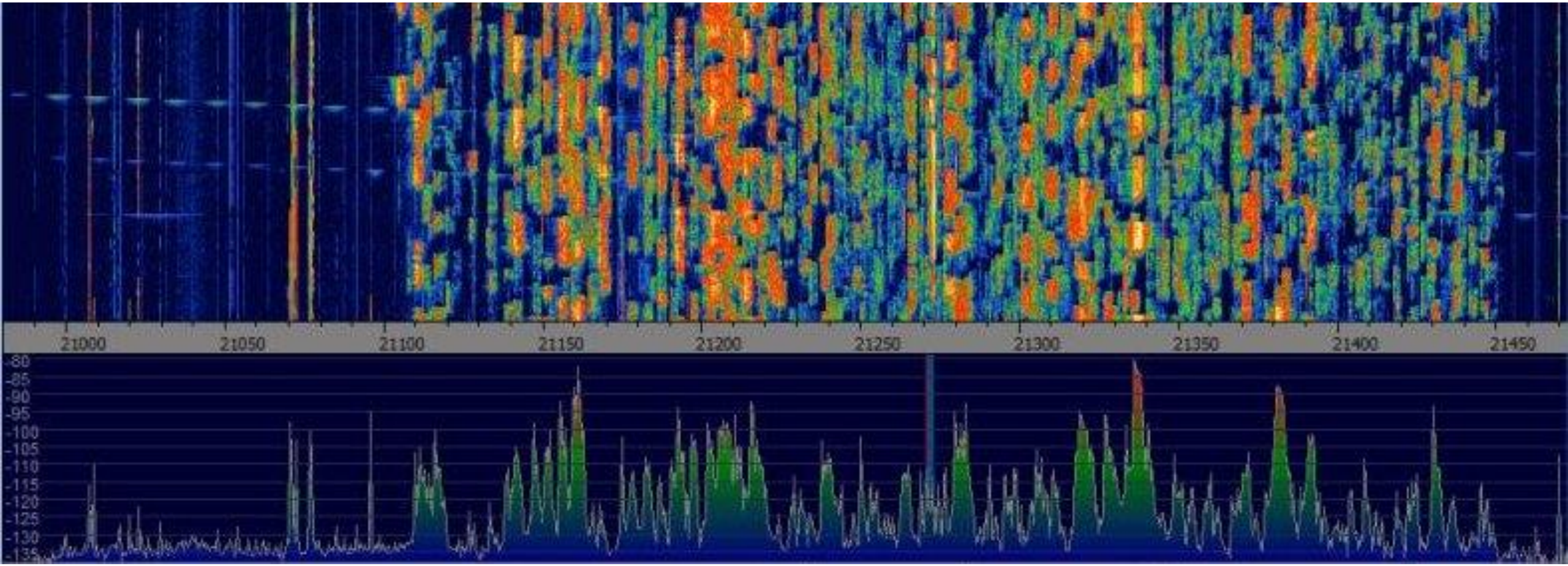
Cognitive network : Distribute **intelligence everywhere in the network**

Back in the early days of radio …

How could this kind of simplistic transmitter allow to establish reliable long distance communication…

Back in the early days of radio …

…Within that kind of tiny, crowdy, chunk of decametric spectrum ?



Back in the early days of radio …

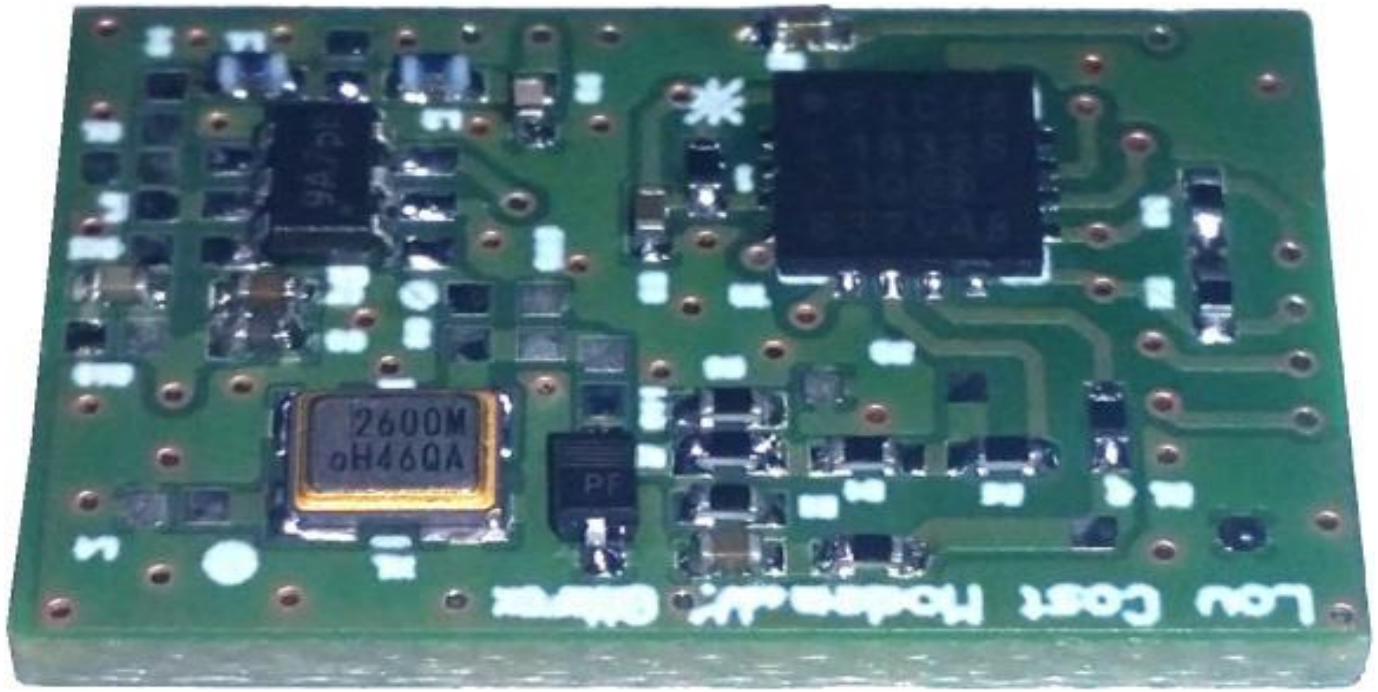
Because of such organization taking advantage of **cognitive** human abilities !

Back in our days …

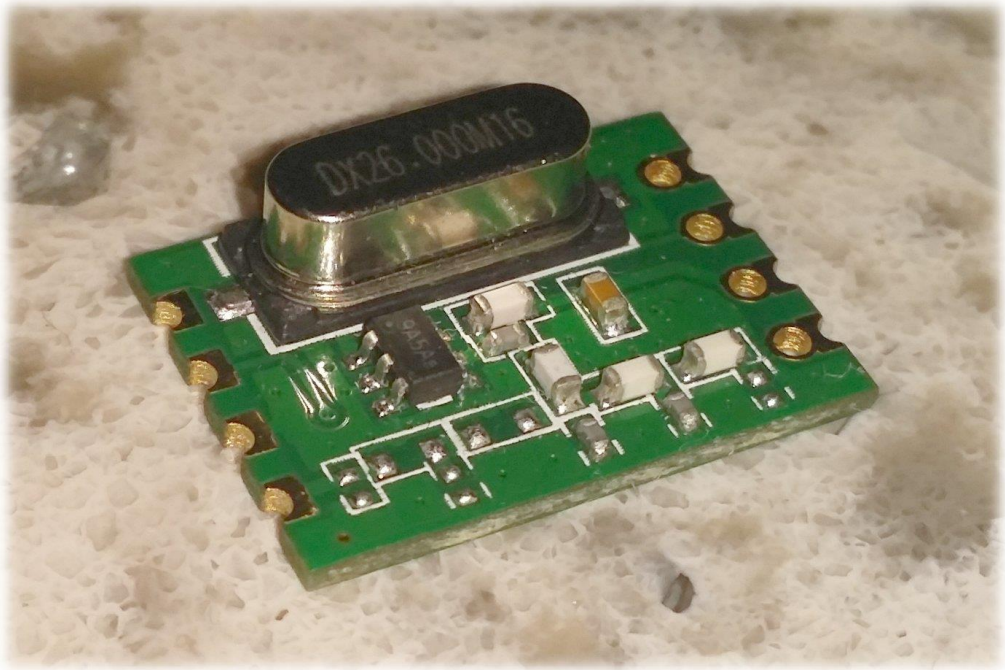
How to collect information from **billions** of those ultra simple “**half dollar**” devices ?

RF oscillator

8bit µC

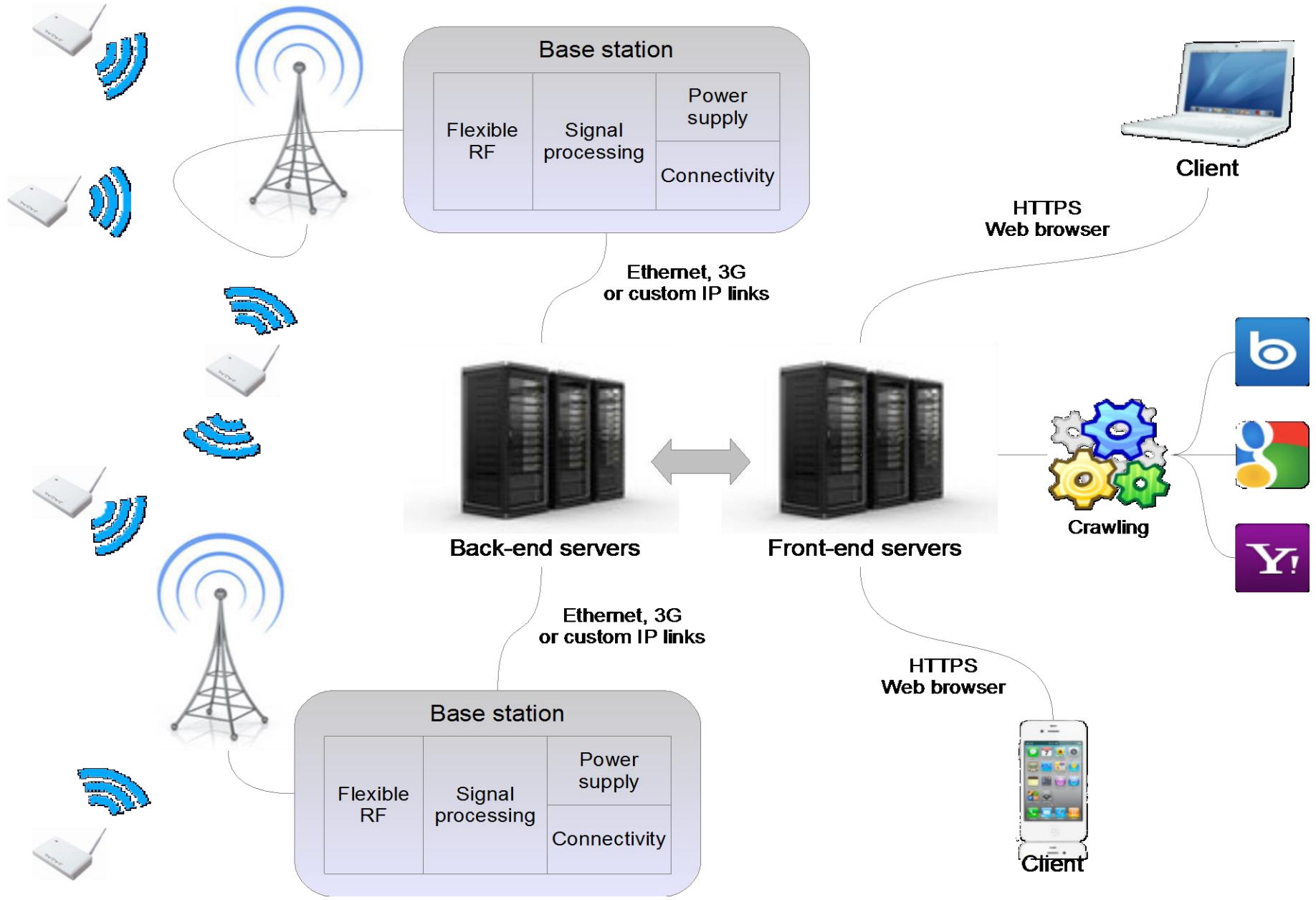


8bit µC + FM modulated RF oscillator

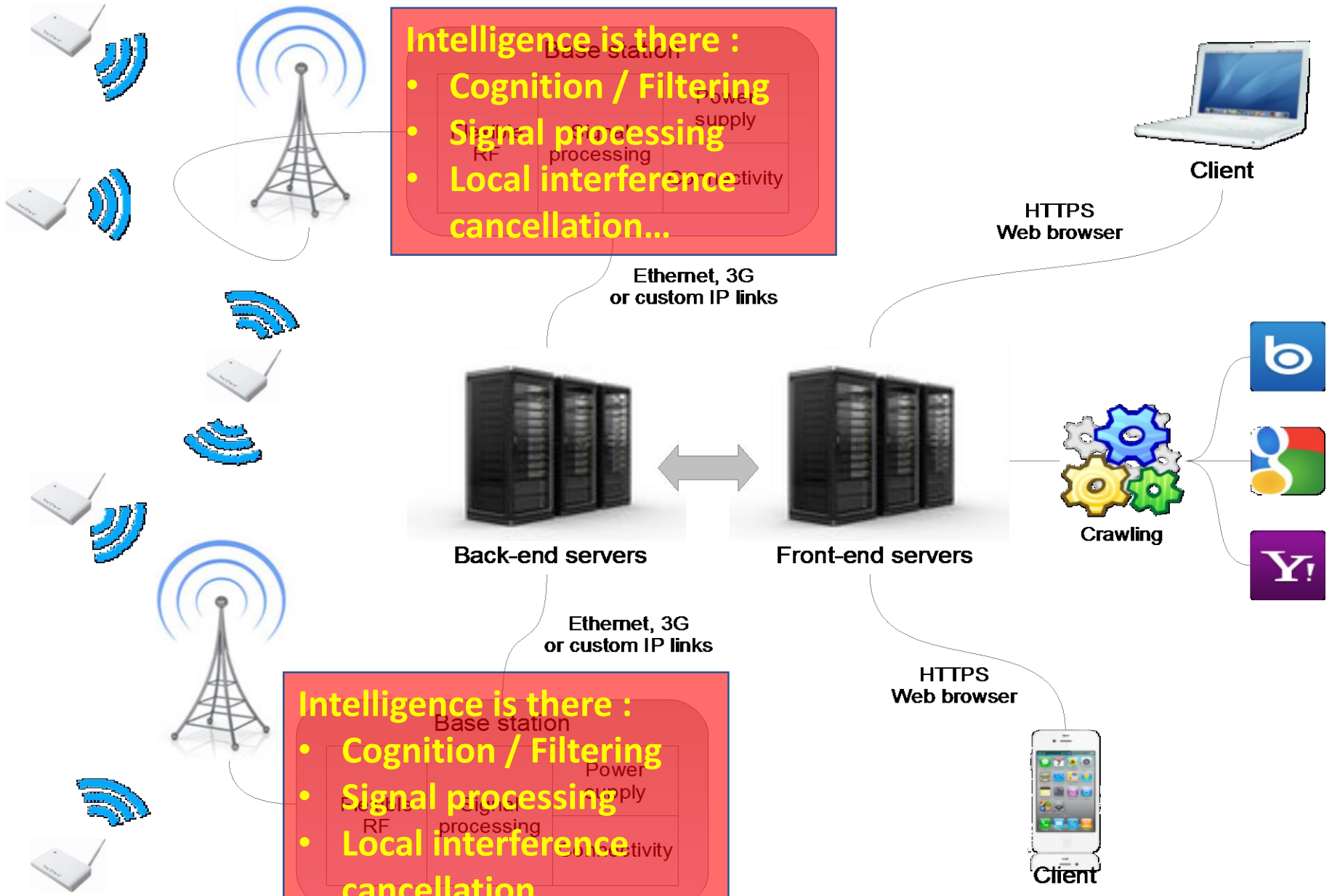


Replacing human abilities by A.I.
Through massive usage of modern computer science

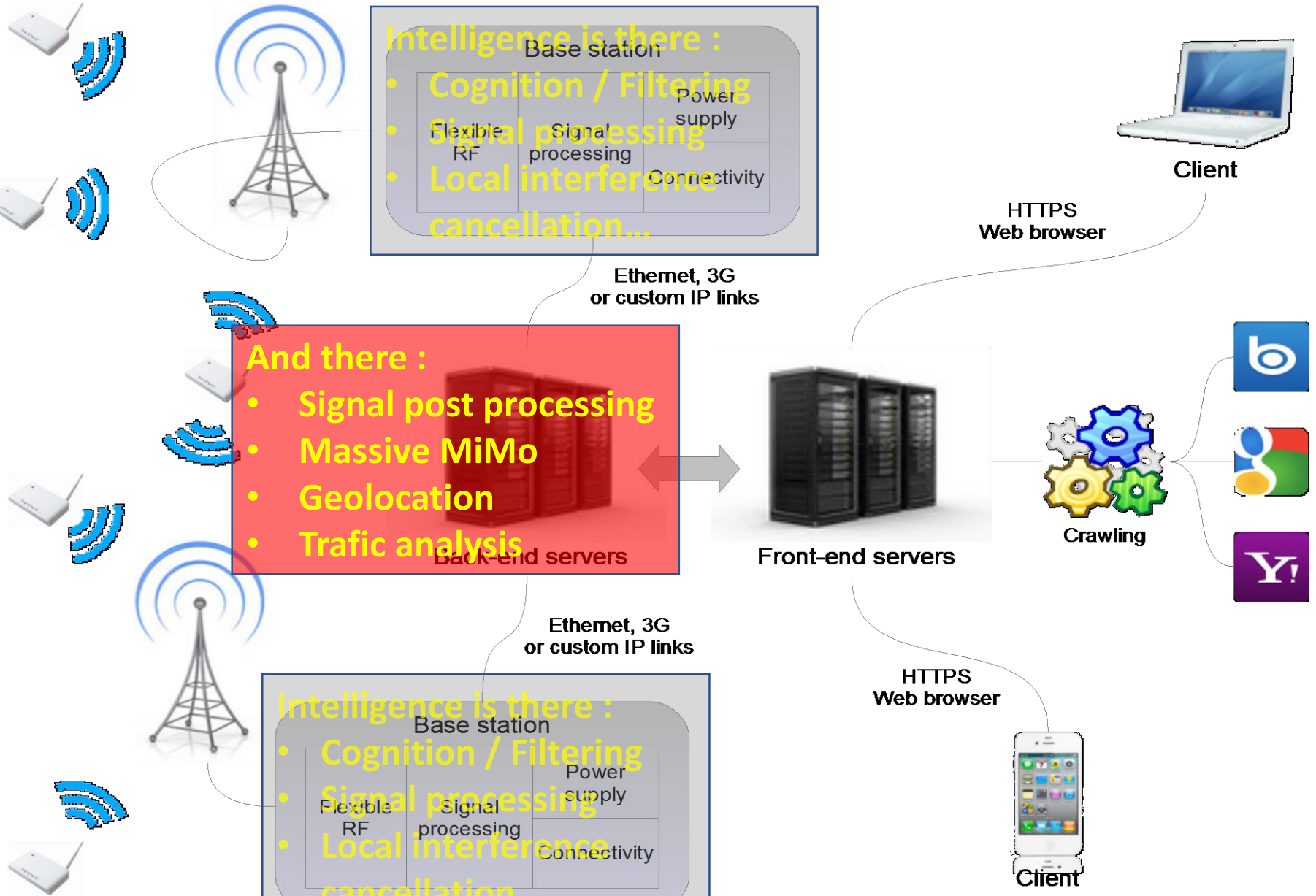
An IoT network…



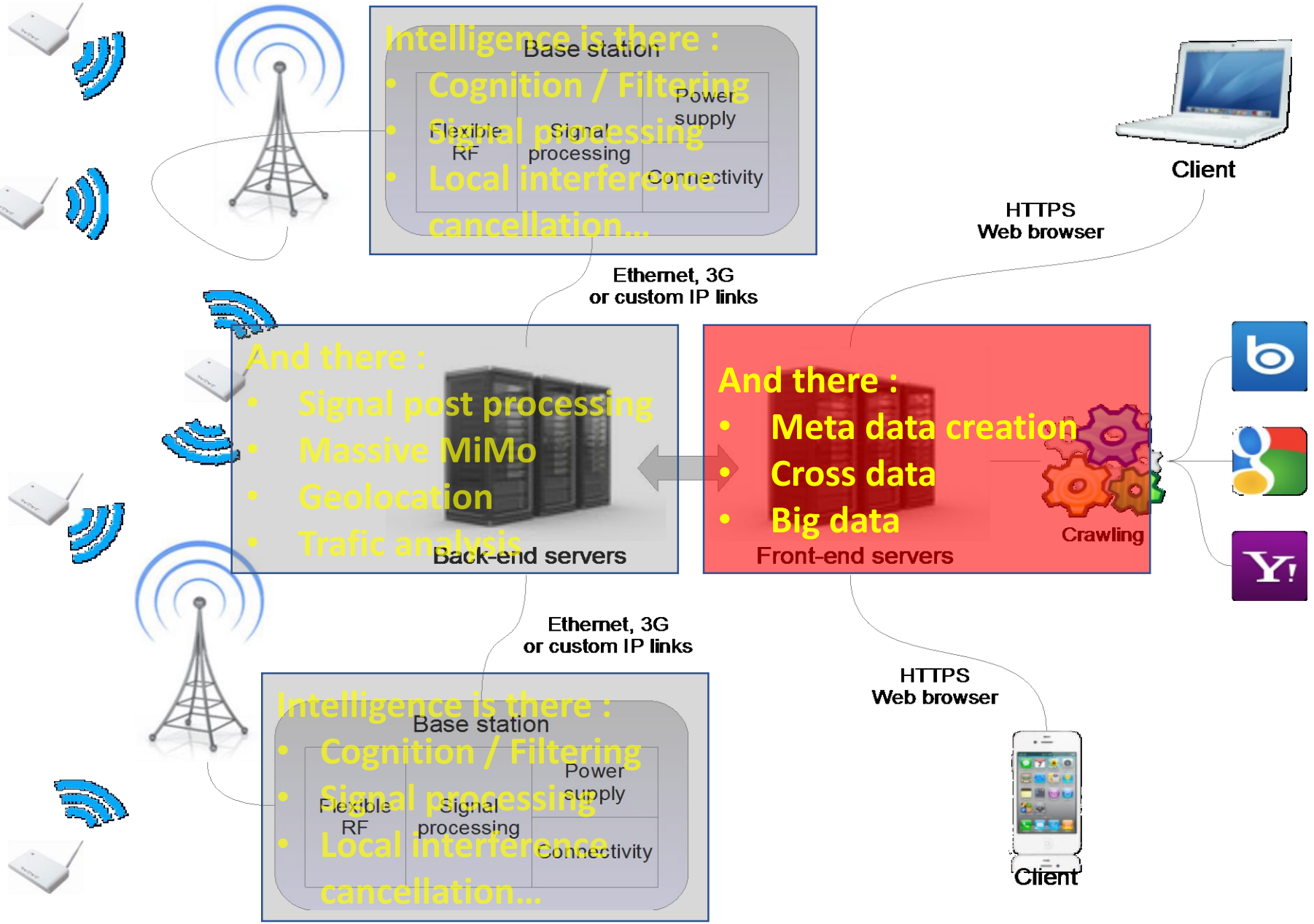
…With intelligence everywhere…Radio…



…With intelligence everywhere…Telecom cloud…



…With intelligence everywhere…Data processing…



Network as a service

Network

At your

service

SIGFOX in Slovakia … It is NOW with SimpleCell