BRIDGING THE CONNECTIVITY GAP

PEDRO COSTA, NARROWNET

LISBON 12 MAY 2016

IOT
NARROWNET/SIGFOX
USE CASES
DEMO

IOT

Internet Society™ Portugal Chapter

NARROWNET LINKING THINGS

amazon
PrimeAir
amazon
PrimeAir

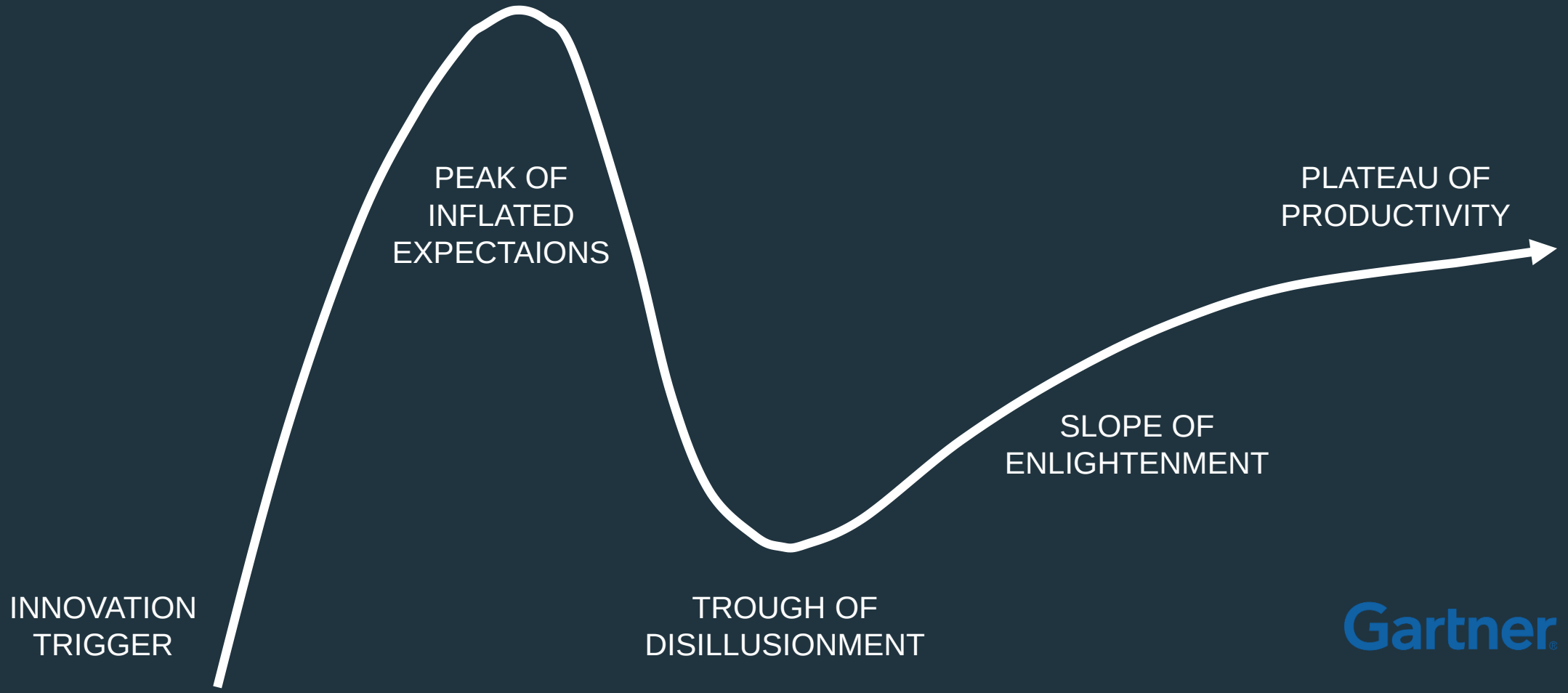
Internet Society™ | Portugal Chapter

NARROWNET LINKING THINGS

Unnamed road
Now
Deer Creek Rd
Arastradero Rd
W Charleston Rd
Alma St
Moffett Blvd
US-101 S
1:33 pm
69°
69°

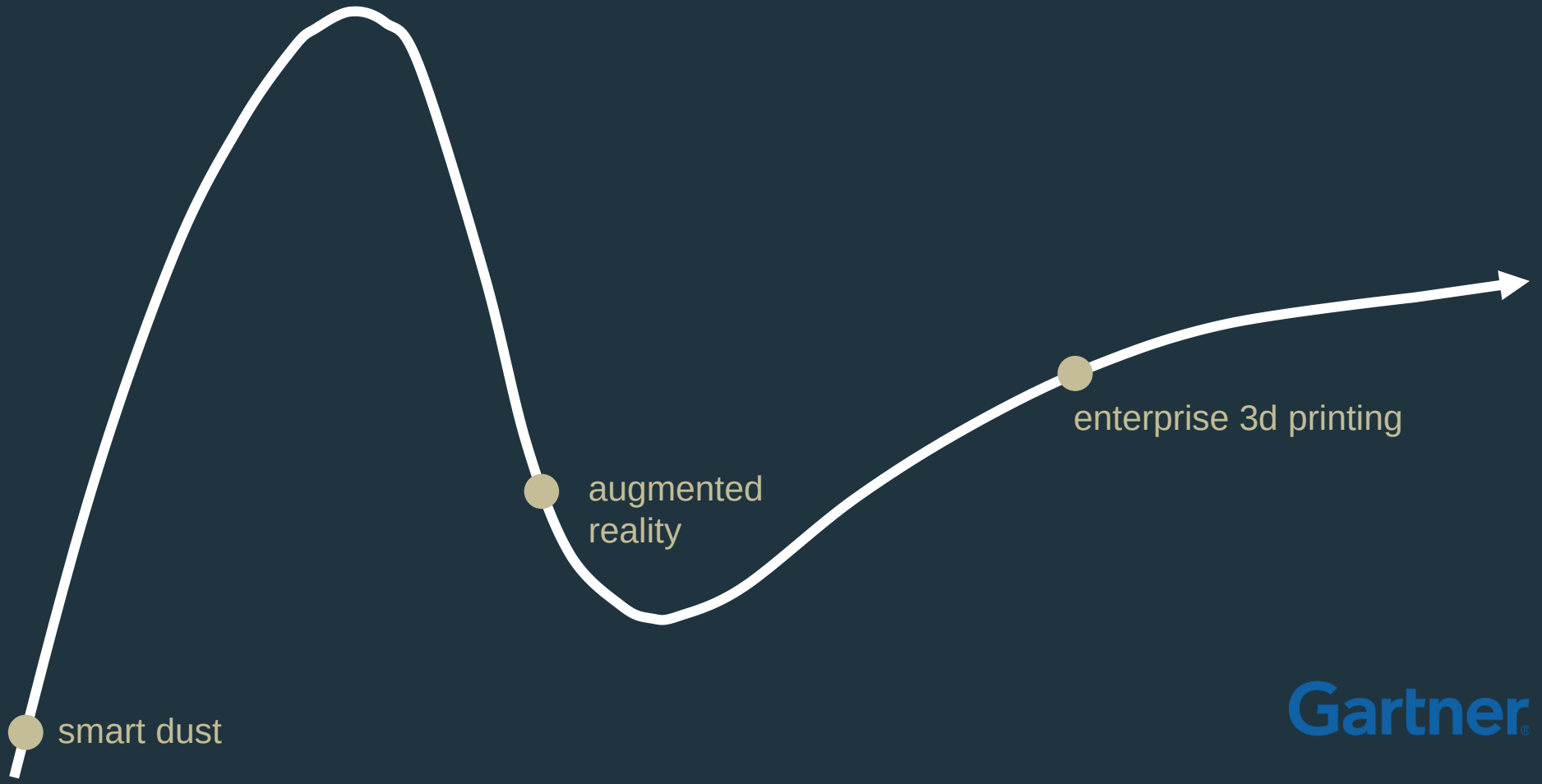
Tuenti
11:51
CUSTOM TIMER 1
FC ON
0:00
Daily Clean
LOCAL WEATHER
11°
12° / 5°

IOT

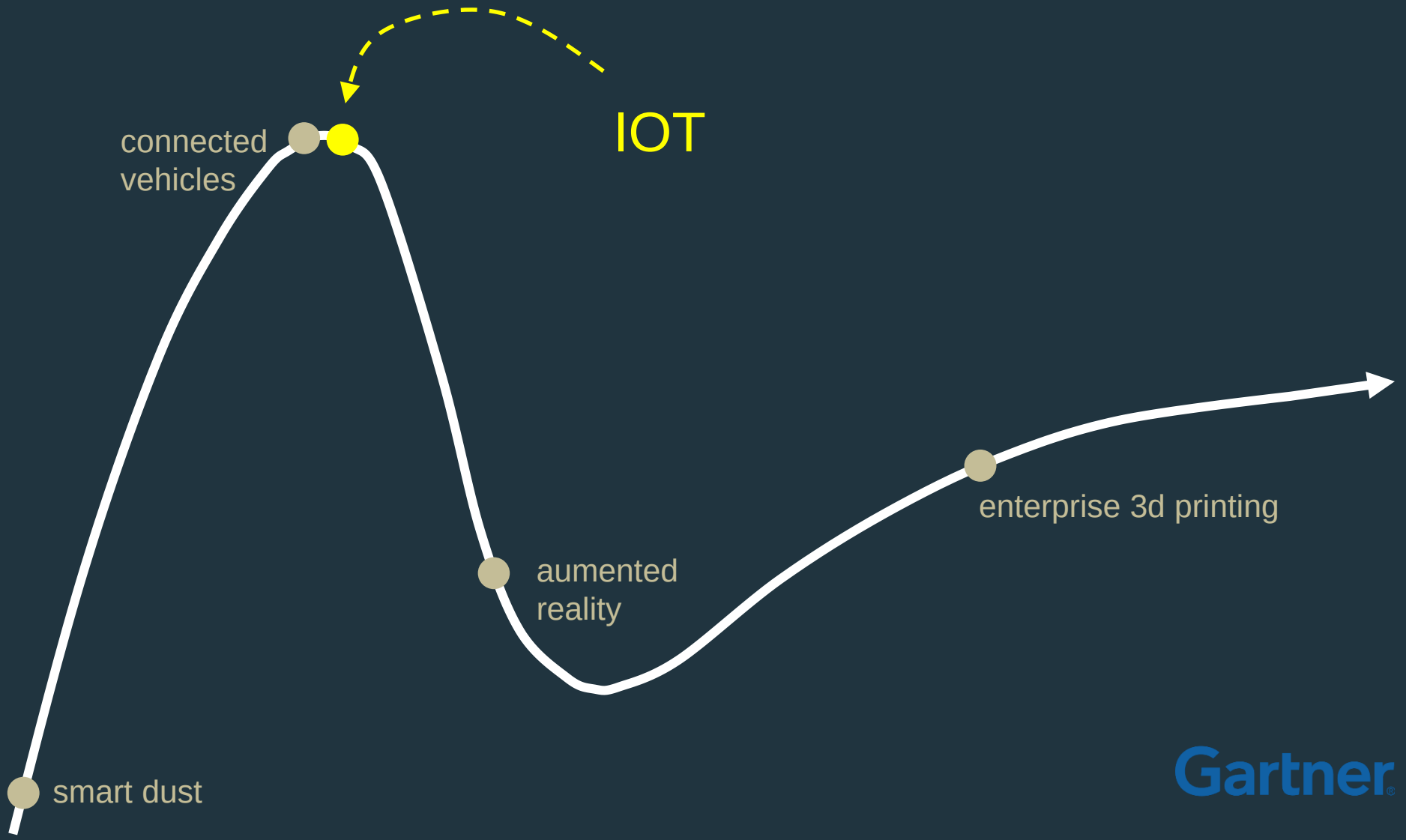

PEAK OF
INFLATED
EXPECTAIONS
PLATEAU OF
PRODUCTIVITY
SLOPE OF
ENLIGHTENMENT
INNOVATION
TRIGGER
TROUGH OF
DISILLUSIONMENT

Gartner

IOT


smart dust
augmented reality
enterprise 3d printing
Gartner

IOT


IOT
connected vehicles
aumented reality
enterprise 3d printing
smart dust

Gartner

“We are living an intense, challenging and motivating time, but we have not won anything yet and must refrain from any sort of euphoria”

IOT

OPPORTUNITY

80

BILLION CONNECTED OBJECTS IN 2020

CONNECTIVITY

2010-2020

20
BILLION
DEVICES

CONNECTIVITY

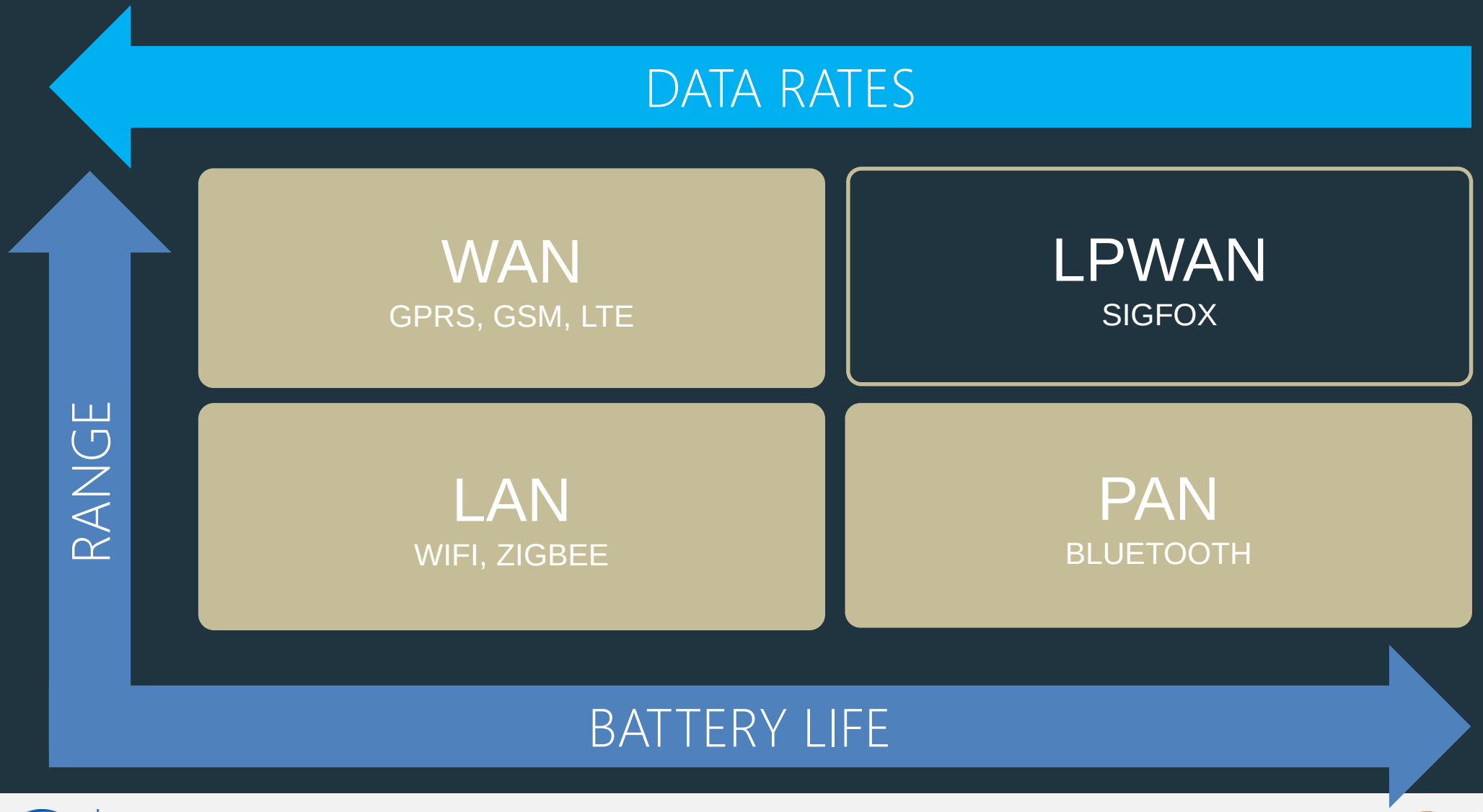
2010-2020

+60

BILLION
DEVICES

SIGFOX
One network A billion dreams

CONNECTIVITY LANDSCAPE



IOT

OPPORTUNITY

3

TRILLION EUROS IN GLOBAL TURNOVER 2020

IOT

15

BILLION EUROS IN NATIONAL TURNOVER 2020

CHALLENGES

ENERGY CONSUMPTION

SECURITY

INTEROPERABILITY

STANDARDS

COMMUNICATION COST

ROAMING

NETWORK INSTALLATION AND MAINTANENCE

RANGE

HARDWARE COST

HOW DOES SIGFOX ADDRESS THESE ISSUES?

SIGFOX™

A independent operated network that provides energy-efficient two-way transmission of small quantities of data over long distances

Internet Society™ Portugal Chapter

NARROW NET LINKING THINGS

NETWORK TOPOLOGY

THINGS BASE STATIONS CLOUD APPS

TECHNOLOGY

868 MHz
Frequency (Europe)
ISM Band

100 Hz
Bandwidth (UNB)

140
Max number of
messages per day

100 bps
Bitrate

12 Bytes
Max payload size

25 mW
Max power of devices

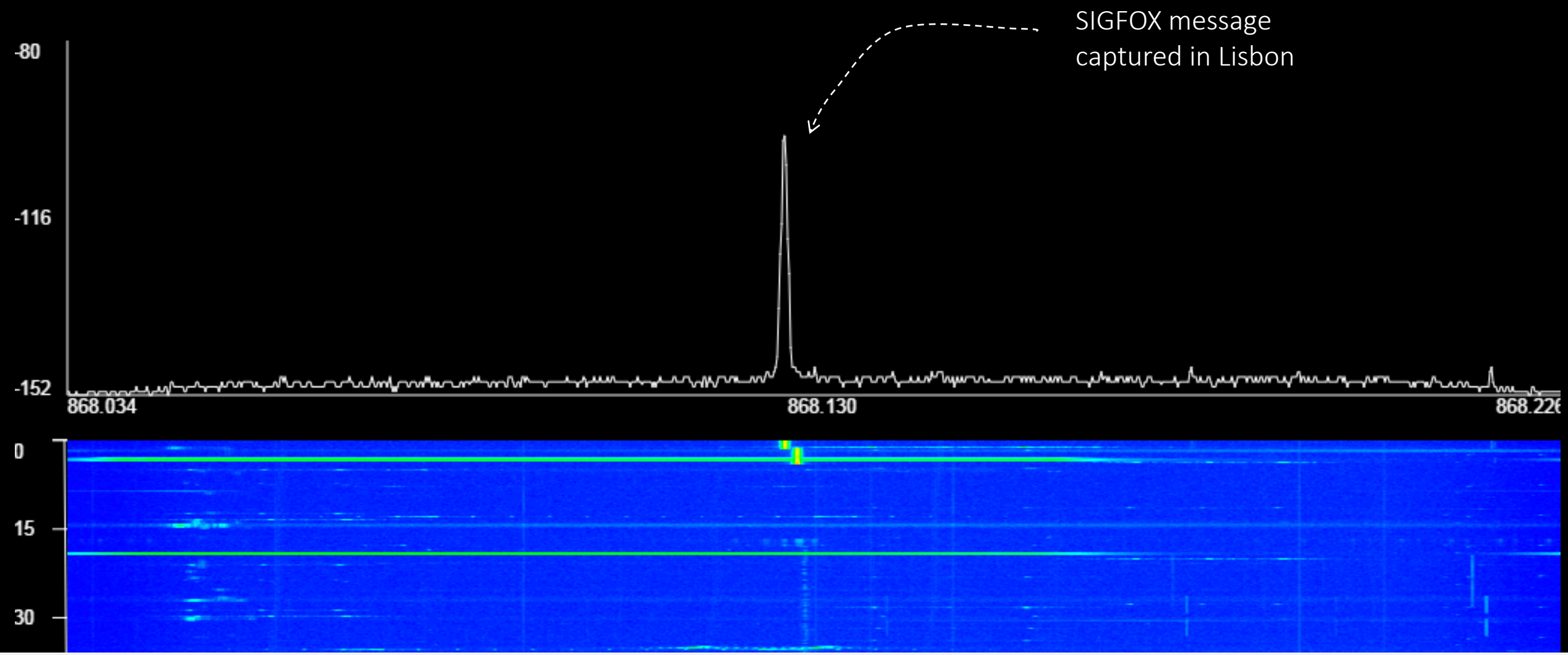
TECHNOLOGY

	Nº Messages	Bytes
UPLINK →	140	x 12
DOWNLINK ←	4	x 8

NETWORK COMPONENTS

Outdoor

Indoor


SIGFOX message
captured in Lisbon
-80
-116
-152
868.034
868.130
0
15
30

GET YOUR DATA

SIGFOX

WEB PORTAL

For human access, development phases and admin

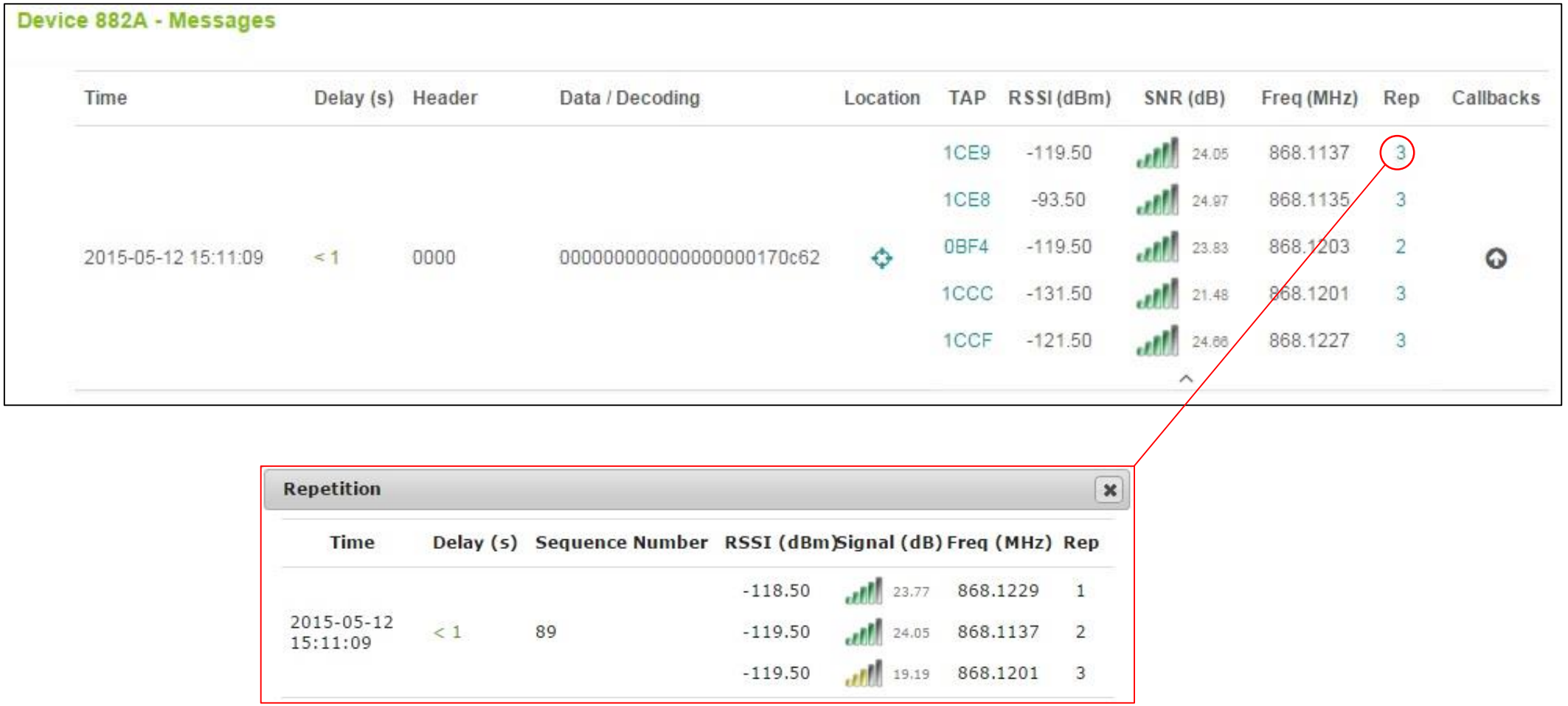
PULL

HTTP API (REST-based): for automated/scripted admin access

PUSH

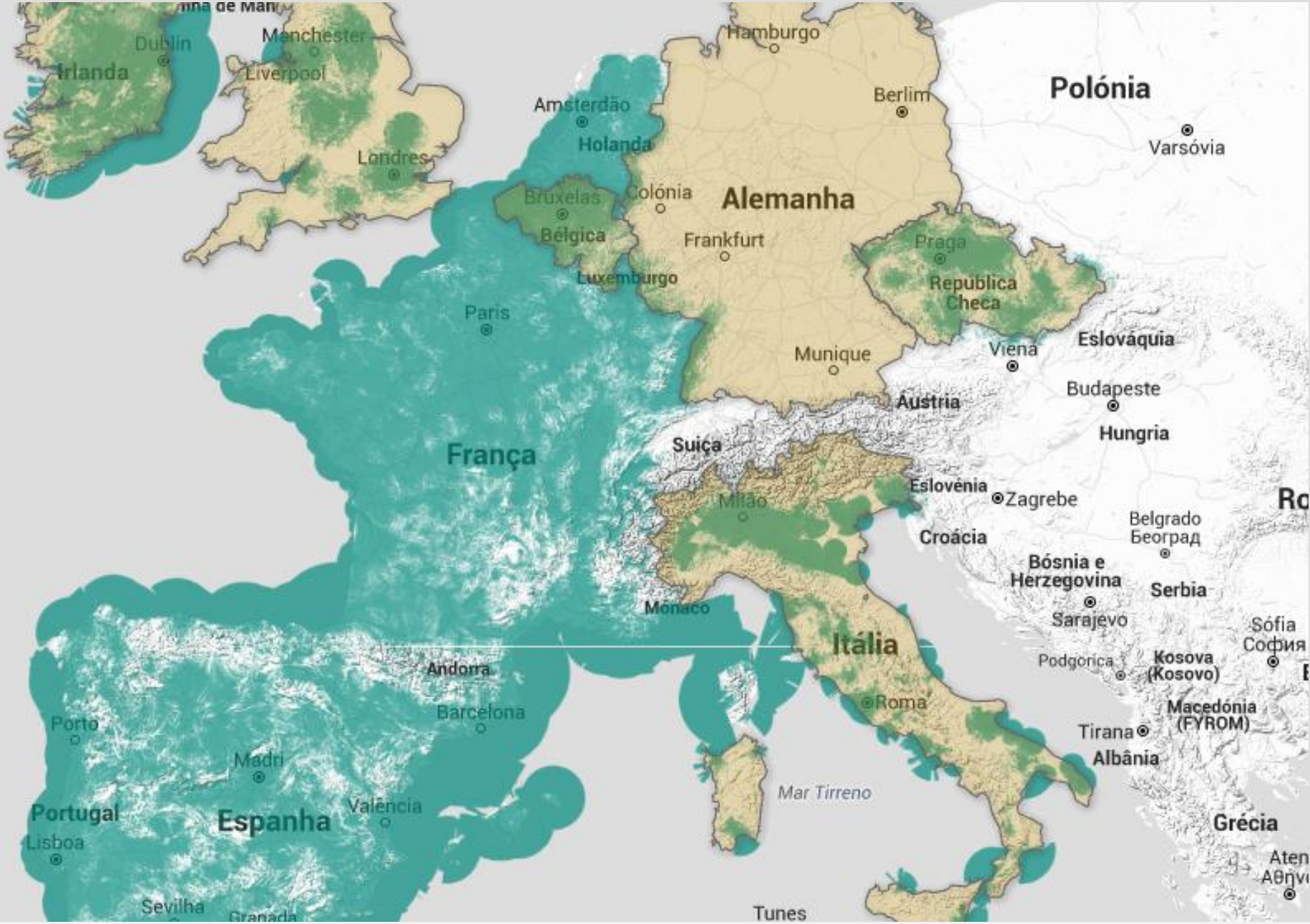
HTTP Callback: automatic data push for server-to-server connections

GET YOUR DATA



COVERAGE

EUROPE



COVERAGE

EXPANDING GLOBALLY

Australia Thinxtra	**Belgium** Engie M2M	**Czech republic** Simple Cell	**Denmark** IoT DenmarK	**France** Sigfox
French Antilles IDEO Caraïbes	**French Polynesia** VITI	**Germany** Sigfox	**Ireland** VT networks	**Italy** NetTrotter
Luxemburg RMS	**New Zealand** Thinxtra NZ	**Oman** Omantel	**Portugal** Narrownet	**Reunion Island / Mauritius / Mayotte** IO Connect
Spain Cellnex	**The Netherlands** AEREA	**UK** Arqiva	**United States** Sigfox	

COVERAGE

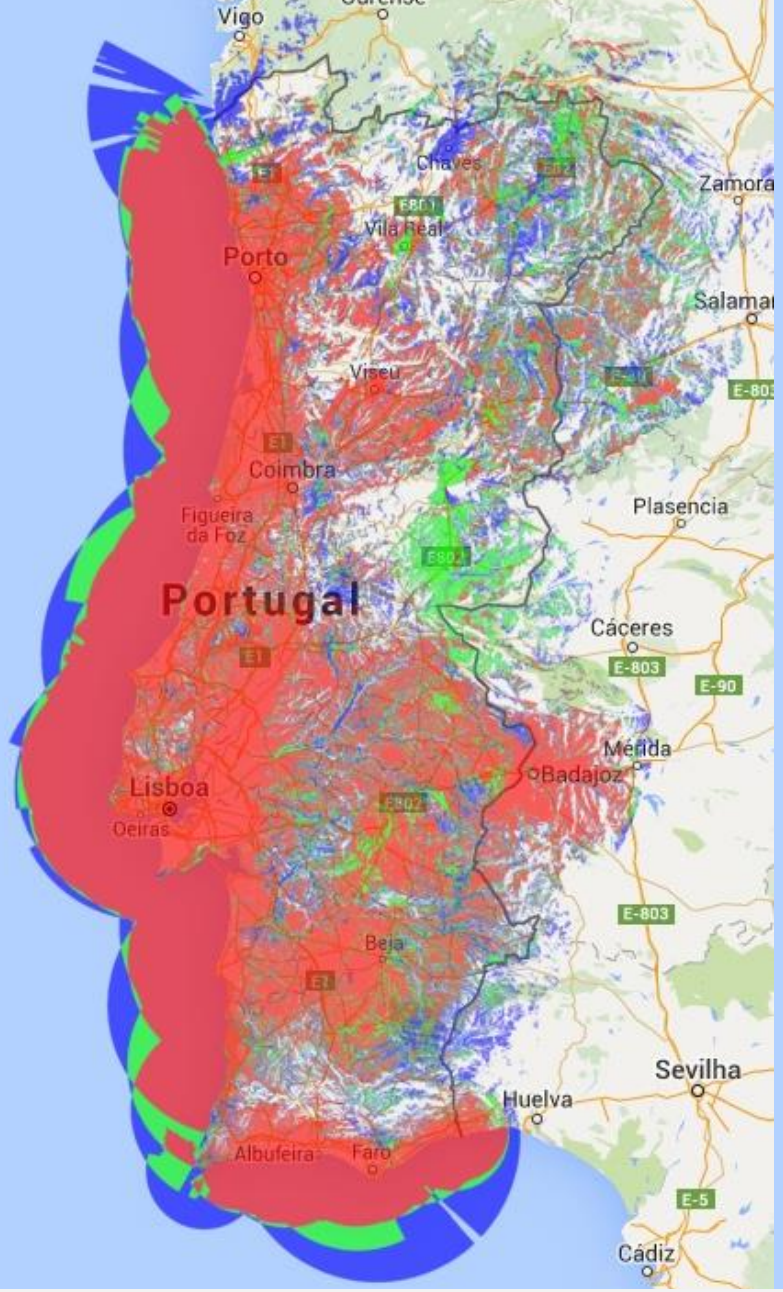
NARROWNET IS THE SIGFOX NETWORK OPERATOR IN PORTUGAL

92%

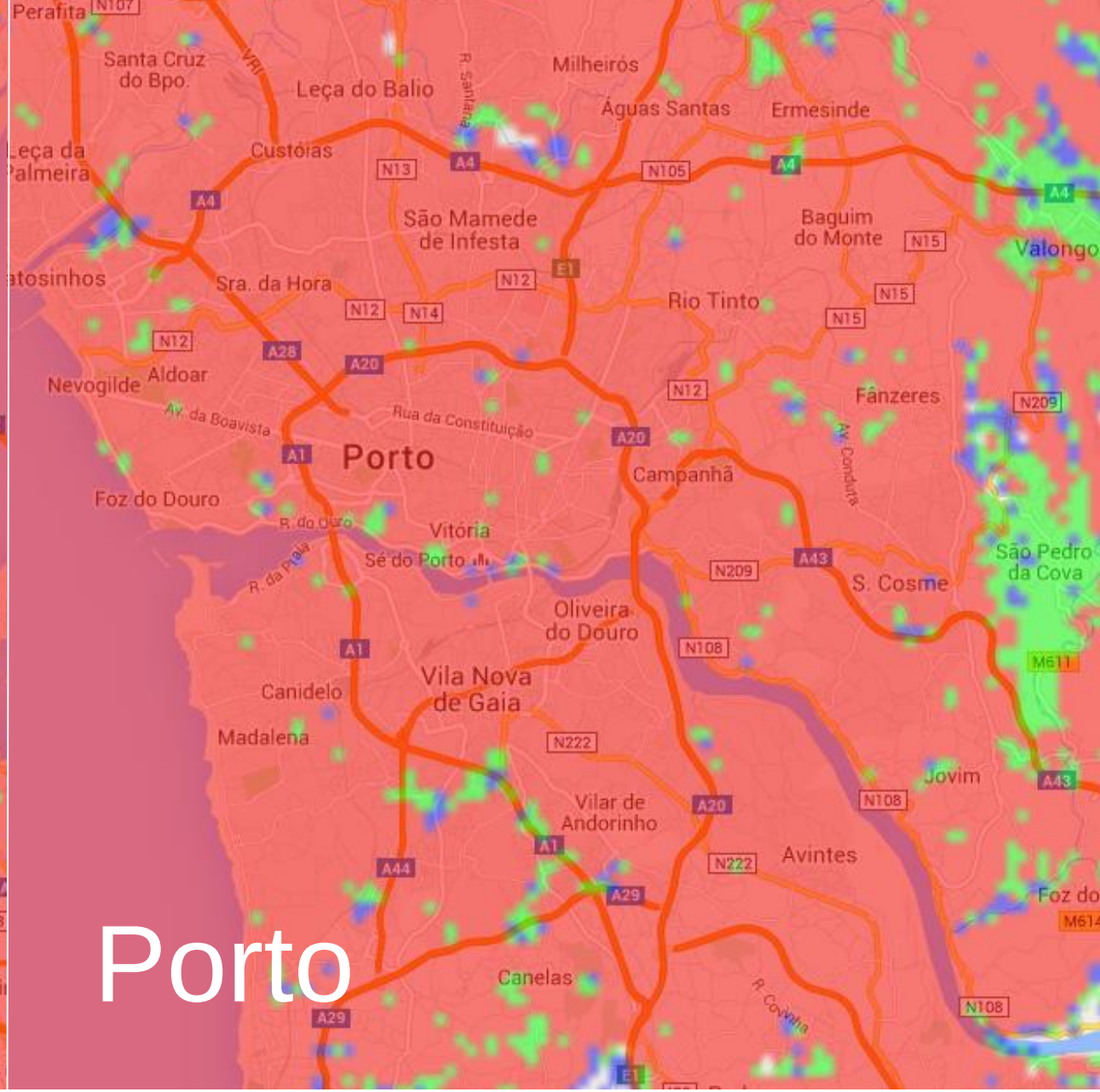
Population

75%

Area



São João das Lampas
Terrugem
Pêro Pinheiro
Almargem do Bpo.
Sintra
Parque Natural de Sintra-Cascais
Belas
Loures
Santa Iria de Azoia
Odivelas
Portela
Pontinha
Amadora
Alcabideche
Porto Salvo
Lisboa
Alfama
Cascais
Parede
Oeiras
Alges
Almada
Caparica
Costa da Caparica
Barreiro
Seixal
Amora
Aroeira
Fernão Ferro
Arriba Fóssil da Costa da
Rio Tejo
Lisbon


Perafita
Santa Cruz do Bpo.
Leça do Balio
Milheirós
Águas Santas
Ermesinde
Custóias
São Mamede de Infesta
Baguim do Monte
Valongo
Sra. da Hora
Rio Tinto
Nevogilde
Aldoar
Fânzeres
Porto
Foz do Douro
Vitória
Sé do Porto
Campanhã
S. Cosme
São Pedro da Cova
Oliveira do Douro
Canidelo
Vila Nova de Gaia
Madalena
Jovim
Vilar de Andorinho
Avintes
Canelas
Porto

IN SHORT

SIGFOX COMBINES

OUT-OF-THE-BOX CONNECTIVITY
LONG RANGE

LOW ENERGY CONSUMPTION

LOW COST COMS

LOW COST SENSORS
LOW COST MAINTENANCE

USE CASES

RESIDENTIAL ALARMS

SMOKE DETECTOR

CONNECTED BEE HIVES

SOIL MONITORING

MONITORING FIRE HYDRANTS

AUTOMATED METER READING

THE LIMIT IS YOUR IMAGINATION.

ONE SIZE DOES NOT FIT ALL.

p.costa@narrownet.pt