NW TECS IoT

Smart GAS Solution for Smart Cities

Smart GAS IoT Solution based on LoRaWAN

Introduction

A leader of Low-Power Wide Area Networks (LPWAN) for the

Internet of Things, with over 50 public network providers and thousands of enterprises using the ThingPark Wireless platform all over the world.

Mission : Digital Twin Made Commonplace

Actility believes in a radically more efficient and sustainable world through ubiquitous digital-twin technology. We want to spark this transition and become the leading global mediation platform between cloud apps & physical world by 2023.

LPWAN technology is a perfect vehicle for global leadership in its unlicensed version : we first make it the "**Wifi of IoT**" and then upgrade from connectivity to mediation.

Actility at a glance

Company founded
2008

Headquarters
Paris
France

Actility
Connecting with intelligence

PROFILE

110
Employees – 60 % of R&D and product development

100 M€+
funding raised
Orange, Cisco, Bosch, Swisscom, Creadev, Foxconn, Inmarsat etc.

20.000+
LoRaWAN gateways connected on Actility-supplied networks

PRODUCT & SERVICES PORTFOLIO

Deploy

- ✓ LoRaWAN network server
- ✓ Professional Services & radio planning
- ✓ Carrier-grade OSS/BSS for gateway & device management
- ✓ Join servers for easy device activation

Scale

- ✓ Key Management System for enhanced **security** & large scale **device activation**
- ✓ Firmware-over-the-air update for devices
- ✓ **Ecosystem** marketplaces and Partner programs

Enrich

- ✓ Geolocation services using combinations of technologes : LoRa network location or AGPS
- ✓ Access to Roaming hub for easy device roaming
- ✓ Fully integrated end-to-end solutions marketplace to **accelerate go-to-market**

MARKETS

Public operators

55 + large scale operators

Enterprise networks

130+ Enterprise Networks

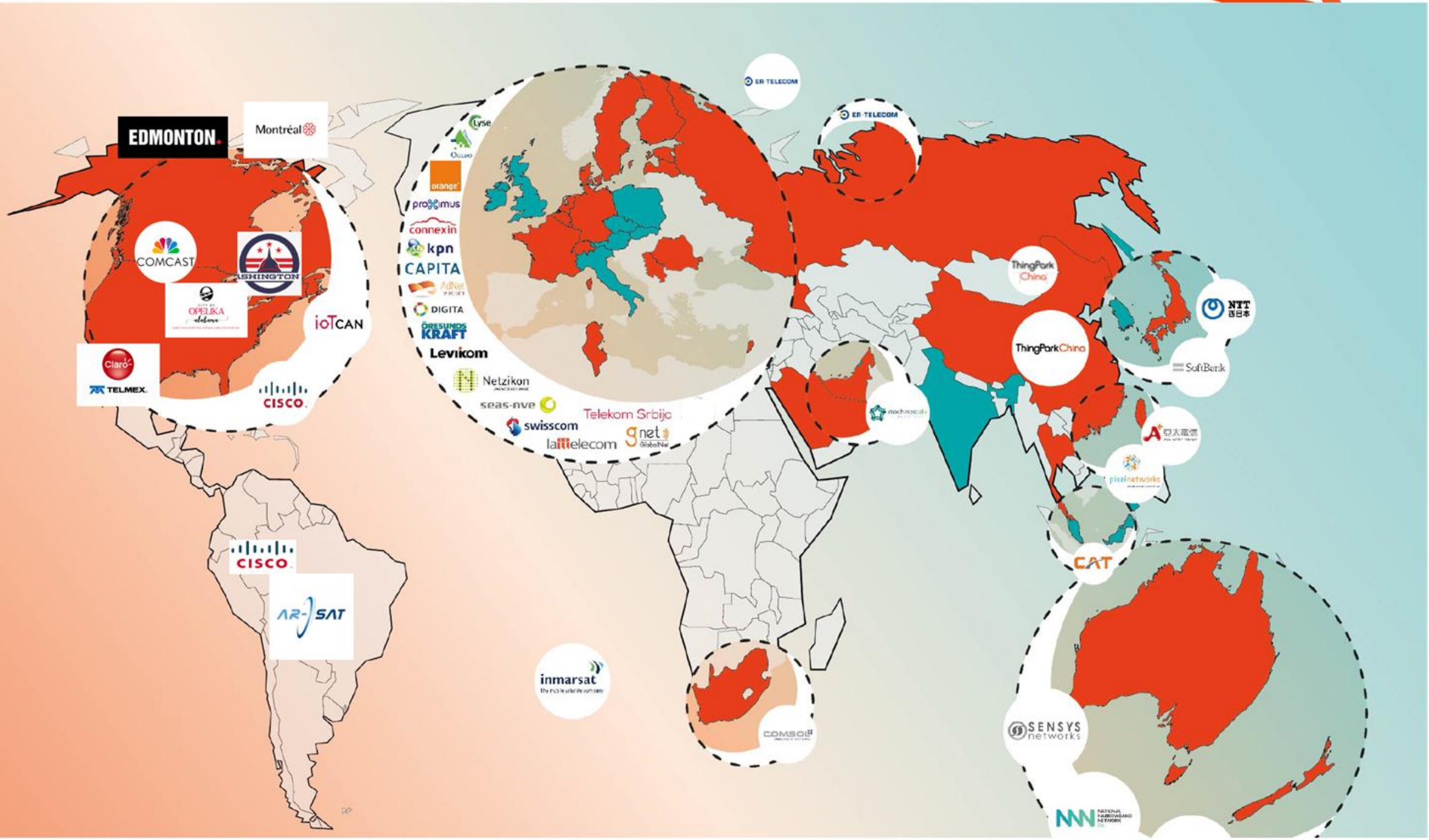
Channel Partners

100 % Indirect GTM strategy

CISCO, OBS , Factory Systems, Macnica

Solution Partners

Partner Program for Eco –systems from validation to distribution


EDMONTON
Montréal
COMCAST
OPELIKA
ioTCAN
Claro
TELMEX
CISCO
ER TELECOM
Lyse
orange
proximus
connexin
kpn
CAPITA
DIGITA
ÖRESUNDS KRAFT
Levikom
Netzikon
seas-nve
swisscom
Telekom Srbije
lattelecom
gnet
ThingPark China
NTT
SoftBank
CAT
pixelnetworks
CISCO
AR-SAT
inmarsat
SENSYS networks

Actility is at the heart of an ever-growing global partner ecosystem

Application Platforms

IBM Watson
Hewlett Packard Enterprise
amazon web services
Microsoft Azure
PREDIX
thingworx
ORACLE
SAP HANA

Communication Service Providers

orange
inmarsat
DIGITA
COMSOL
swisscom
proximus
kpn
du
亞太電信 Asia Pacific Telecom
machinestalk
INFOCOMM MEDIA DEVELOPMENT AUTHORITY
NATIONAL NARROWBAND NETWORK Co.
NTT
COMCAST
IoTCAN
SoftBank
Spark New Zealand
ČESKÉ RADIOKOMUNIKACE
ER·TELECOM
Netzikon
latelecom
Levikom
pixelnetworks
blink services
seas-nve

Energy & Utilities

Rte
nationalgrid
VEOLIA
dalkia GROUPE EDF
TenneT Taking power further
orange
elia

Industrial IoT Solution Providers

CISCO
BOSCH Invented for life
Schneider Electric
Honeywell
SIEMENS
ABB
FOXCONN
Itron

System Integrators

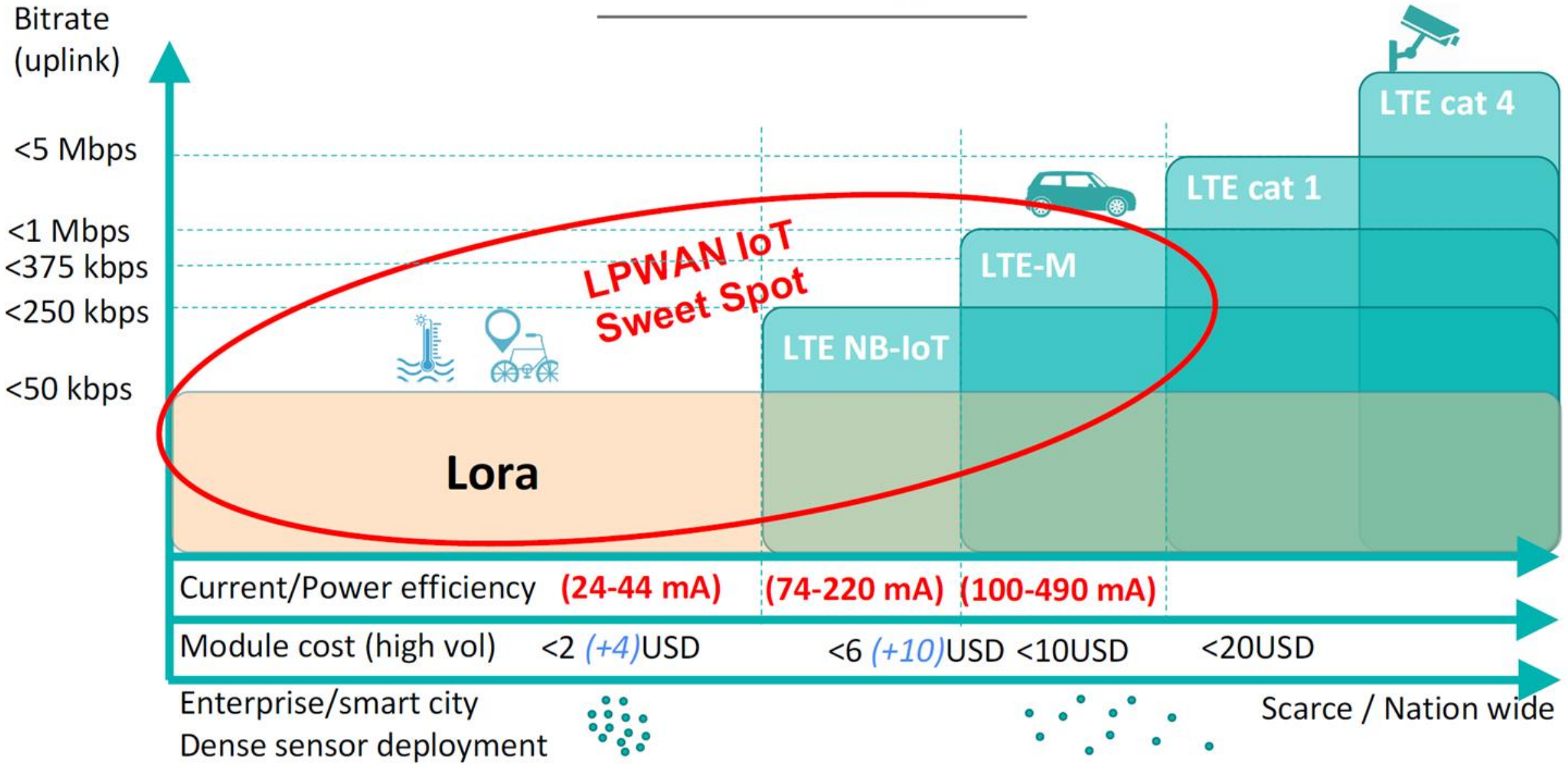
Hewlett Packard Enterprise
MACNICA
iDA SINGAPORE
GROUPE SNEF
SenLab Rus
COUGAR AUTOMATION

Ecosystem Partners

- 1000 Registered developers
- 100 Solution partners
- 155 Marketplace products

IBM Watson
Microsoft Azure
amazon web services
nke
MULTITECH
MICROCHIP
obeeway
ESPOTEL
ThingWorx
FLASHNET
sterela
enevo
GIMASI
Fastprk
M2M
COMMUNITHINGS
Adeunis RF
ATIM
WiSLOG
allora Factory
ARAD TECHNOLOGIES
Ascoel
libelium
Cumulocity
Goobie
SENSING LABS
intesens
éolane
Webdyn
intent TECHNOLOGIES
SYMES
SRETT
CIRRIOS
Streetlight.vision
Viveris
davra networks

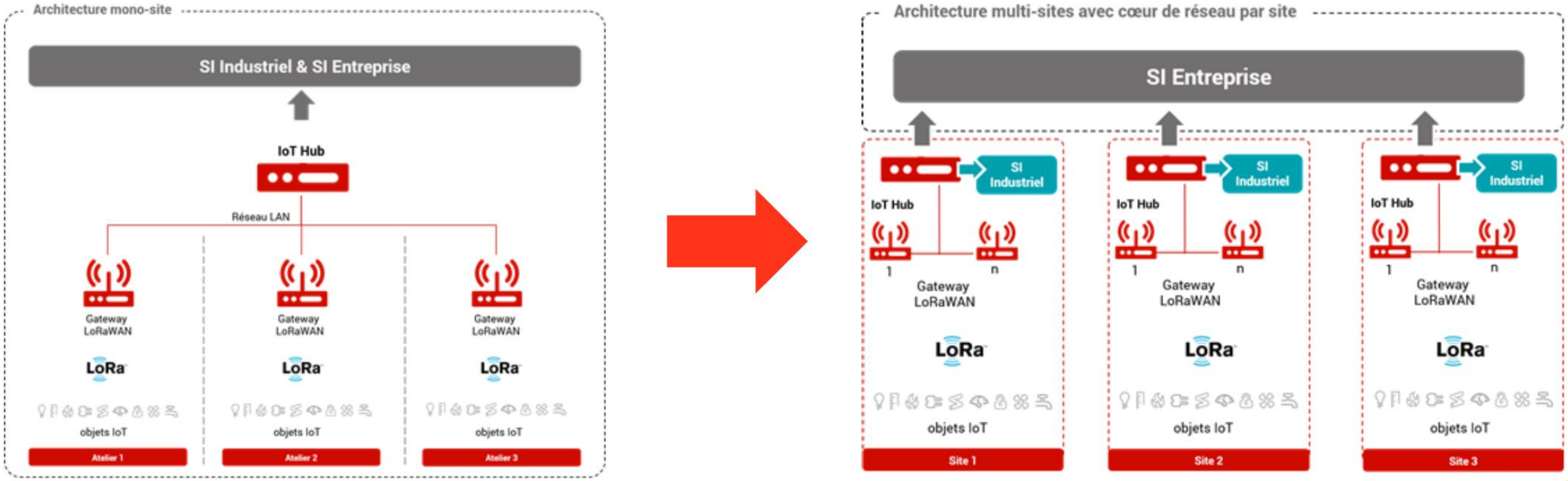
LPWA Market Segmentation



For LPWA solutions (LoRa and NB1), battery for 10yr @ 4USD/2Ah, 10msg/day is shown.
NB1 power use per 3GPP report R1 156006, 5Wh for 10yr, 1 msg/2h scenario

Enabling Industrial Architecture

Architecture evolve overtime with limited effort and no impact on end-user applications.



Sample Implementation

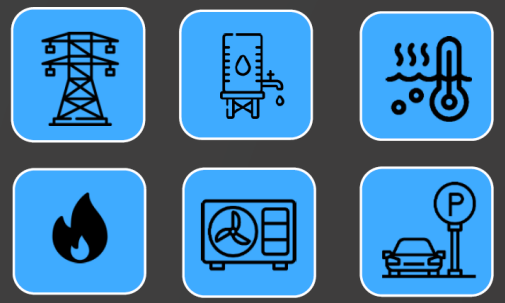
TOULOUSE (FR – 2019)
FIRST BIG PROJECT WITH LoRaWAN

Sample Implementation

Engie, third global electric utility company, was looking for an IOT platform to propose new services all around the world.

Before

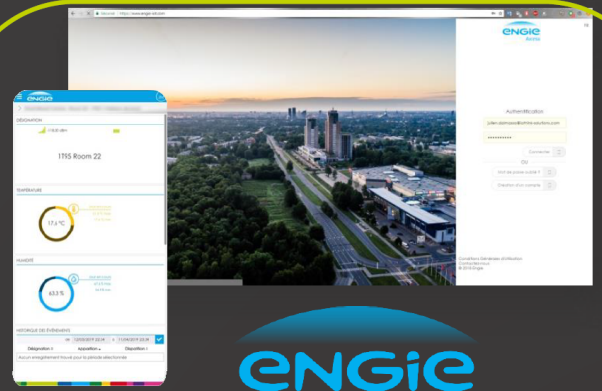
Many different use cases



- Difficulties to connect different devices and BMS
- Many type of connectivity to manage
- Too many vertical platforms
- 2 days training

ioThink Solutions

Kheiron IoT Suite



www.engie-iot.com

- Connected 15,000 different devices and machines
- Hundreds of users in Europe and Asia
- Connect on many type of connectivity
- Made hundreds of customized use cases
- Deploy project in less than 5 days
- Have their own white label web and mobile platform

Utilities : Smart metering

Key challenge :
Deploy an easy-to-install network of smart meters with bidirectional capabilities for remote data gathering

Key characteristics of vertical market:
- Market driven by consumption optimization, infrastructure deployment & heavy ROI considerations

Current vertical pain points :
- ✓ Metering infrastructure needs heavy deployment of local repeaters and installation
- ✓ With existing technologies water and gas meter battery life is low
- ✓ Need to send employees to manually read consumption in some cases
- ✓ Need to be able to remotely manage meters & subscription

Key benefits :
- ✓ LoRaWAN brings low-cost long-range communication & real-time analytics
- ✓ Pre-instegrated meters with LoRa modules or retro fit existing meters with LoRa WAN sensors e.g. pulse detector.
- ✓ 2-way communication allows utilities to better manage suscriber management (eg. taking action if subscriber is not paying the bills)
- ✓ Real time data feeds into customer dashboard allowing for energy consumption optimization

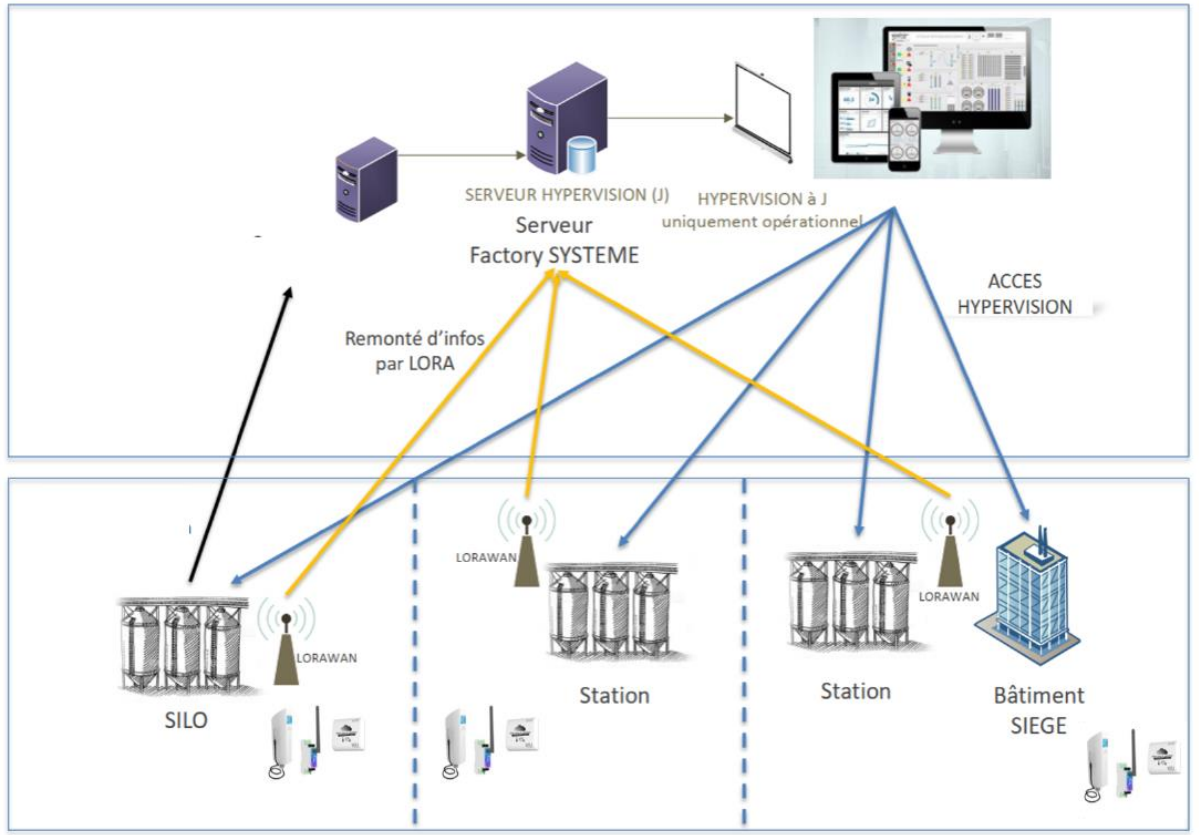
Device partners : EDMI DIEHL Metering elster ENDETEC Homerider Systems Landis Gyr manage energy better

Actility

Muti Site monitoring

Benefits :

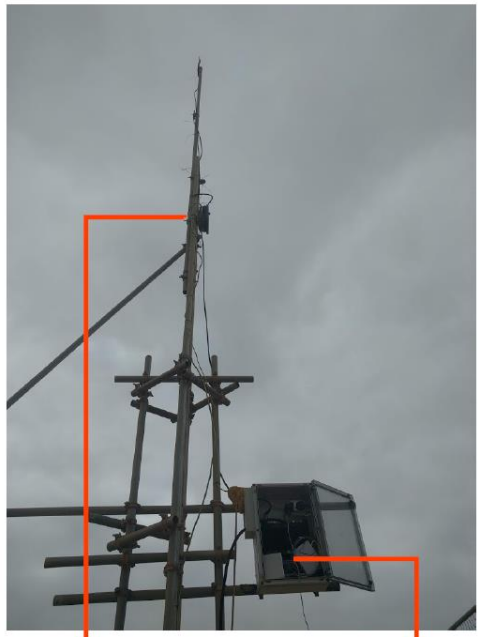
- Unified multi-sites architecture
- Central management
- Easy to install



Implementation - Gateways

- LoRaWAN coverage extremely good given the site dimension
- 5 Gateways installed for capacity and redundancy purpose

Cisco router in a cabinet



Cisco LoRa gateway

Actility

End to End
Read Meters, Track Gas Trucks and Remotely Motor Tank Levels

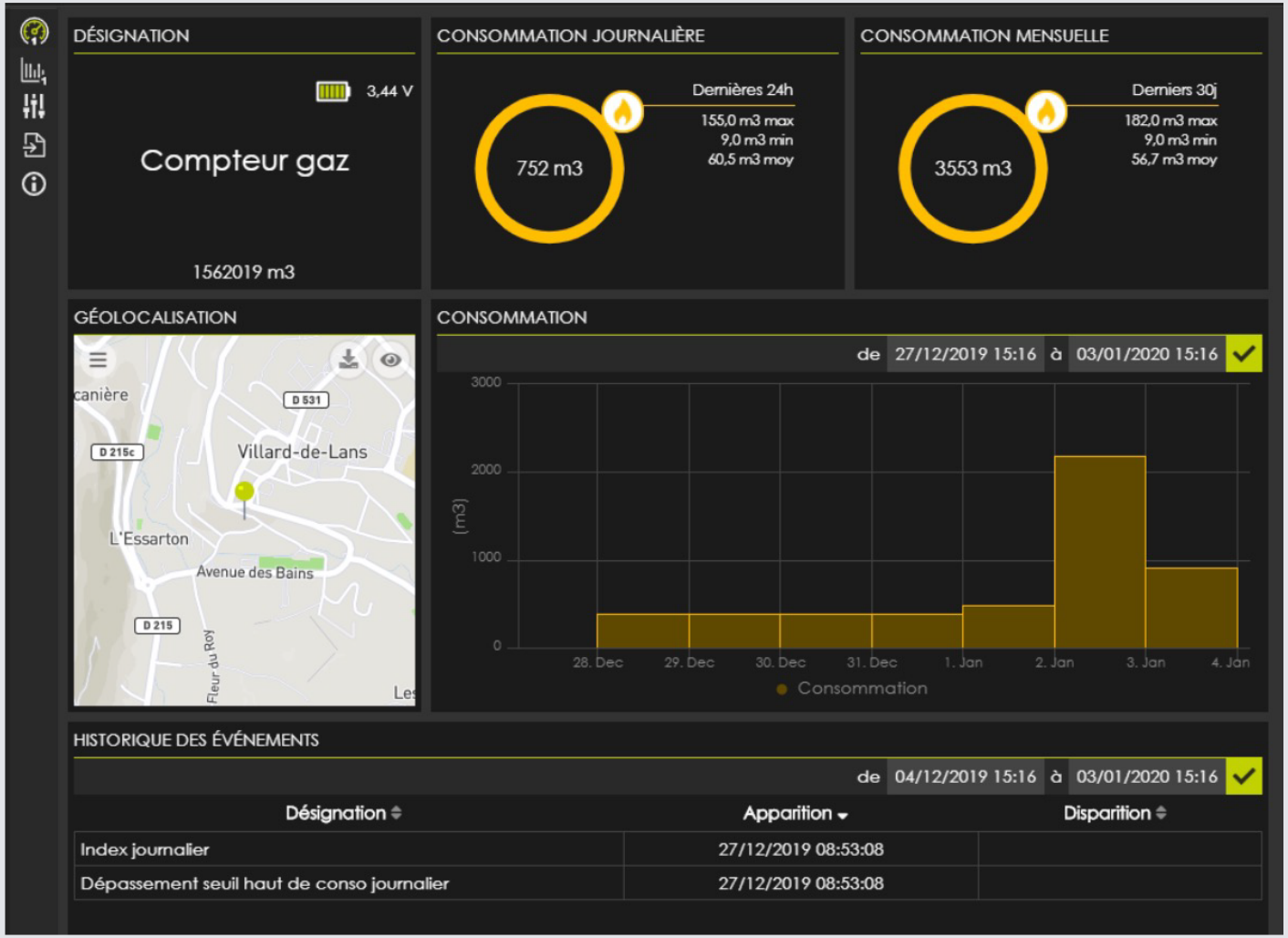
- Gas Monitoring

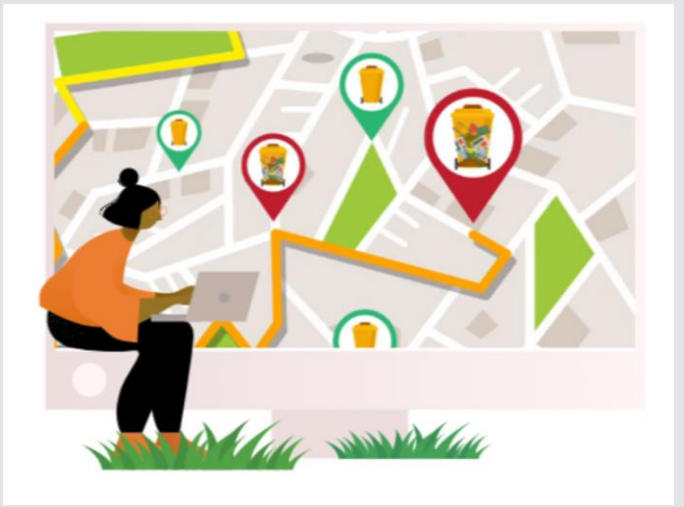
  Protect and secure your gas installation, follow your consumption in real-time according to your usages and detect damages or faults. IoT Suite allows you to save money, improve safety and control gas expenses.

  Uses:
  - Remote meter reading at regular intervals
  - Detect fraud and leaks
  - Monitor consumption in real time
  - Manage consumption peaks
  - Monitor the operating status of meters
  - Anticipate and optimize technical interventions

  Features:
  - View gas meters on a map
  - Set up alerts based on customizable thresholds
  - Receive notifications when thresholds are exceeded, or consumption is abnormal
  - Follow data in real time
  - Record consumption data in the past

Smart Platform





Smart Gas / Utilities Solution – innovated

- Next-generation smart-solutions for Gas utilities management and safety.
- **Cost-effective** smart sensors and solutions for utility companies and developers.
- The **smart meters or pulse meters collect data via Wireless technology and sends it** our or a third party platform.
- View gas meters on a map
- Set up alerts based on customizable thresholds
- Receive notifications when thresholds are exceeded, or consumption is abnormal
- Follow data in real time
- Record consumption data in the past

This means

- Cost reduction in collecting data
- Accurate information
- Report faults instantly
- Report possible leaks

Benefits

Uses :
- Remote meter reading at regular intervals
- Detect fraud and leaks
- Monitor consumption in real time
- Manage consumption peaks
- Monitor the operating status of meters
- Anticipate and optimize technical interventions

- **FLEXIBILITY**
- **We'll tailor the solution to your needs.**
- Open API - compatible with any third party platform
- Tailormade solutions, no matter how niche.

The Solution

We're creating the **simplest**, **cost effective,** and most **versatile** sensor-solution for energy and utility management in the market today. Versatility and flexibility are important to us. The solution isn't uniform, it's a dynamic system designed to be altered and expanded upon. That's why we're happy to tailor solutions to your needs, read about our flexibility.

Smart Gas Meter Measurement

Accurately measures consumption of Gas, available in pulse meter and smart meter. It sends data through LoRa, WiFi and GSM to either our Smart Platform or a third-party platform.

Battery

- Lasts up to 8 years of uninterrupted service - dependent on rate of transmission
- Non-rechargeable lithium battery

Range

LoRa: 20-30km

Environmental specifics

Casing: IP67
Operational temperature range: -20 to +60 degrees Celcius

Remote device management

Some configurables:
1. Measurement intervals
2. Fire alarm threshold
3. Back ground sampling (increasing battery life)
4. Alert configuration

Monitor of Container Levels

- Optimize the management of your fluids and monitor the filling levels remotely, track trucks and remotely monitor the level. Manage single tanks and containers. IoT Suite allows you to anticipate your actions, control your costs and save time.

📌 Uses:
> Industrial lubrication tanks
> Gas & Oil bulk tanks
> Cryogenic tanks
> Hazardous chemical tanks
> Waste oil industry
> Remotely monitor tank filling levels
> Keep an eye on the functioning of the tanks in real time
> Anticipate and detect the interventions to be planned

📌 Features:
> Status of legacy tanks
> Optimization of tours
> Geolocation of tanks
> Calculation and prediction of autonomy
> Volume calculation of tanks
> Reduce logistic costs
> Avoid emergency interventions
> Real time monitoring dashboards, real time consumption
> Alert system in case of full tanks or anomaly on the filling level or malfunctions
> Customization of parameters (sensor status, alerts...)

Predictive Maintenance

Predictive Intelligence Solution - Embedded artificial intelligence

Turnkey solution to monitor machines 24/7

The device is equipped with a motion sensor to measure the vibrations along the X, Y and Z axes. It can identify faults via the vibration Fourier transform, which shows the vibratory signature.

When in operation, after learning: The device measures the equipment vibration periodically without sending a message. If all goes well, he sends a report every 6 hours with the summary of the measurements of this period.

In the event of a vibration anomaly, it sends an alert immediately.
Some machines have several operating modes. It can learn these different modes of operation through artificial intelligence and identify them later, or even adapt to their changes.

Enables Industrial end customers to increase performance, safety and decrease machines shutdowns and work accidents.

Actility

The platform for Everyone

Accessibility and simplicity are the keys to making change easy.

We don’t want to overwhelm customers with statistics, nor upper management with the day to day operations.

The platform gives the right information to the right people. We do this through different platform components .

Contact Us

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