

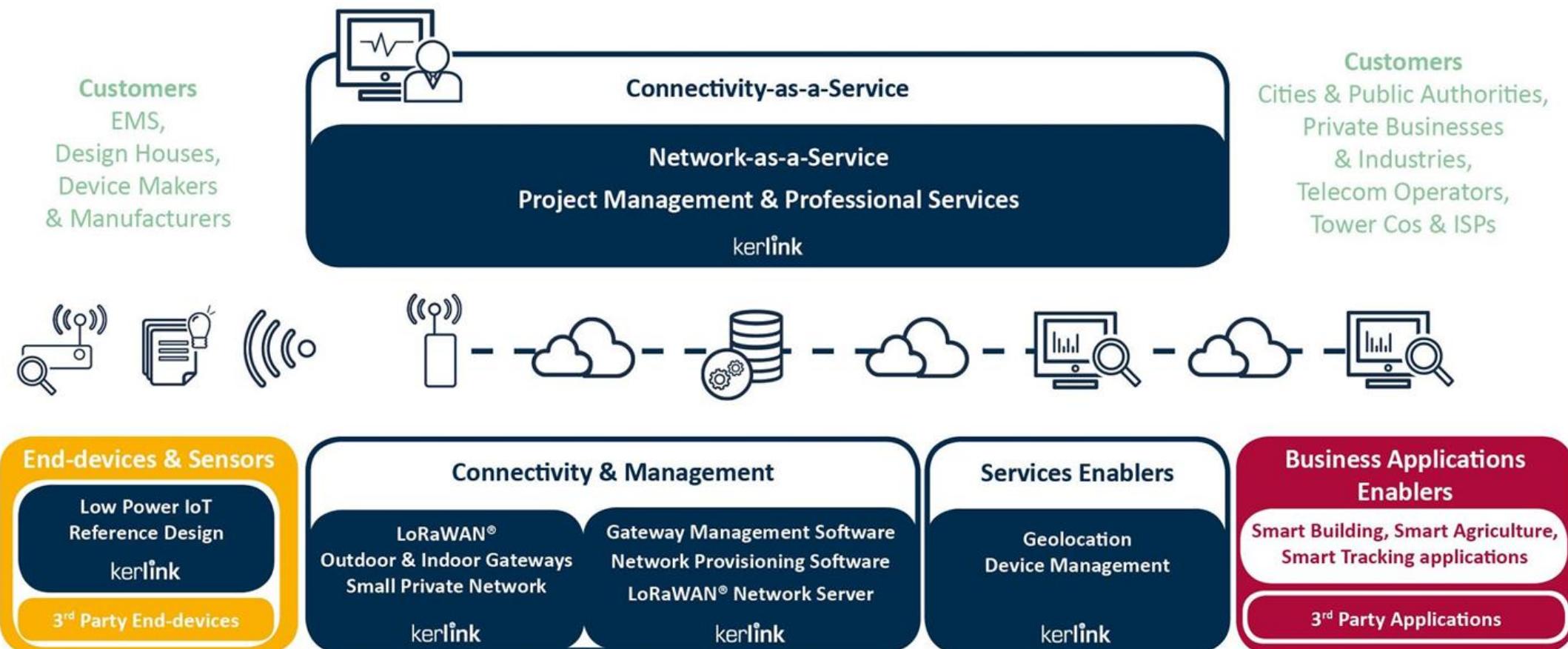


Use-cases Presentation

January 2021

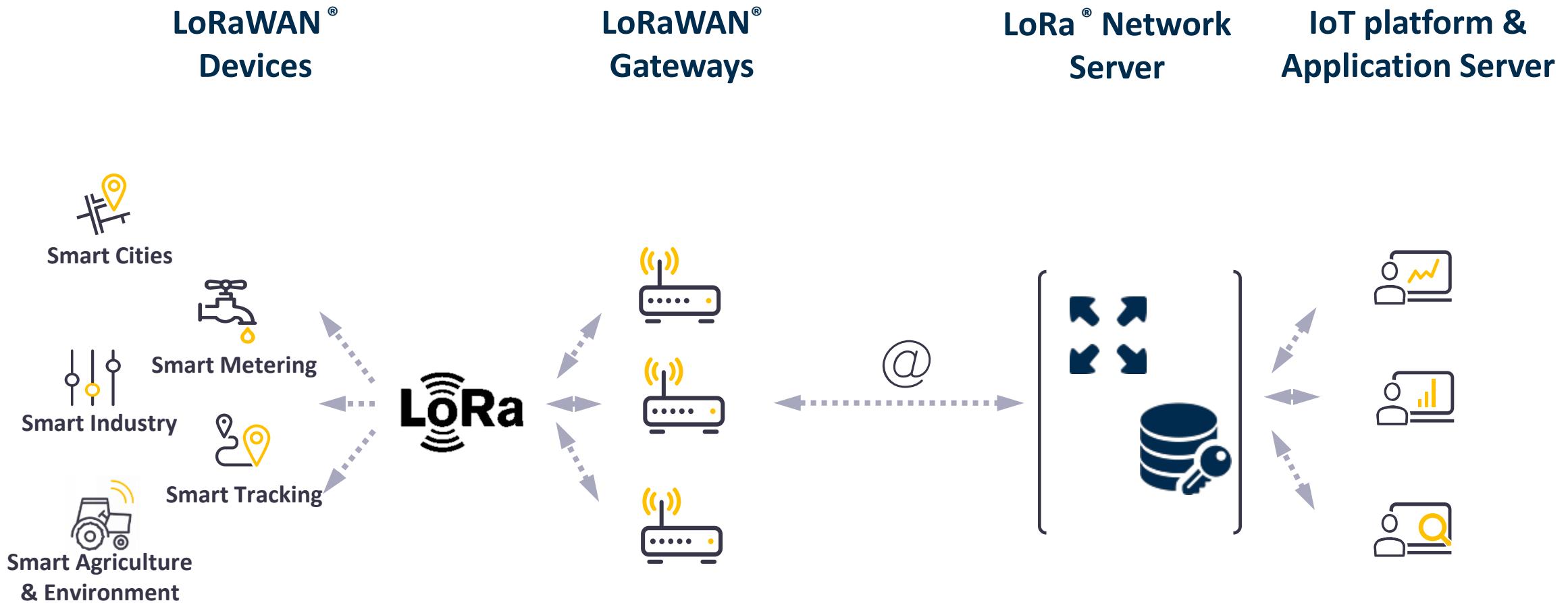


Our value chain



Kerlink LPWAN IoT Connectivity Global Value Proposition - Kerlink®2020

Reminder : An IoT project , Concept & Architecture



**The quicker you find the good sensors, the good partner and the good IoT platform,
the quicker you will deploy a solution**

6 Vertical Markets



Fluid & Energy management

- ✓ Smart Metering
- ✓ Smart Network
- ✓ Heat Cost Allocation
- ✓ ...



Building

- ✓ Occupancy
- ✓ Energy consumption
- ✓ Heating, Temperature control
- ✓ ...



City & Region/Territories

- ✓ Smart parking
- ✓ Smart lighting
- ✓ Smart waste
- ✓ ...



Factory & Industry 4.0 (& Tracking)

- ✓ Production monitoring
- ✓ Predictive maintenance
- ✓ Safety and security usage..
- ✓ ...



Farming & Environment

- ✓ Cattle & Pasture Monitoring
- ✓ Irrigation & Water Management
- ✓ Soil Moisture Monitoring
- ✓



Retail

- ✓ Instore Analytics
- ✓ Facility Management
- ✓ Usage optimization
- ✓ ...

Use-cases

The list of use-cases in this presentation is non-exhaustive.

We invite you to contact your Kerlink representative to learn more about use-cases that may not be included in this presentation.

ncsa@kerlink.com

Smart Metering

Fluid & Energy management

- **Smart Network**
 - ✓ Water quality
 - ✓ Leakage detection
 - ✓ Flow management
 - ✓ ...
- **Smart Metering**
 - ✓ Usage monitoring
 - ✓ Billing
 - ✓ Submetering
 - ✓ ...
- **Heat Cost allocation**



Success stories and references : 

Smart Metering

Smart Water Metering



- Maddalena turned to Kerlink to provide an industry-leading reference design and professional services. The combination of 169MHz WMBus and 868MHz LoRaWAN™ reference designs
- The modules are battery powered with a maximum 15-year service life.
- “Kerlink offered us its reference design service with the most updated specifications available. We choose this road to drastically reduce **our time to market** by relying on Kerlink expertise,”
⇒ Maddalena was the **first water meter manufacturer to receive LoRaWAN™ certification**

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maddalena®
METERING EXPERTISE

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

Smart Metering

Tank monitoring

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Project

- ✓ Integration of KERLINK LoRaWAN™ knowledge & IP inside tank level meters.

Outcomes

- ✓ Tank sensor : flexible and configurable operated level sensor with an integrated LoRaWAN™ Radio



Key Differentiators

- ✓ Expertise
- ✓ Time to market
- ✓ Secure technical choices



Smart Metering

Smart Electricity Metering



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DIGIMONDO

- Kerlink gateways are integrated in DIGIMONDO's LoRaWAN™ network rollouts in Germany and across Europe.
- Powered by Kerlink's Wirnet™ iBTS Compact stations, the network generates efficiency of higher than 97 percent uninterrupted connectivity, compared to approximately 80 percent efficiency of meters in basements with classic mobile radio connectivity like LTE.



DIGIMONDO LoRa® smart electricity meter

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

Smart City

Smart City & Region

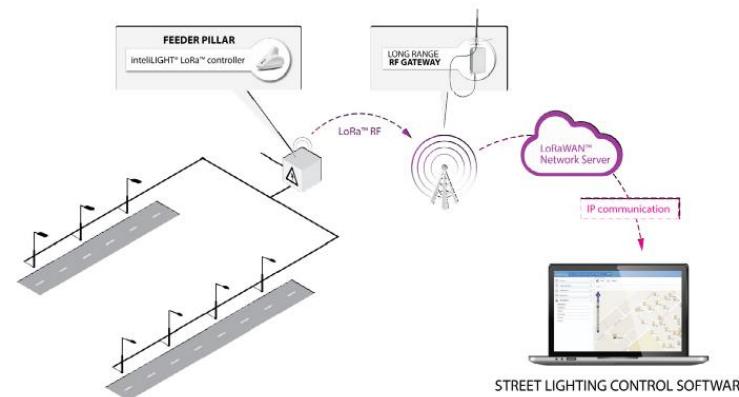
- ✓ Smart parking
- ✓ Smart lighting
- ✓ Smart waste
- ✓ Smart environment
- ✓ Public building management
- ✓ Smart construction
- ✓ Car pooling
- ✓



Success stories and references : 

Smart City

Smart Lighting



main benefits



- Long Range Kerlink LoRaWAN™ Gateways for Economic roll-out of use cases for smart cities :

Only one LoRaWAN™ gateway, up to 20.000 streetlight controllers or other IoT applications in a range of up to 15 km (depending on urban density and specific communication bandwidth requirements).

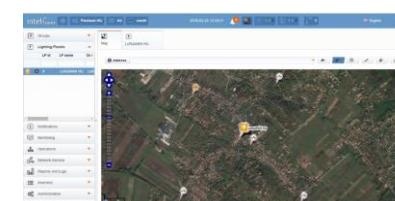
- Practically, cities can benefit from a functioning streetlight control system in a couple of weeks, with no civil works and a minimum amount of deployment effort and upfront investment.
- Remote control of the street lighting system and 24/7 grid monitoring
- Save cost on public lighting maintenance

autonomous street lighting operation

- turning ON/OFF**
- DIMMING**
- smart SCHEDULING**
- ADAPTIVE lighting**

More information :

<https://www.kerlink.com/customers-usecases/use-cases/>



Smart City

Smart Environment



Air pollution monitoring in Hamburg:
°Celsius, Humidity, Pressure, NO₂, NO, SO₂, CO,
+ PM1, PM2.5 & PM10 (mass concentrations of particles)

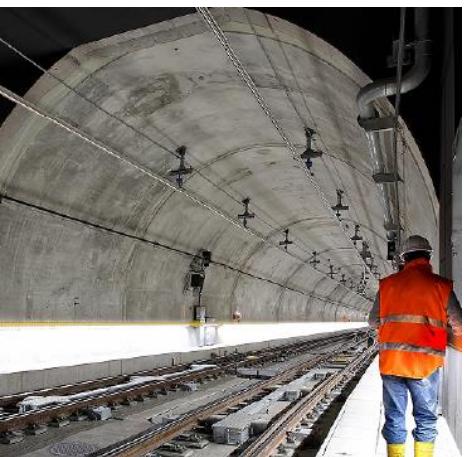


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DIGIMONDO

Smart City

Smart Construction



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WORLD  SENSING

- These critical sensors would measure tunnel structural data including changes in incline and positioning, load, structural strain and structural deformation.
- Worldsensing needed a communications infrastructure and services partner that could supply a high quality, reliable, wireless solution that would also minimize node power consumption.
- Kerlink provided the combination of Kerlink Wirnet™ Stations and network design support was the right set of hardware and services to power Worldsensing's four hundred Loadsensing nodes.

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

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Smart City

Smart Waste Management

Optimise the waste management operations



Key characteristics of vertical market

- ✓ Smart City RFPs now more horizontal with incentive to get bin management real-time into Smart City dashboards

Current vertical pain points

- ✓ No real-time information on waste bin filling level
- ✓ Pick-up routes are not adapted to bin filling level, thus same routes are always used leading to CO2/gas waste et traffic complications

Key Benefits

- ✓ Real-time location and monitoring of waste containers filling level
- ✓ Containers are emptied only if they are detected as full
- ✓ Recycling containers pickup service becomes more efficient reducing costs and CO2 emissions.
- ✓ Waste vehicle operations & pick-up routes are adapted and directed in real-time towards full waste containers



Smart City

Smart Parking

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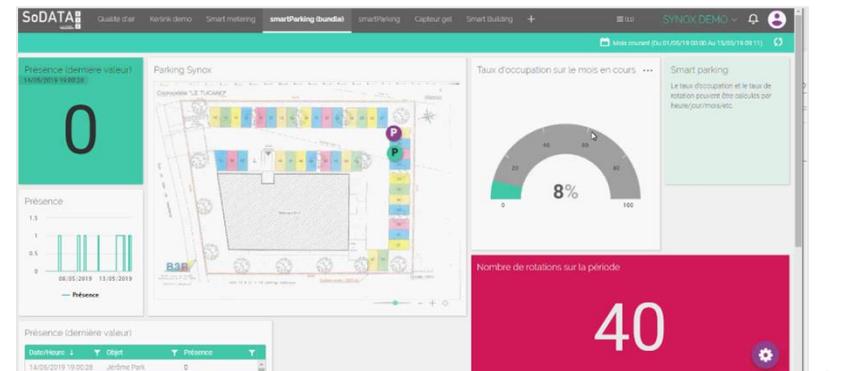
BOSCH

onesitu
BY CIRCE

PNI **netvox®**

Challenges

- ✓ How to easily identify the number of free & occupied parking spaces?
- ✓ How to count the number of entries/exit from a parking?
- ✓ How to manage specific spaces & control illegally parked cars?
- ✓ How to measure the parking time and send an alert in case of overtaking?



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Smart City

Rennes Metropole

- ✓ Bin monitoring and collect optimization
- ✓ Public building monitoring (Energy monitoring, leakage detection,...)
- ✓ On going project for lighting, parking, watering...
- ✓ Smartlab and citizen openness
- ✓ More than 24 000 msg / day continuously increasing

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WiGIGS

Alkante



Smart City

Bordeaux Smart City Project

- ✓ 500+ sensors connected
- ✓ 200 public street lights
- ✓ E-vehicle charging station
- ✓ Refuse-sorting containers
- ✓ Waste bins
- ✓ Public buildings

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Smart Building

Smart Building

- ✓ Occupancy
- ✓ Smart cleaning
- ✓ Energy consumption
- ✓ Air Quality
- ✓ Heating, Temperature control
- ✓ Water leak detection, Water Quality
- ✓ Smoke detectors
- ✓ Intrusion / Security
- ✓ Asset tracking

Success stories and references : 



Smart Building

Smart Facilities Management

Predictive cleaning and occupancy rate



More details:

<https://www.kerlink.com/iot-solutions-services/vertical-solutions-2/>
<https://www.microshare.io/smart-facilities-dashboards-and-solutions/>

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microshare®
unleash the data

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Smart Building



microshare
unleash the data

temperature

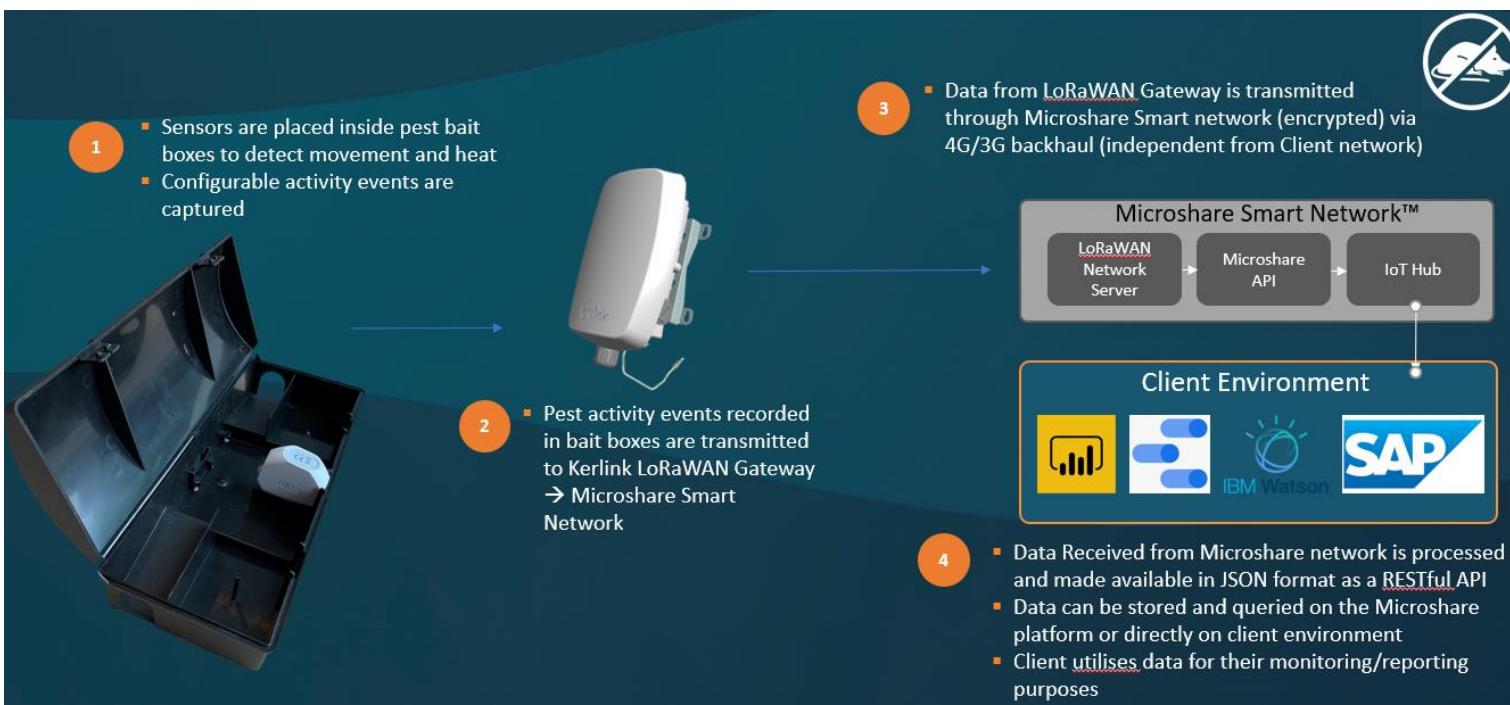


Smart Building

Smart Facilities Management

Pest control

- ✓ Motion/heat sensors are deployed within bait stations to alert when a pest is present
- ✓ Data from multiple devices is delivered via LoRaWAN Gateway, enabling the client to determine the appropriate time to deploy poison, as well as providing overall monitoring intelligence
- ✓ Complete sensing-as-a-service solution with sensors, deployment support and access to the Microshare Smart Network™



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microshare®
unleash the data

Key Benefits

- ✓ Alerts and remote monitoring enable fewer site visits, saving money for contractors and clients
- ✓ Assists in complying with the regulations around use of poisons
- ✓ Data enables better decisions around locations for bait stations

More details:

<https://www.microshare.io/smart-facilities-dashboards-and-solutions/>

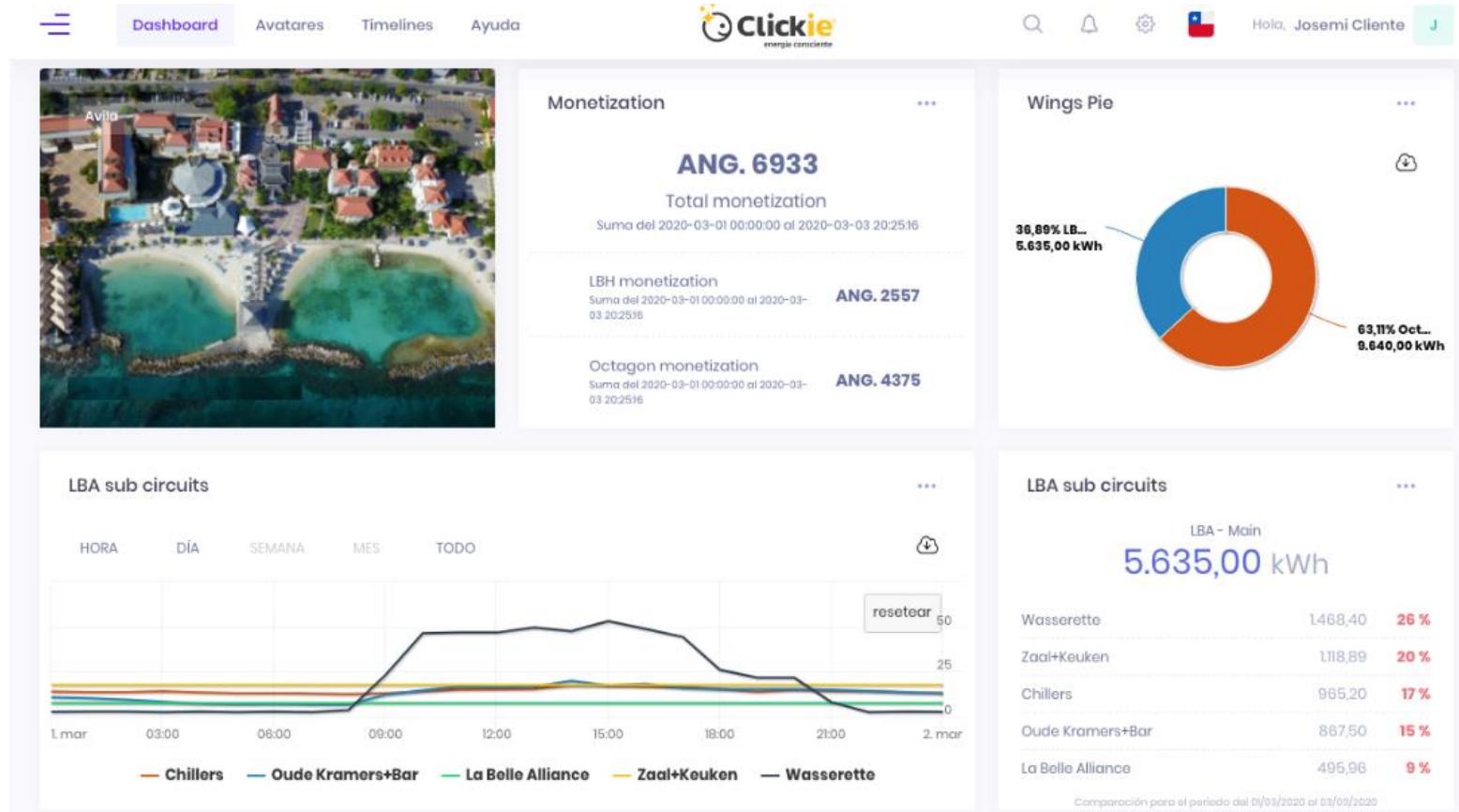
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Smart Building

Smart Energy Management in Hotels

- ✓ Realtime energy consumption
- ✓ AC supervision and optimization

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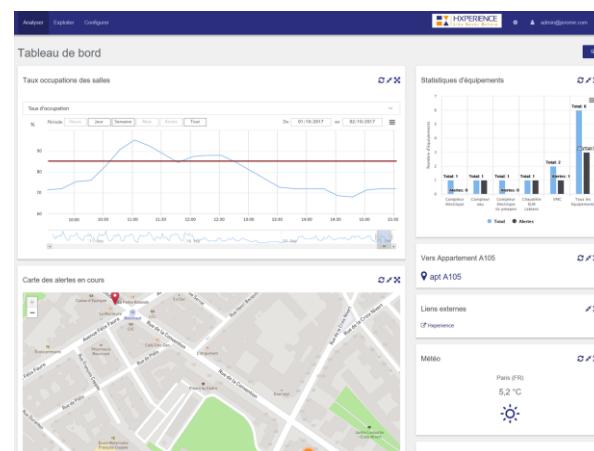
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Smart Building

Connected Maintenance



-  Alert Management and Notifications
-  Diagnosis and remote equipment control
-  Data analysis for specific services (Predictive maintenance ...)



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 HXPERIENCE

Solve problems remotely & Develop new services for customers



Maintenance multi service in residential building (300 000 apartments)

- Automatic management of 200 calls daily
- Reduced on-site visits by -20%
- Launch of new services with high added value

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

Smart Building

Reduce carbon footprint in hotels

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 HXPERIENCE

Reduce energy bill

Guarantee sanitary quality and improve comfort in hotels

Pulse



ERP

Usage and consumption KPI calculation



Building performance benchmark



Thresholds and alerts management

- Overconsumption
- Working equipment unused



Deployment of 800 buildings
-10% on energy consumption per room
-10% on water consumption per night
+ 19% annual critical equipment availability

More information :

<https://www.kerlink.com/customers-usecases/use-cases/>

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Smart Environment – Indoor Air Quality

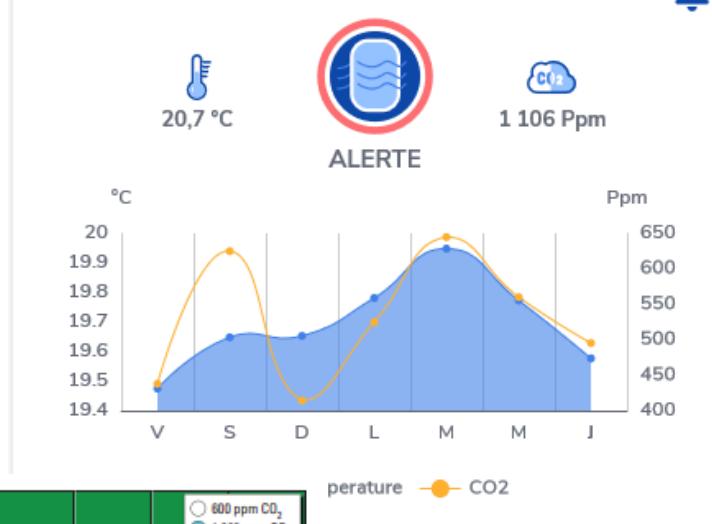
Studies has shown that air stuffiness deteriorates particularly in bedrooms at nights and in meeting rooms during business hours affecting both comfort and cognitive efficiency.

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HXPERIENCE

Qualité de l'air

Dernière donnée : 15:41 - 19/12/2019



Client Benefits

- ✓ Provide easy to use air quality indicator for occupants comfort
- ✓ Improving guest quality of sleep
- ✓ Limits the development of asthma-type pathologies and allergies
- ✓ Proving better meeting environment limiting decreased of cognitive or psychomotor performance (decision making, problem solving)



Solution Features

- ✓ Sensor: Wireless & Battery enabled sensor measuring temperature, humidity and CO2
- ✓ Network: LoRa network
- ✓ Smati app: Easy to read stuffiness index ranging from 0 to 5, alarm generation and notification.

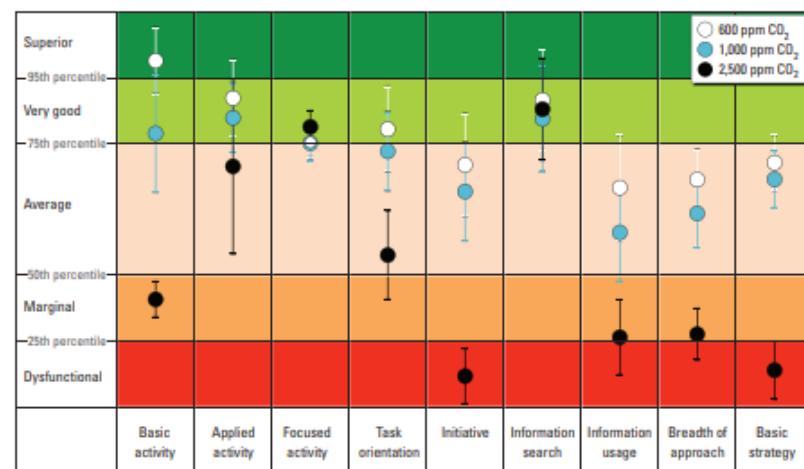


Figure 2. Impact of CO₂ on human decision-making performance. Error bars indicate 1 SD.

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Smart Tracking

Contact-Tracing solution

Covid-19 Response: Anonymized Contact Tracing

No Personally Identifiable Information (PII) used. All recorded and transmitted data are device are User Identifier (UID)-based



Key Benefits

Worker Health	No Personal Information Required	No GPS nor Phone Required	Business Continuity	Turnkey Solution
Monitor social distancing, contact ID and time of contact exposure to trace contacts' history and mitigate virus spreading.	Proximity events with people and places are recorded but no personal data nor individual geolocation are available in the application.	We use Bluetooth wristbands and badges that are easy to deploy to thousands of employees and facility visitors.	Industries and work sites comply with health recommendations, mitigate infection risks for their staffs and continue operations safely using a cost-efficient solution.	Easy and quick to deploy secure and reliable solution combining individual bracelets and an indoor network SaaS application.

More information :

<https://www.kerlink.com/solutions-use-cases/use-cases/>

Smart Tracking

A multi use-case and technology anchor



Wi-Fi counting &/or BLE zoning application

- ✓ "How many people &/or assets are in that specific area?"
- ✓ "How many people &/or assets have been in that place for more than 10 minutes or 1 hour?"
- ✓ "Which are the new assets within the last 10 minutes?"
- ✓ "What is the list of assets in that area?"
- ✓ "Where is this specific asset?"



Wanesy™ Wave
LoRaWAN & Wi-Fi / BLE
iBeacon or Wi-Fi / BLE scan



Smart Airport

Smart Airport: Schiphol use case

USE CASES ALREADY DEPLOYED

- Wheelchair tracking
- Predictive maintenance for luggage carpet
- Toilets cleaning & feedback button
- Check in desk monitoring
- Meeting room occupancy
- Climate measurement

TO BE DEPLOYED...

- Smart parking
- Smart lighting
- Smart Waste



NETWORK DEPLOYED

- KERLINK private LoRa network
- 3 outdoor Gateways (IBTS)
- 37 indoor Gateways (Ifemtocell)
- Kerlink network Server



COVERAGE – 10 Km²

- Landing area
- Passenger/luggage area
- Office areas's

INTEGRATOR

- MCS

Retail market

Retail market



✓ Instore Analytics

- People tracking
- Merchandising optimization
- Staff optimization

✓ Store energy optimization

- Heating control
- Electricity & Water monitoring

✓ Cold Chain monitoring

- Fridge monitoring
- Temperature & Humidity monitoring

✓ Facility Management

- Toilet cleaning
- Predictive maintenance
- Security control

✓ Asset tracking

- Wharehouse automatic inventory
- Trolley tracking

✓ Smart Parking & Lighting

- Parking occupancy
- Light control on parking

Smart Shop

Smart Grocery stores

- ✓ T° monitoring (fridges, AC, ...)
- ✓ Energy consumption (ovens, fridges, cashiers, AC, lights, ...)
- ✓ Counting sensors

- ✓ Savings : **15%** monthly savings on electricity bill

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Asset tracking

Fridge asset tracking and monitoring

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Context

- ✓ Brewery renting fridge to secure ideal/optimal customer experience of a “cold beer”
- ✓ 150,000+ fridge rented to point of sales

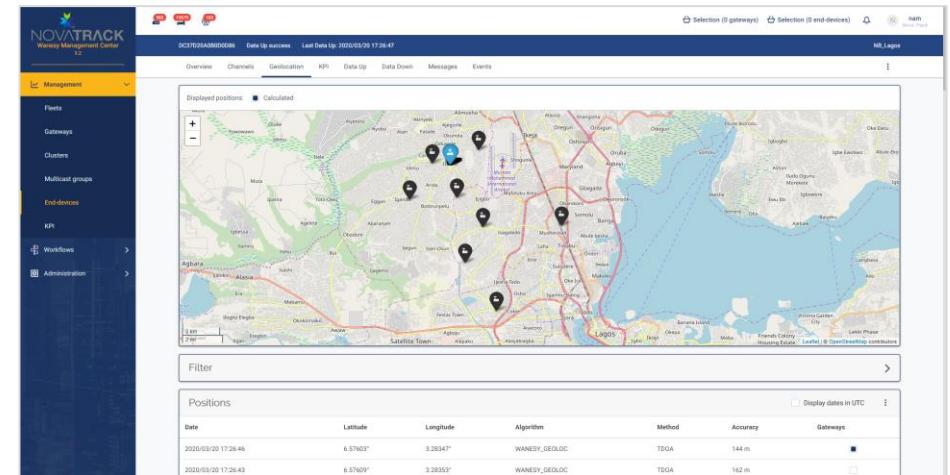
Challenges

- ✓ Geolocation of fridges to avoid theft
- ✓ Temperature Monitoring of rented fridge by National Brewery
- ✓ Operational inputs of the rented fridge (number of open/close door)



Solution deployed

- ✓ 20,000+ temperature & humidity sensors
- ✓ 500+ Kerlink Wirnet™ iBTS gateways, Kerlink Wanesy™ Management Center and Kerlink Wanesy™ Geolocation



Results

- ✓ Fridge location with outdoor infrastructure
- ✓ Information on the assets offered by the supplier to its distribution partners
- ✓ Reduction of theft
- ✓ Optimization of maintenance
- ✓ Improvement of customer experience

In-store analytics

Instore analytics solution for retail

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SmartTraffik

Retail challenges addressed

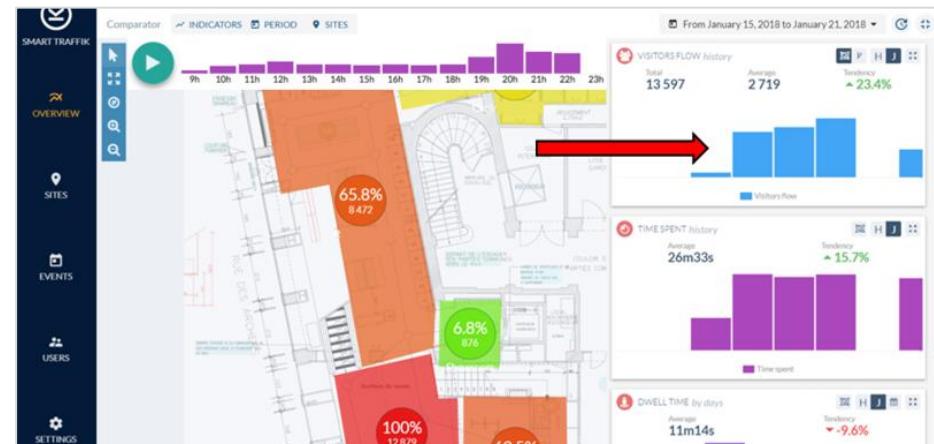
- ✓ Monitor the customer journey in store to understand how physical space is used
- ✓ Analyze collected data in order to take action:
 - Analyze consumer path and behavior and optimize visual merchandizing
 - Manage marketing investments by taking into account the store level
 - Base staff management decisions on accurate traffic data

Key Benefits

- ✓ For retailers with physical stores, to improve customer experience, increase loyalty and sales

How it works

- ✓ Place Smart Boxes at strategic points
- ✓ Collect data in real time by capturing visitor's smartphones Wi-Fi probe requests*
- ✓ Process anonymous data through next generation algorithms with multiple customizable
- ✓ Analyze data through smart dashboards with customer journey indicators



Traffic counting

- Perimeter counts (entrance / exit traffic)Our SmartBox captures Wi-Fi enabled smartphones and we can if needed integrate an external door counter solution to our Backoffice in order to capture 100% of traffic.
- Our solution also allows to track traffic per area, the direction of traffic and more.



*A probe request is a network frame automatically sent by a smartphone to find a new Wi-Fi service in order to pair to it

Smart Agriculture

Smart Agriculture

Smart Vineyard



Château Kefraya vineyards in Beqaa Valley,
Lebanon



Waspmote Plug & Sense! Smart Agriculture PRO
positioned at the vine trunk



- Outsmarting climate change: Chateau Kefraya is Lebanon's first vineyard to leverage LoRaWAN™ and the Internet of Things to deal with changing growing conditions.
- Long-range coverage (Kerlink's two-way gateways can easily cover distances up to 15 km).
- Cost-efficient connectivity.
- Energy-saving consumption, which are critical for the deployment of remote, battery-powered sensors.
- **increasing vineyard productivity and efficiency** by leveraging technology to adapt to external events and elements with maximum flexibility and efficiency.

=> **improves wine quality and raises customer satisfaction.**



Libatel team installing Kerlink's LoRaWAN™ Wirnet™ Station

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

Smart Agriculture – Cattle Monitoring

Challenge

The size of the herd is increasing and the farmer has to ensure quality, health, productivity with less time per animal :

- Detecting heat on dairy cattle
- Detect calving time
- Detect sick cows in the herd



Solution/Benefits

- Heat detection increased from 45 to 95 %
- Calving detection reduces by 60 % mortality on calves and cows
- Health issues detected 24 to 48h earlier, reduces medication consumption

Some of our partners :

- <http://www.medria.fr/solutions/>
- <https://smaxtec.com/en/>
- <https://lar.tech/en/products/>
- <https://sodaq.com/>
- <https://www.chipsafer.com/>
- <http://brincow.com/>

Sources : Semtech

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Smart Agriculture

Smart Farming



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Medria

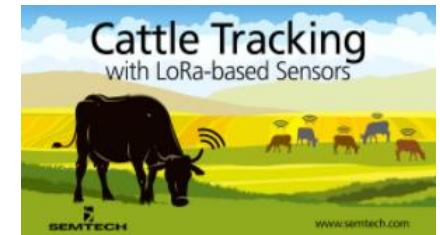
- Over 300,000 cows being monitored in Europe and the United States thanks to Kerlink Wirnet Stations and iFemtoCells gateways
- Increase fertility rates of cows and reduce mortality rates of calves
⇒ **increase overall farm productivity**
- Connected cattle solutions can reduce calf mortality rates by 80%. This might save farmers 10-15% of their annual operating costs.
- **Kerlink provides the answer with a LoRaWAN solution**, Medria launches its agricultural sector IoT solution 30% faster with Kerlink

More information :
<https://www.kerlink.com/customers-usecases/use-cases/>

Smart Agriculture

Cattle tracking and monitoring

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Challenge

- ✓ Cattle theft is on the rise globally and farmers need to track cattle herds in real-time
- ✓ Livestock surveillance is key for early warning and predicting disease emergence and spread
- ✓ Livestock is one of the fastest growing segments of the wearable tech market but producers need affordable solutions

Solution & Benefits

- ✓ Application provides the ability to track cattle and monitor their movements
- ✓ Allows ranchers to better track their livestock location, activity, and health
- ✓ Reduces operating costs and increases production in cattle farms

Key Differentiators

- ✓ LoRa Technology's long-range, low-power capabilities enable tracking applications running on batteries
- ✓ Solution relays an animal's position to the rancher and sends alerts when the animal deviates from its normal path



Sources : Semtech

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Smart Agriculture

Cattle tracking and monitoring

REAL TIME MONITORING TO TRACK AND DETECT ANOMALIES IN CATTLE POPULATIONS



Platform combines hardware and software to offer end to end ranching solutions

- Proprietary platform transforms data gathered from sensors into actionable information to provide ranchers with deeper insights about their business

Hardware platform comprised of Smart Devices and Antennas

- Livestock sensors pass data on body movement, and geolocation to LoRa enabled gateways via wireless RF technology

Cloud-based software analyzes sensor data and offers “smart alerting”

- Algorithms provide real-time data analysis, aggregation, anomaly tracking, and mobile alerting for all members of the “cattle value chain”



- #1) Embedded Sensors for Geolocation and Monitoring
- #2) LoRa Enabled Gateway & Satellite Relay Data to Cloud
- #3) Cloud-based Software Tracks Anomalies & Sends Alerts
- #4) Web-based Portal for Data Analysis and Aggregation

Smart Agriculture

Automated Stem-Water Measuring System



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 **Saturas**
Decision Support System
for Precision Irrigation

- Tree-embedded sensor system that continuously measures stem water potential (SWP) of trees and vines
- SWP is scientifically recognized as the most reliable measurement of water stress and an important practical tool for irrigation management
- Turnkey offer including solar panels, **Wirnet™ iStation** and **Wanesy™ Management Center**

More information :
<https://www.kerlink.com/blog/2020/03/31/kerlink-solutions-to-power-rollout-of-worlds-first-automated-stem-water-measuring-system/>

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Smart Agriculture – Soil Moisture

Challenge : Soil monitoring

The environmental pressure and race against better yield induces

- Need of better understanding the impact fertilization.
- Reduce the use of treatments and prefer preventive ones.



Solution/Benefits

- Continuous monitoring of soil gives better vision of the impact of fertilizer and allows adapted fertilization (20% reduction)
- Soil moisture monitoring will allow 20% consumption reduction in irrigation water

Two main solution providers/specialist :

<https://www.sensoterra.com/>

<https://teralytic.com/>

More information about partnership with Sensoterra



Note : it is also proposed by LoRa generalist (Netvox, Libellum).

Smart Agriculture – Water management

Challenge - Water Management

Water management is one of the key global use-case on smart farming. It includes

- Measurement via **Weather stations** or probes (like soil moisture ones)
- Water management via **Tank level sensor**
- **Flood detection of rivers** using ultrasonic sensors under bridges
- Action via valve monitoring, irrigation system

Solution/Benefits

One unique connectivity solution for many devices focusing on water consumption, optimization and management

Some of our partners :

<https://tekelek.com/>

<https://www.robeau.tech/>

<http://metos.at/>

<http://www.stregatechnologies.com/>

<https://www.ellenex.com/>

<https://www.decentlab.com/>



Smart Agriculture - Smart Aquaculture

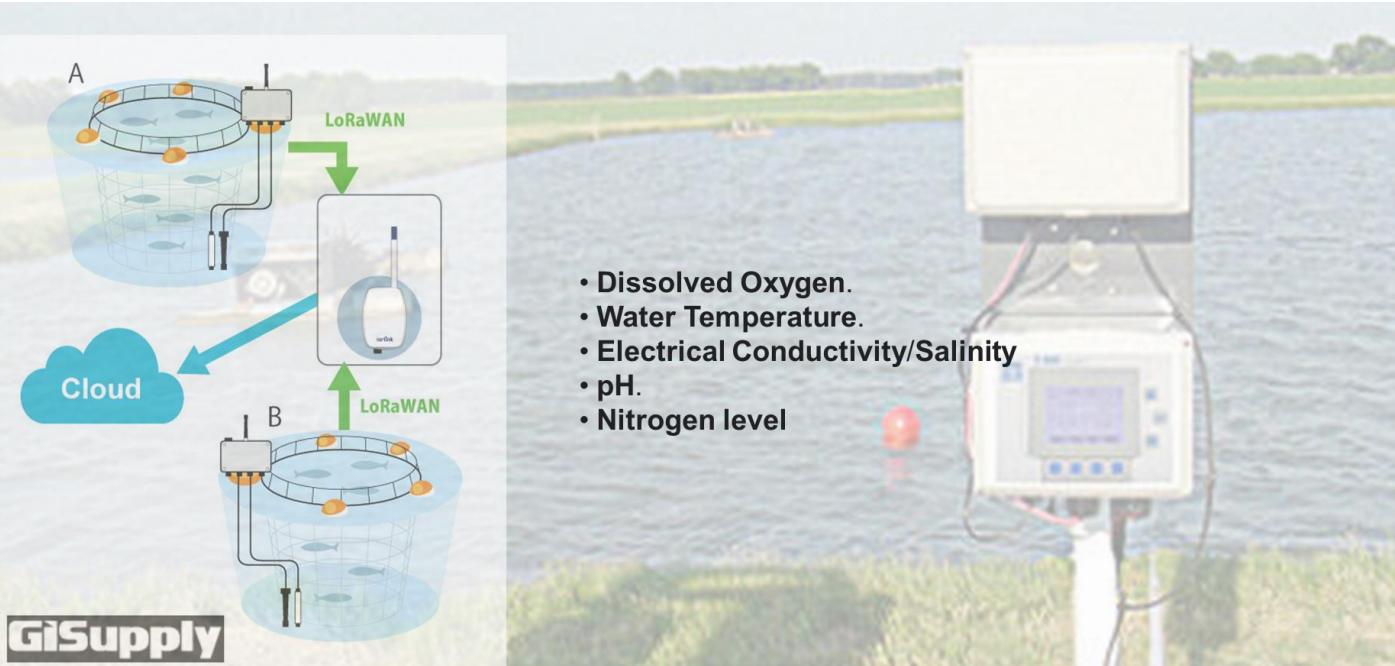
Water Management : Smart Aquaculture solution

Challenge

- ✓ Poor water quality reduces growth and affects health of fish (growth potential and reproductive abilities).
- ✓ Water quality problems may develop suddenly from environmental phenomena (heavy rains, pond overturn), or gradually through mismanagement.

Solution & Benefits

- ✓ GISupply solution helps improve effectiveness of fish breeding by enabling producers to continuously monitor water quality and temperature, which is critical because of global warming.



Key Differentiators

- ✓ Easy to deploy, long battery life and long range

Smart Agriculture – And also

- Asset tracking for Theft recovery
- Monitoring usage for shared agriculture equipment
- Building ambient Monitoring
- Predictive Maintenance on electric and mechanic assets
- Access control and security
- Pasture monitoring
- Air quality monitoring
- Goods conservation monitoring
- Forest Fire Detection
- ...

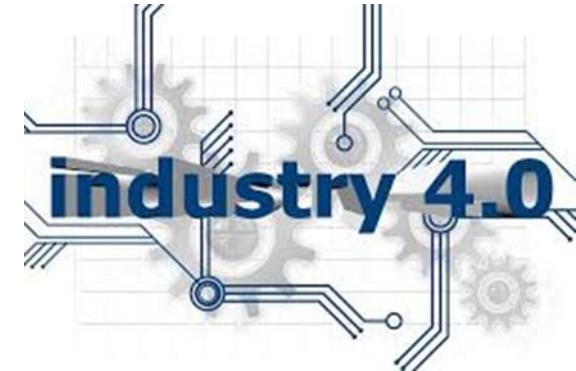


Success stories and references : 

Smart Industry

Smart factory & Industry 4.0

- ✓ Production monitoring, fluid and energy consumption report
- ✓ Predictive maintenance
- ✓ Optimization of assets flows, stocks and logistics
- ✓ Safety and security usage monitoring (isolated worker,...)
- ✓ Easy retrofit
- ✓ Private Network
- ✓ ...



ASSET MONITORING in Oil & Gas

SRETT
INDUSTRIAL & HEALTHCARE INTELLIGENCE

Solutions deployed

- ✓ Upstream Asset monitoring & management in offshore platform
- ✓ Outdoor LoRa Kerlink Network (iStation + Wanesy Management Center)
- ✓ Sensors : Bumblebee Atex pressure/temperature sensor (SRETT)



Benefits:

- ✓ Automatic reports and alerts
- ✓ Less human errors on physical crosschecks
- ✓ Digital Transformation of O&G producer



ASSET MONITORING in Oil & Gas

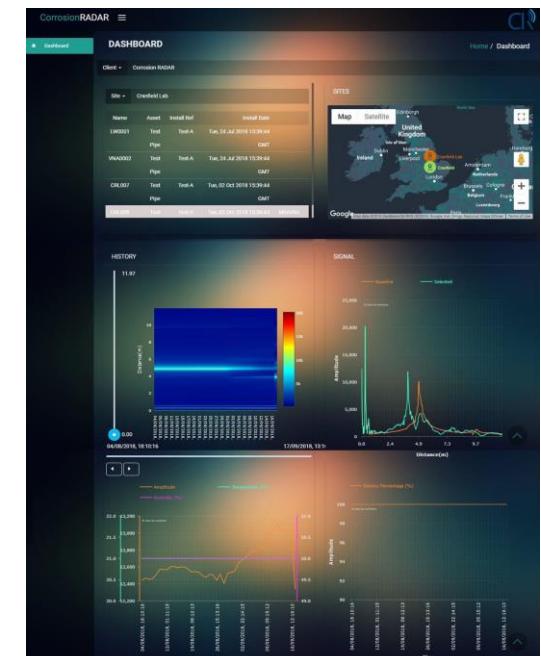
Challenge

- ✓ Customer needs to understand the “health” of its production/logistic infrastructure in a complex environment (ATEX)
- ✓ Minimization of corrosion damage and efficient focused inspection are key



Benefits

- ✓ Detection of corrosion on production pipes
- ✓ Predictive maintenance
- ✓ Reduce time to restore
- ✓ Optimize production



ASSET MONITORING in Industry 4.0



Universal Smart Monitoring Solution for Predictive Maintenance

Objectives

- ✓ Improve efficiency of production units by avoiding unplanned downtime
- ✓ Provide a non-intrusive universal solution simple to install

Solution deployed

- ✓ Asystom Sentinel sensors + Asystom View for visualization and alerts
- ✓ Kerlink iStation or iFemtocell-evolution with either **Wanesy SPN 2.X** for Edge computing or **Wanesy Management Center** for larger deployments

Key Differentiators

- ✓ Easy to deploy as non-intrusive
- ✓ Applicable to Manufacturing such automotive/plastic, Food, Pharmaceutical, Steel / Aluminium / Plastic, Oil & Gas, Water, Chemicals, Waste management, ...



AsystemSentinel family

Multi-sensors

Integrated (as standard)

- Vibrations
 - Ultrasound
 - Sound
 - T° Ambient
 - T° Surface
 - Humidity
 - Pressure
 - Gyroscope (**)
 - Shocks (**)
- Optional (external) (*)*
- 4-20 mA,
 - T° external
 - Dry Contact (On / Off)

Autonomy

Outdoor & Hazardous

Up to 8 years autonomy with 4 AA battery

Indoor

Up to 5 years autonomy with 2 AA battery

Optional external power supply (*)

Intelligence at the edge

- Powerful calculation capacity
- Algorithms for prediction of dysfunctions and drift.
- Connectivity: LoRa and Bluetooth
- Encrypted and Secured data transmission

(*) available on BI-DLX (IP66 version)

(**) on project basis

PEOPLE TRACKING

Safety and Tracking of workers on jobsite

Solution deployed

- ✓ 3 Gas plants (undisclosed customer, major actor in Oil and Gas)
- ✓ People tracking + Emergency button
- ✓ LoRa connectivity deployed on the jobsite : Outdoor Kerlink Gateways iStation
+ Wanesy Management Center
- ✓ Sensors : Abeeway GPS/LoRa trackers



And many more with a full ecosystem of partners

iMETOS®

Pessl
INSTRUMENTS



SENSA IOT TECH
CONNECTING THINGS

ZENNER

maddalena®



BeeZeeLinx

Lucy zodion

SmartTraffik
Omnichannel Consumer Centric Solutions

SYNOX
Innovate together

Telemar
internet quality provider

skiply
Push to action

STREGA

BH
technologies

clickie®
energía consciente

microshare®
unleash the data

WORLD W SENSING

legrand®

SENSING VISION
IoT FOR SMART ACTIONS

Tekelek

SITEC
Solutions Informatiques & Technologiques

ercogener

adeunis
WIRELESS PRODUCTS & SOLUTIONS

HXPERIENCE
Like Never Before

Honeywell

SENSOTERRA

kerlink
communication is everything

Why KERLINK ?

16+ years IoT experience combining global networks, connected devices and vertical apps

A leading full service LoRaWAN™ infrastructure provider with a proven track record of large deployments with public operators and private businesses worldwide (Kerlink powers 58% of worldwide LoRaWAN deployments⁽¹⁾).

Cumulated experience in **robust network design and operations integration**.

Carrier-grade, future-proof and evolutive **LoRaWAN™ gateways, network management suite, services enablers and reference design** to anticipate specification evolution, support new enabling capabilities and secure data collection and transport.

Strong ecosystem of partners to deliver IoT solutions fitting to customers' requirements.

Thank you!

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