## X-TELIA



## The Internet of Things

Solutions currently available on the X-TELIA network

February 2022





## The Internet of Things (IoT)

The advent of new **long-range**, **low-power wireless** technologies is revolutionizing what can be done with connected objects. Companies around the world are now competing to develop innovative solutions that take advantage of these new technologies. X-TELIA specializes in these new technologies and brings the best innovations from around the world to cities and businesses. Here are just a few of the innovations offered by X-TELIA and its partners.





## Solutions for Smart Cities





## Geolocation



## Outdoor location of vehicles, assets or people

World-class platform that is fully customizable and configurable to meet the most diverse needs. Compatible with over 2700 types of GPS tracking devices.

Available today

### X-TRAQ

#### Allows to follow:

- Motorized vehicles (LoRaWAN or cellular)
- Non-motorized assets (LoRaWAN battery powered GPS)
- Personal via their smartphone















## LoRa GPS Trackers®

Compatible with the X-TRAQ geolocation platform

Available today

#### Indoor / outdoor personal trackers

Rechargeable LoRa and BLE GPS tracker with accelerometer and temperature reading. Weatherproof. Man Down detection available.



#### Industrial Tracker X-1

GPS tracker industrial LoRa tracker with 3 years battery, very robust casing that can be fixed anywhere, IP67. 3D accelerometer. Ideal for locating lost or stolen items.

Operation -40°C - +60°C 85 mm x 63 mm x 24 mm



#### Industrial Tracker X-2



Industrial LoRa GPS tracker with 3-5 years battery, very resistant casing that can be fixed anywhere, IP67.
3D accelerometer. Ideal for locating lost or stolen items.
Operation -40°C - +60°C
115mm x 65mm x 20mm



#### X-3 Vehicle Tracker



Rugged, weatherproof, powered LoRa GPS tracker with I/O. The electronics, backup battery and antenna are inside a rugged nylon-glass case.

- Odometer and engine hour tracking
- Ignition detection
- 3D accelerometer
- Internal battery (backup)
- 1 x ignition input
- 2 x digital inputs1 x analog input
- 1 x digital output

#### Indoor / outdoor personal trackers



Rechargeable LoRa GPS trackers with motion detection, panic button, indoor location via WiFI or BLE, rugged and waterproof



Several international manufacturers are currently developing new LoRa GPS trackers.

X-TELIA works with many of them to distribute them in North America.





#### Indoor / outdoor location

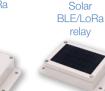
For staff or assets

Available today

#### Personnel tracker



BLE/LoRa relay



Asset Tracker

BLE/LoRa trackers allow to locate assets inside





BLE/LoRa relay powered



Tag BLE

X-TELIA

Economical

and discreet.



Tag BLE

Industrial BLE beacon



6 years autonomy at 500 msec diffusion

#### Container Tracker

Ultra-rugged, accelerometer, GPS, relay for BLE tags, very long autonomy, fraud detection fraud detection.



Real-time tracking of personnel or assets inside buildings

Integrated light

sensor.



The solution combines the long range of LoRa to cross floors and walls with the short range of BLE to identify the position of people or assets in the building. Much better performance than WiFi solutions.

Our solutions can do indoor tracking by triangulation or by zones, depending on your specific needs.





#### Indoor / outdoor location

For staff or assets

Available today

#### How it works...



The X-TELIA solution (fixed beacons) is an advanced combination of trackers, Bluetooth beacons and a LoRaWAN gateway. In this solution, the Bluetooth beacons are deployed at fixed locations and the tracker is installed on assets or is worn by people. The tracker activates Bluetooth reception when the positioning interval arrives. If it receives sees one or more Bluetooth beacons, it reports their presence and signal strength to the LoRa gateway and then to the cloud-based location application. If it cannot receive any beacons, it then activates its GPS for outdoor tracking. Beacons can be deployed indoors or outdoors, so you can use Bluetooth tracking anywhere you want. Bluetooth reception is much more energy efficient. Below are some examples of typical uses:

#### Pallet, vehicle or container tracking Product: External asset tracker

The tracker can send approximately 120,000 Bluetooth tracking messages or 20,000 GPS coordinates.

#### Container Tracker

The tracker can send approximately 180,000 Bluetooth tracking messages or 32,000 GPS coordinates. It supports magnetic switching, withdrawal detection, movement time report, asset management in the container with Bluetooth tags (100 tags maximum). It is a perfect device for logistics, containers, pallets, vehicles or container tracking. With this tracker, you will know: Where the asset is, how long it has been moving in the last few hours, if it has been removed from the container or not, what assets are in the container, how many there are and where they are. Up to 20 offline location messages when the LoRa network is not found.

#### Badge

The badge allows indoor and outdoor tracking with 16,000 Bluetooth messages or 2500 GPS coordinates. It can be used to track visitors. The panic button and fall detection features are perfect for tracking workers at a chemical plant, oil rigs, wind power plants or other offshore tasks.

#### Construction helmet sensor

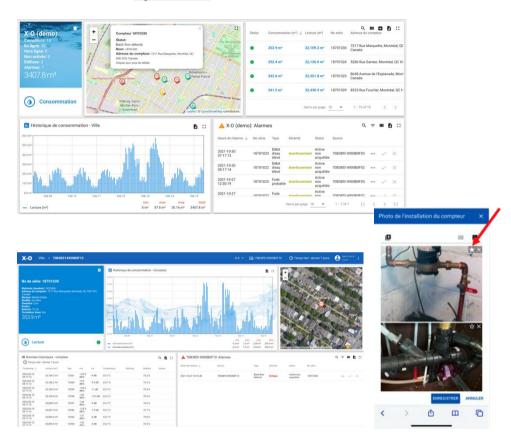
The sensor supports safety and management functions to improve your management level and reduce costs. Detection: Helmet detection, fall detection, step counting. Alarm: Search and rescue mode even when the network is not available. The alarm can be triggered by a phone or a Bluetooth beacon. Geofence: An alarm is triggered when the sensor is within the predefined geo perimeter. Tracking: It allows indoor (Bluetooth) or outdoor (GPS) tracking.





# Remote reading of water meters - X-O platform Available today

Universal platform, compatible with water meters from major manufacturers - **open data** 



This open platform offers great flexibility, 10 types of alarms (leaks, communication problems, backflow, etc), usage reports, powerful usage graphs, etc.





# Remote reading of water meters - interface unit

Available today

### LoRa module for remote reading of water meters:

- Reads new encoded counters from major manufacturers (UI-1203 interface)
- Reads meters with Pulse interface
- Easy to install
- Weatherproof (IP67)
- Fraud or leak detection
- More economical than drive-by solutions
- Allows you to accumulate a detailed history of one reading / hour for over 10 years
- Secure bidirectional communication (AES 128-bit)
- Easily accessible data can be imported directly to a management / billing system (open data)
- Dashboard to view data, generate unusual consumption alerts and consumption reports (available)









With our water meter reading modules, you have access to your raw data without having to pay a subscription to a water meter manufacturer. You can choose the brand of water meter you want, without being held hostage.





## Smart parking

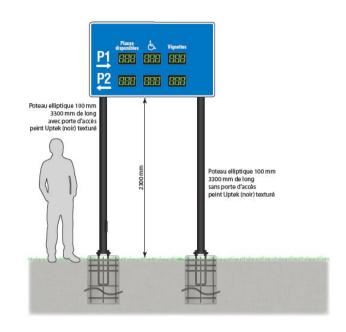
(counting and detection of vehicles)



#### Underground

Dual detection technology (radar and electromagnetic). This product is installed in Montreal in downtown and old Montreal streets.

Available today







# Waste Management and recyclable materials





#### Ultrasound + LoRa

Product running on the X-TELIA network. Integration with the manufacturer's cloud platform completed and functional.



Powerful management platform translated into French by X-TELIA. It allows to follow in real time the level of waste of containers distributed on a given territory, and to generate dynamic collection routes that can be transferred to drivers via a mobile application.

Collection cost savings: 30-50%.

- Level measurement of liquid or solid materials, filling or emptying.
- Level measurement once an hour, data transmission once a day. Immediate transmission when a critical threshold is reached.
- Can last more than 5 years on battery.
- Weatherproof (IP67)



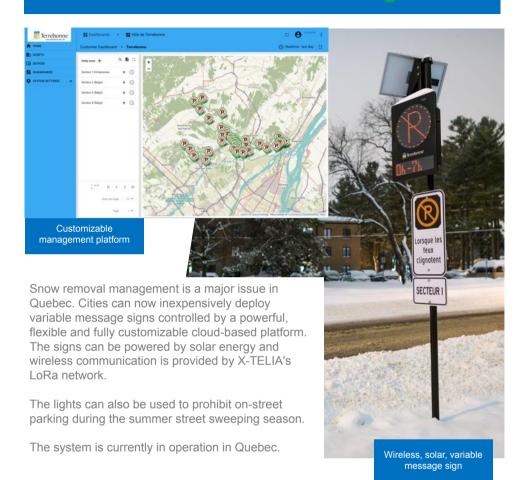
X-TELIA has an exclusive distribution agreement for major cities as well as for large waste management companies.





## Snow removal - displays

Available today



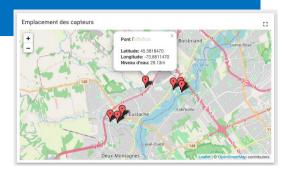


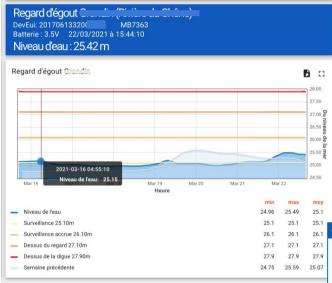


## Water management - flooding

Available today

Simple interface to track real-time water levels in the city. Accessible 7/24 on smartphone or computer.





You set your own thresholds and decide who gets a text or email when each threshold is reached. This allows you to sleep easy and to react quickly in case of flooding.



Monitor and optimize network operations, reduce leaks and lower maintenance and energy costs.





# Water management various sensors







Wireless, battery operated pressure sensor





Wireless and battery powered level sensor





Wireless heated or unheated rain gauge





Wireless and battery powered flow sensor





Pulse / event sensor wireless, battery operated,





Monitor and optimize network operations, reduce leaks and lower maintenance and energy costs.





# Water level measurement for overflows, tanks, wells





Measures the water level very accurately. Ideal for:

Reservoirs and overflows
Rivers during spring flooding
Pipe pressure and leak detection
Intelligent Irrigation
Predictive maintenance
Pump performance monitoring
Wastewater management
Customized application

Can be combined with a LoRa recorder to meet government standards.



Wide variety of probes for drinking water, waste water or fuel level. Up to 500 m depth.

Piezometric or ultrasonic probe, programmable reading interval according to thresholds reached.



## Road surface temperature

Available today

In winter maintenance, the temperature of the road is an important parameter to determine when to spread abrasives, and in what quantities.



LoRa temperature sensors buried under the pavement allow to know precisely the temperature of the pavement in order to optimize the spreading of abrasives.

Battery operation up to 10 years.





# Intelligent watering management of flower beds

Thanks to the use of low energy LoRaWAN sensors, it is now possible to know in real time the humidity level of a city's flowerbeds, and therefore to better manage watering. This approach reduces water consumption, greenhouse gases and wasted time.







Available today

## Control your park lighting remotely



Unlock your park toilets remotely





Multi-functional control

Remotely control relays to activate a circuit, start a pump, activate a valve or other action. Schedule these actions with a dashboard accessible by web or mobile. Visualize the status in real time.





### Mini weather station



Mini wireless autonomous weather station for air quality in cities and for industry.

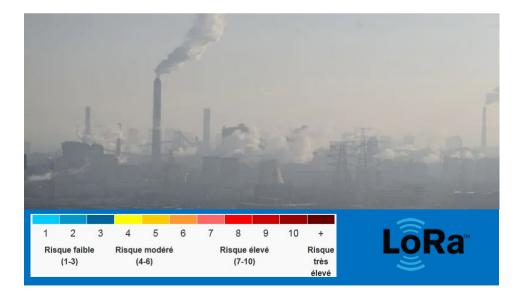
Allows to calculate the **Air Quality Health Index** and the Air **Quality Index** 

- Particulate Matter in Air (PM2.5/PM10)
- Carbon monoxide (CO)
- Sulfur dioxide (SO<sub>2</sub>)
- Nitrogen dioxide (ÑO<sub>2</sub>)
- Ozone (O<sub>3</sub>)

Available today

We can add to it:

- the direction and speed of the wind
- a rain gauge
- a 10W solar panel





# Counting of people, bikes, vehicles

Available today

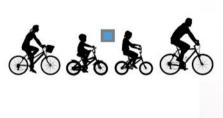


This device allows you to count people coming and going without the use of a camera. The device uses radar technology that works in summer and winter, indoors and outdoors.

The unit can be installed on a wall or ceiling.



People counter









### Smart valve

#### Available today

#### Available in sizes DN15 to DN80 (1/2" to 3")

- Ultra long range LoRaWAN wireless valve
- Very low consumption: autonomy of more than 10 years
- Remote control (Open/Closed)
- 2 x Digital Inputs (e.g.: flow calculation, leak detection, alarms
- State of charge of the battery
- Intelligent operation (e.g. closing in case of change of state e.g. leak detection)
- · Can be powered by external source
- Local manual control available
- Anti-fraud button
- Unique valve identification
- AES 128 encryption



Smart valve

DN65 (2"1/2)

DN32 I (1"1/4)

DN25 (1") DN20 (3/4")









## **Smart Buildings**



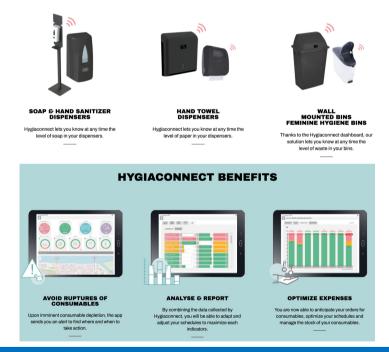
## Connected hygiene



The global health situation requires businesses that operate public spaces to protect their customers by making hand sanitizing gel and hand washing resources available. How do you ensure you never run out of gel, hand soap, hand paper or even toilet paper? Our range of connected sanitary products allows you to know in real time the level of gel, soap, paper or even the filling rate of the trash cans.

JVD's HygiaConnect platform enables centralized and proactive management of these hygiene devices, reducing operating costs and improving customer service.

#### THE MOST COMPLETE RANGE DEDICATED TO SMART HYGIENE



For more details: jvd.fr/en





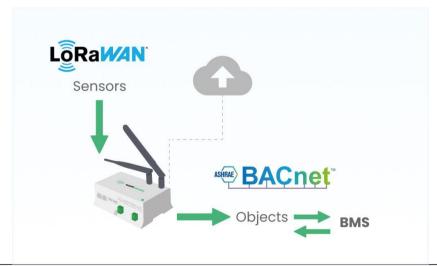
### Energy efficiency



# Equip your buildings with an intuitive and open BMS infrastructure

A simple and open IoT solution that allows you to monitor and control small and medium-sized buildings. Reduce energy consumption and improve occupant comfort.







### Smart meeting rooms

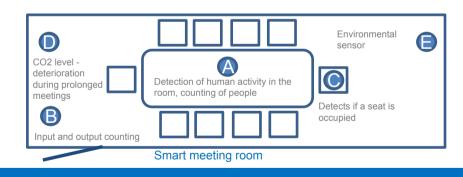
Available today

Organizations with multiple meeting rooms face the challenge of **optimizing room utilization**. Rooms are often **booked but not used**, other rooms are too large for the number of participants while employees are crammed into smaller rooms. **Air quality** deteriorates in overcrowded rooms, **which affects the productivity of the employees** present.

There are simple solutions to address these issues:

- A Presence detector
- B. People counter
- C. Chair occupancy
- D. CO2 level sensor
- E. Environmental sensor (temperature, humidity, light level, atmospheric pressure, carbon monoxide detector)





- Better use of resources
- ☐ Improved employee productivity





### Indoor air quality



Available today

Many volatile compounds can jeopardize the health and safety of workers in both industrial and commercial environments. Poor air quality affects health and productivity.

There are now battery-powered, wireless sensors capable of detecting the following compounds:

- Carbon dioxide Carbon monoxide (smoke, fire)
- Arsine
- Benzene
- Ammonia
- Methane
- sulphur dioxide
- Hydrogen
- hydrogen sulfide
- Ozone

- nitrogen dioxide
- hydrogen cyanide
- hydrogen fluoride
- chlorine gas
- ethylene oxide (ETO)
- hydrogen chloride
- Phosphine
- catalytic flammable gas
- airborne particles





- Wireless easy deployment
- Battery life of several years





#### Reservation of rooms and workstations Available today

The pandemic has forced organizations to implement telecommuting and many are considering continuing in hybrid mode. That's why a room reservation system and floating offices make it much easier to optimize space management.



- Mobile, Web or Outlook application
- Real-time view of open spaces
- Reservations in advance or on site
- Possibility to plan according to colleagues
- Presence detection sensors
- Screens at the door of the rooms to see the schedule
- Advanced resource usage statistics

#### **Busy indicator**

The occupancy light can be installed on a desk, making its availability status visible from a distance. It can also be installed at the door of meeting rooms.





#### Easy to install

Depending on the size of the office, installation can be done in a few days, sometimes even hours. The sensors can be moved and redeployed easily.

#### Optimize the use of meeting rooms

Find an available meeting room for ad hoc meetings in seconds and save space by freeing up unused rooms. With room postings, it's easy to spot ghost meetings and recurring meetings that are no longer attended. These types of booking solutions are perfect in a hybrid workplace where employees sometimes decide to work from home and may forget to cancel their reservation in one of the conference rooms.



#### Integrates with your reservation system

The room display solution integrates with your existing resource reservation systems. Continue to reserve resources as you normally would, but get additional intelligent functionality.









### Residences for seniors









Follow seniors indoors or out. Get alerts. Keep them safe.







## Security and control



Intelligent building module

Available today

Wireless stand-alone device allowing remote measurement and control for various applications:

- Motion detection (door, drawer)
- Shock detection
- Room presence detection (PIR)
- Internal or external ON/OFF control
- Meter reading (gas, electricity, water)
- Light detection
- Temperature
- Humidity
- Water leakage
- Size: 42 x 42 x 14 mm
- Since the module is very flexible, it can easily be configured to meet a particular need.



Complete solution to measure the CO2 level indoors:

- CO2
- Room presence detection (PIR)
- Temperature
- Humidity
- Battery life up to 10 years



**TEKTELIC** 

Intelligent building module







### Energy management



The LoRaWAN® electrical outlet and electrical switch are ideal solutions for smart home and office automation. The outlet gives users the ability to automatically trigger a 120VAC, 60Hz switch on a LoRaWAN® network, enabling cost savings through improved energy consumption practices and enhanced security in the home and office. One of the device's two outlets is equipped with a LoRaWAN® switch, allowing for flexible and versatile use. The LoRa power outlet and LoRa power switch are fully integrated into X-TELIA's end-to-end LoRaWAN® solution



Temperature: 0 to +40 degrees C Voltage: 120VAC, 60Hz Incandescent bulb: 1000 W

Electronic ballast: 5A Conventional ballast: 1200 VA

Engine: ½ HP

TEKTELIC communications





### Measurement and control

Available today



We have a range of industrial products that can transmit sensor readings of any kind and activate relays remotely.

16 inputs, 8 outputs



Relay 120-240V



Multi-functional control







## Industrial solutions







# Industrial Sensors more than 70 models







Temperature sensor

Sensor Dry contacts Sensor Analog powered

L<sub>GRawan</sub>





Sensor analog (0-10v) Sensor Pulse interface

Analog / digital sensor

- Weatherproof (IP67)
- · With fixed or replaceable battery



### Cold chain

Available today



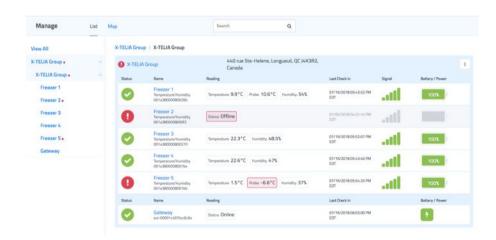


Precise measurement of cold and humidity with or without external probe.



Alerts on exceeding critical thresholds, email or SMS.

Battery that can last several years.



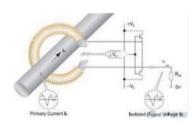




## Power consumption

Available today





Electrical current detector





AC 3 phases



AC 1 phase

- Measurement 0-600A
- Easy to install, wireless communication
- Works outdoors, -40 to +85C
- Accuracy +- 2%.
- LoRaWAN transmission with long battery life





### Generic button





### Residential push button

- Easy to install. No wires
- Allows you to report an event or place a command
- Long battery life and long range
- Size 97 x 38 x 25 mm



#### Industrial push button

- Easy to install. No wires
- Weatherproof (IP67)
- Allows you to report an event or place a command
- Long battery life and long range
- Size 97 x 38 x 25 mm







## Smart agriculture solutions



### Soil moisture



Available today





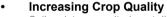
#### Real-time soil monitoring

Maintaining ideal soil moisture conditions reduces the risk of crop failure and increases crop productivity.



#### Higher yields

Maintaining ideal soil moisture conditions reduces the risk of crop failure and increases crop productivity.



Soil moisture monitoring at different depths is the ideal way to optimize crop-specific soil conditions



#### Reduced irrigation costs

Accurate and consistent insight into soil moisture levels eliminates unnecessary irrigation.



#### Completely wireless

Wireless sensors can be placed up to 1.5 km away from the gateway system, allowing for complete monitoring of the iPad, smartphone or desktop



Surface soil moisture



Soil moisture at depth - Watermark probe

Too much water in the soil will wash away nutrients. Too little water will hurt crop growth. Soil moisture monitoring allows farmers to make effective irrigation decisions. However, today's sensors are hard-wired, making them unusable for monitoring multiple points in outdoor farm fields. X-TELIA offers a low-cost, wireless, remote solution that provides farmers with real-time insight into the soil moisture status of their crops.





### Level sensors for silos

Available today

Ultrasonic sensors for accurate level measurement of liquids (basins, tanks, rivers) and solids (bins, silos, containers).



Sensor for liquid or solid tank

- Easy to install. No wires.
- Allows for ultrasonic level measurement and alerts for automated refueling
- Long battery life and long range
- Weatherproof (IP67)
- Accuracy ±1 cm.



Grain silo level sensor

- Ideal for metal containers like silos. The ultrasonic sensor is inside while the LoRa radio is outside.
- Easy to install.
- Weatherproof (IP67)
- Allows for ultrasonic level measurement and alerts for automated refueling
  - Long battery life and long range
  - Accuracy ±1 cm.





### Animal health



#### Monitoring animal health and welfare

Cattle operations are now able to identify abnormal values, prevent the spread of cattle diseases and maintain lower morbidity and mortality rates than ever before. Our system provides feedlot managers or dairy operators with faster data on the performance of their operations. Our smart cattle ear tag extracts behavioral and biometric data from your cattle, allowing managers to see the exact animals that need more attention to their health, and to easily locate them in a group.

A connected collar for 4 services, in the building and in the pasture



Anticipate heat stress events to reduce milk yield losses.







### Pest control

Available soon





Smart mouse / rat trap



#### **Detection**

The intelligent trap knows if it has been moved, if it is still armed, if it has been triggered and if a mouse or rat is trapped.



#### **Transmission**

The information on the status of the trap is transmitted instantaneously when a catch is made and at regular intervals when the trap is armed.



#### Reports

Alerts are sent automatically and reports can be generated to schedule the tour of traps that require a visit, avoiding unnecessary trips or odor or sanitation problems.









### Our network



### The X-TELIA network

Available today

#### X-TELIA NETWORK

The X-TELIA network is a **carrier-class** wireless network. This means that it is **managed end-to-end** by X-TELIA, 24 hours a day, and that its components are ultra-robust to ensure **performance and robustness that** meet the highest requirements. Many cities and businesses in Quebec have adopted the X-TELIA network to manage their assets, read their water meters and track their vehicles. The data that travels on our network remains in Quebec.



X-TELIA network infrastructure partners:









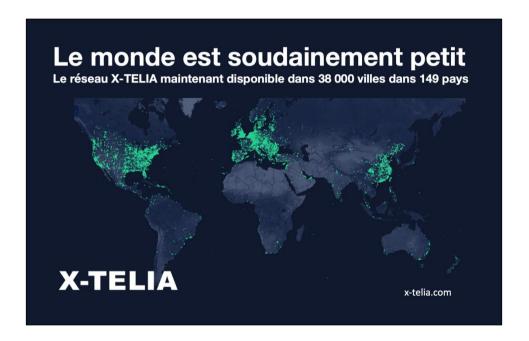


### The X-TELIA network

Available today

#### **OUR EXTENSIVE NETWORK**

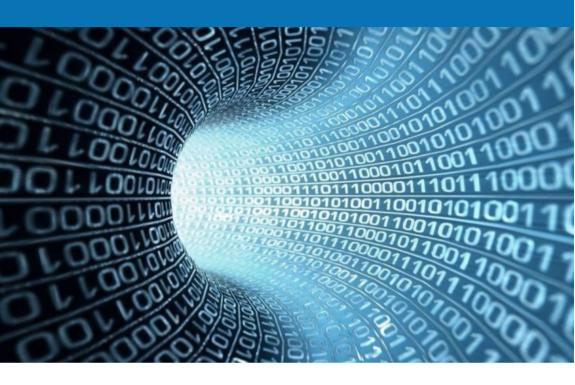
X-TELIA also offers its customers access to its WAN, available in over **38,000 cities worldwide**. This wide area network connectivity is **seamlessly** delivered through partner networks **in a roaming mode**, as seen in the cellular world.



Worldwide roaming at no extra cost







# Our IoT platform

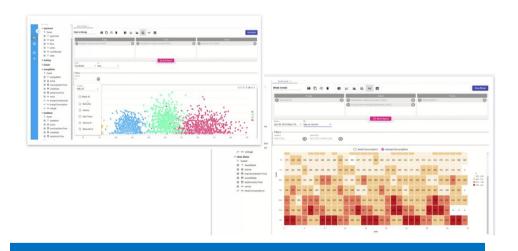


### X-TELIA IoT Hub Platform

Available today

X-TELIA IOT HUB is an IoT platform that enables **rapid integration of** sensor **data**, easy decoding of messages from hundreds of sensor types, and rapid creation of informative and engaging dashboards. It also allows you to set thresholds and alarms that can send text messages or emails when they are reached.

X-TELIA IoT HUB also includes a powerful analytics engine that can turn data into valuable insights so you can make better decisions in minutes.



Accessible on the Web or smartphones.





### Customized integration

Available today

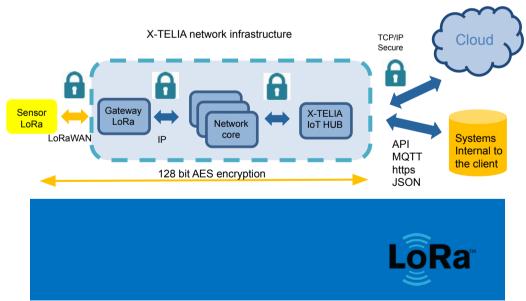
X-TELIA offers an integration service that implements custom interfaces to route a client's data in real time to its computer systems, either local or hosted on a cloud platform (Amazon Web Services, Google Cloud or MS Azure).







X-TELIA supports industry standards such as REST and MQTT APIs.





# X-TELIA

To learn more about our offerings or to obtain a quote, please contact:

info@x-telia.com 1-833-IOT-LORA (1-833-468-5672)

