



# LoRa-based Smart Community Senior care solution

2019/2/25



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# Background

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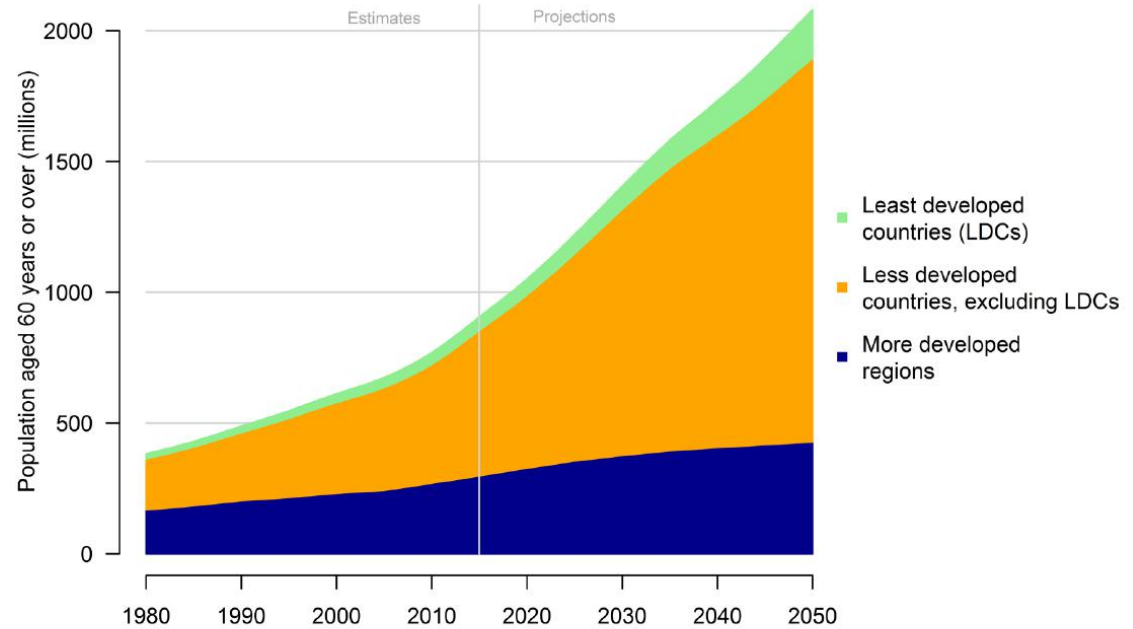
The world is ageing ,the demand for specialized senior care is increasing



# Global Population Ageing

## Key trend in population ageing

- The global population aged 60 years or over numbered **962 million in 2017** , more than twice as large as in 1980.
- The number of older person is expected to **double again by 2050** , when it is projected to reach nearly 2.1 billion

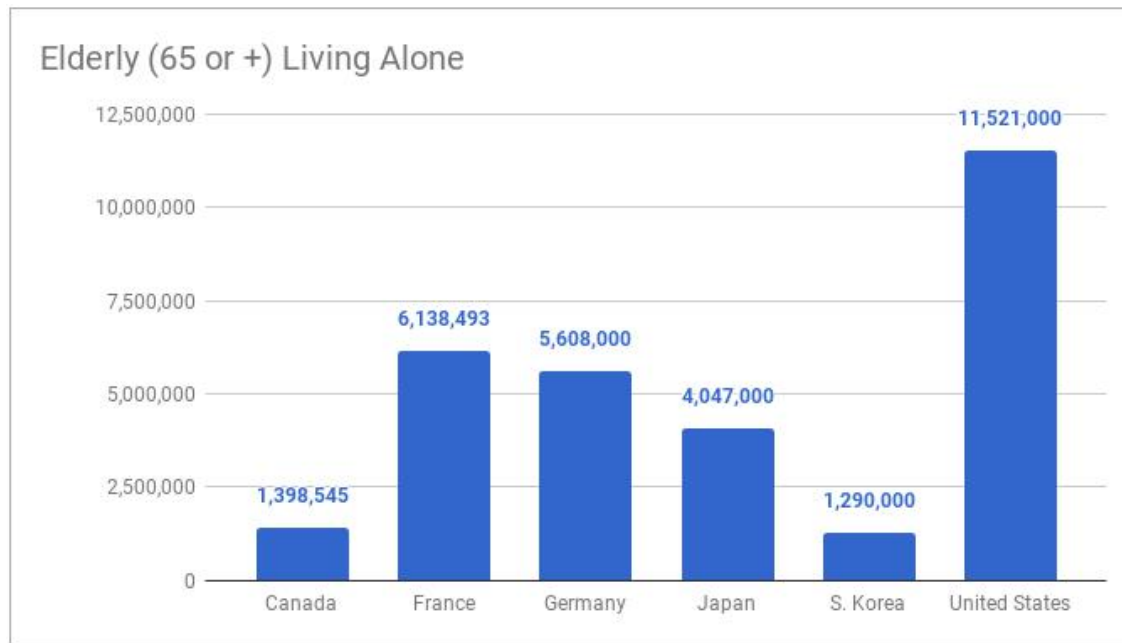


Data source: United Nations (2017). World Population Prospects: the 2017 Revision.

Number of Persons aged 60 years or over by development group



# Twards a world ageing alone



Sources: Statcan, Insee, Destatis, e-Stat Japan, Kostat, US Census Bureau (2016)

## More and more elderly live alone

Not only their number increase by the day, more and more elderly live also alone according to the UN. Why? Mainly because a majority of elderly people wish to live independently, in their own home, as long as possible. The traditional pattern in which three generations live under a same roof is gradually becoming a thing of the past.

# How Technology is beneficial to Senior care

Instead of having a displayed warning spot on TV, MaxiIoT has developed a range of smart sensors that are helping monitoring the status of the elderly , alerts and advice could be provided when needed and in real-time.



## Intelligent

Remote Technology Offers 24/7 Protection



## Standardization

Products based on international standard protocols, with multiple expansion options and low maintenance costs



## Suitable for elderly

Install and Play , easy to operate



# Solution

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LoRa-based Smart Community for Senior care

# LoRa-based Smart Senior Care Community

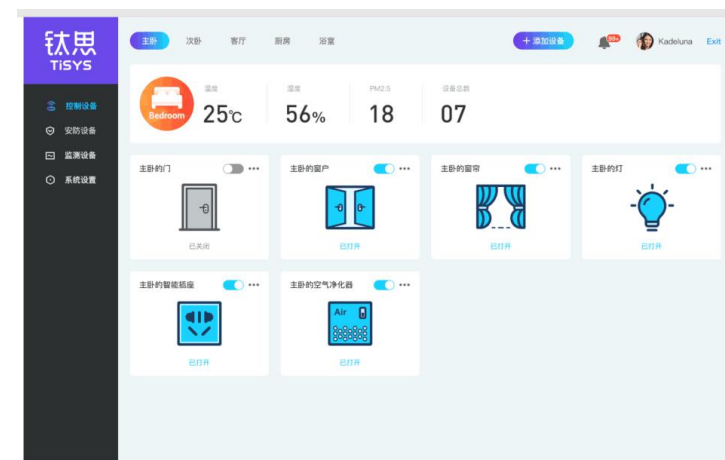
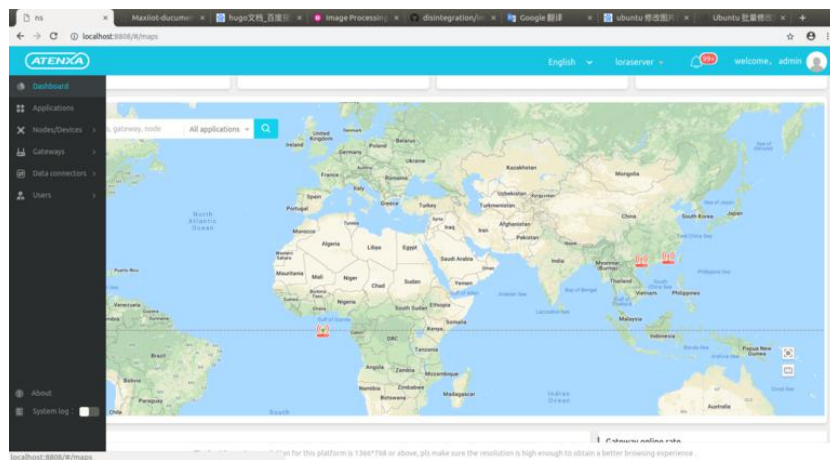


LoRa-based End Node

LoRaWAN Gateway

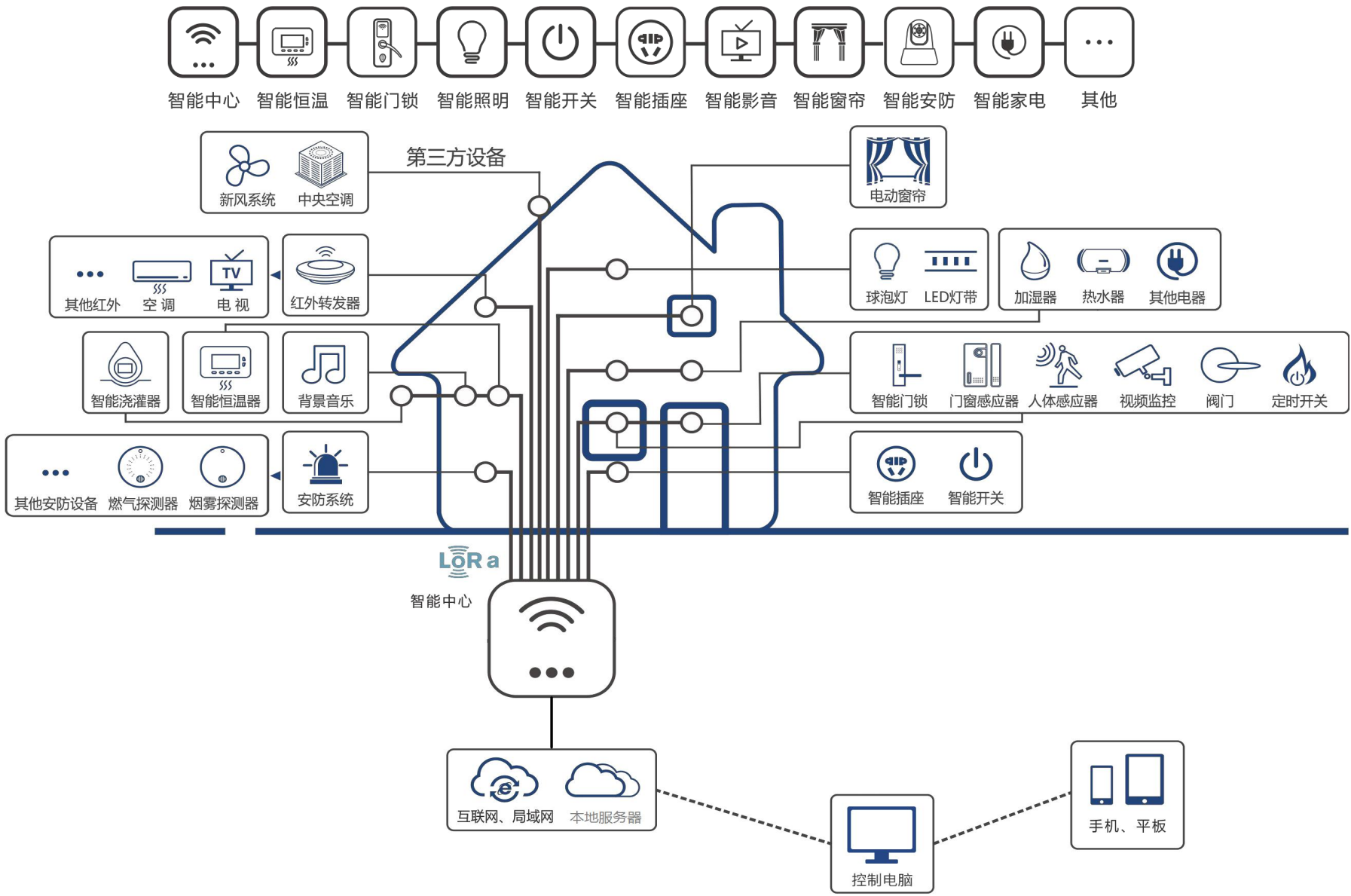
LoRa network Server

Smart senior care platform





# LoRa-based Smart Senior Care Community



## Smart senior care

Provide services such as physical condition monitoring, smart medication , anti-lost tracking , fall alarm , send SOS in emergency .

## Smart nursing

When the patient needs to turn over, the sensor can send a signal to help the patient in time , detecting the patient's heart pressure and other physical conditions

## Environment sensing

Provides 24-hour home environment monitoring through air quality detection equipment such as temperature, humidity, and carbon dioxide to adjust the overall environment and improve overall living quality.



# LoRa-based Smart Senior Care Community



## Security

Embedded with various security sensors such as gas detector , water-leak detector , smoke detector, CO detector , Motion sensor etc... keep people safe from disaster.

## Scenario control

Provide a variety of preset scene modes, flexible to customize the scenario mode to meet the needs of individuals

## Information service

Push community information at any time, such as community announcements, registered news notifications, It also provides a variety of convenient living information, such as weather news and more.





# Devices

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Smart senior care community devices based on LoRa



## Smoke Detector

- Powered by a replaceable battery
- Battery Life : 1 ~ 3 Years
- Low power alarm
- LoRaWAN Compliant
- Mount: Ceiling

### Application:

Home , Hotel , School, hospital, factory ,  
warehouse , garage etc...

## Gas Detector

- Leak detection of gas, natural gas, volatile gases, etc.
- Power supply: DC12V or AC220V
- LoRaWAN Compliant
- Mount: Ceiling, Wall mount

### Application:

kitchens or toilets with gas water heaters, etc.,  
which may cause gas leakage hazards ..





## Water Leak Detector

- Built-in 1-CR2 battery
- Low power alarm
- Battery life:1~3 years
- LoRaWAN Compliant
- Mount: Wall mount via 3M adhesive

### Application:

kitchens and bathrooms etc places , where water leakage may occur.

## Temperature&Humidity Sensor

- Powered by two raplaceable 2AA batery
- Battery life up to 1 year
- Low power alarm
- Communicate Via LoRa , real-time alarm
- Mount: Wall mount , stand with bracket

### Application:

home, offices, hotels, restaurants, schools , shopping malls, waiting rooms , hospitals, Cold-chain logistics, computer rooms, Workshops, laboratories and warehouses for the electronics, chemical and biomedical industries.





## PM2.5 Detector

- Real-time monitoring PM2.5
- Build in rechargeable Li-iron battery
- Low power alarm
- LoRaWAN compliant
- Long range communication

### Application:

Environmental monitoring of homes, production workshops, public places and other scenarios.

## Motion Sensor

- Infrared sense; accurate and sensitive
- Detection range : 110 ° ~ 120 °
- Build in battery , battery life more than 2 years
- LoRaWAN compliant
- Mount: Wall mount , Ceiling

### Application:

Installed on door or window; alarm when illegal broke in.





## Photo beam detector

- Detection Method: Simultaneous interruption of 2 infrared beams
- Alignment Angle: Horizontal  $180^{\circ}(\pm 90^{\circ})$ , Vertical  $20^{\circ}(\pm 10^{\circ})$
- Detection Range: Outdoor 60M , Indoor 180M
- LoRaWAN compliant

### Application:

Suitable for locations such as yard walls that require perimeter protection

## Mini Remote(For Curtain)

- Control the opening, closing and suspending of the **two sets of devices**.
- Build in DC3.7V Li-ion battery
- Batty life up to 1 Year
- LoRaWAN compliant

### Application:

Used for the motorized curtain and smart valve controller compatible with LoRaWAN protocol







## Curtain Controller

- Open or close a curtain through Mini Remote
- Three operations: open, close, pause.
- Power supply: DC24V
- LoRaWAN compliant

### Application:

suitable for scenes such as living room, bedroom, video room, etc., which require remote control, linkage control or timing control.

## Door Sensor

- Real-time monitoring and remote management
- Build in DC3.7V Li-ion battery
- Batty life up to 1 Year
- LoRaWAN compliant

### Application:

Widely used in doors and windows, drawers, file cabinets, safes etc...





## Three-position wall switch

- Control the opening and closing of the lighting device through instructions or a remote control
- LoRaWAN compliant
- Low power consumption and strong anti-interference ability

### **Application:**

Remote control of lighting devices

## SOS button

- Real-time reporting SOS alarm
- Build in a AAA battery
- Battery life up to 1 Year
- LoRaWAN compliant

### **Application:**

Hospital, nursing home, smart home.





## Smart Outlet Switch

- Button control or remote control.
- Plug and play.
- Turn on/off at a certain time.
- LoRaWAN compliant

### Application:

Suitable for all kinds of household appliance such as table lamps, humidifiers, water dispensers, etc.

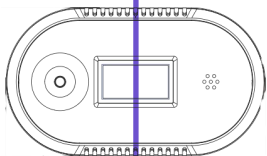
## IR Transceiver

- Easy install; supports a variety ways of installation.
- 360 degree emits infrared signals ;
- Automatically search and record electrical control codes.
- LoRaWAN compliant

### Application:

Widely used for family, office, hospital and hotel.





## CO Detector

- Leak detection of CO
- Real-time monitoring
- LoRaWAN compliant
- Low power consumption and strong anti-interference ability

### Application:

Smart home, Factory , warehouse etc...

## Mini Remote switch

- Three ON/OFF button and one ALL ON/ALL OFF button.
- Build in battery
- Batty life up to 1 Year
- LoRaWAN compliant

### Application:

Smart home , smart community ....





## Mini Remote(scene set)

- Support eight smart scene
- Build in battery
- Batty life up to 1 Year
- LoRaWAN compliant

### Application:

Smart home..

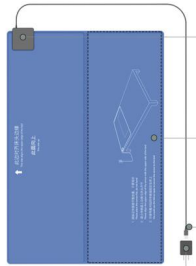
## Manipulator Controller

- Power supply : DC12V
- remote control the opening and closing of manipulator
- LoRaWAN compliant

### Application:

Widely used in gas and water manipulator.





## Vital Sign Monitoring Mat

- Monitor vital signs of human body with high precision under non-contact conditions, including heart rate, respiratory rate, body motion, and behavior of exiting the bed
- LoRaWAN compliant

### Application:

Smart home , nursing home , hospital etc...

## Care mattress

- Detect human behaviour on the bed, including lie down, lie on the left/right side, repeatedly turn over, sit on the bed, leave the bed etc..
- Leave alarm, long-term lying notice, turn over notice, etc.
- LoRaWAN compliant

### Application:

Smart home , nursing home , hospital etc...





## Adult Smart Diaper

- Instant notification when adult pees
- Aids in reducing diaper rash
- Easy to attach to adult's diaper , works for both genders.
- Batty capacity:210mAh
- Build in Bluetooth, Range: 40M

### Application:

Elderly , disabled people, Baby...

## Body temperature Monitor

- Monitor the temperature of forehead
- Auto-search the temperature of forehead in 2 seconds.
- LoRaWAN compliant
- Real-time monitoring

### Application:

Elderly , disabled people, Baby...





## Slippage detector

- Build in Thermopile to capture the body temperature
- Effective range: 3M
- LoRaWAN compliant

### **Application:**

Smart home, nursing , slippage detection is for bathroom , and kitchen , to detect the human body when it falls or slips down.

## Audible and visual alarm

- Power supply : AC220V
- remote control the opening and closing of manipulator
- 80-100dB alarm
- LoRaWAN compliant

### **Application:**

Widely used in home security , banks, hotels, factories, government agencies, shops, schools and other places.







## Air purification system

- Kill bacteria and the virus
- Remove odor , formaldehyde and VOCs
- LoRaWAN compliant

### Application:

Smart building. Hotel , hospital , .

## Medical examination

- Detect blood oxygen + blood pressure + body temperature + blood sugar + ECG
- Test data is automatically summarized by the network to the platformPower
- LoRaWAN compliant

### Application:

Smart Senior care , Nursing , hospital





# About LoRa

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Long Range Low Power network

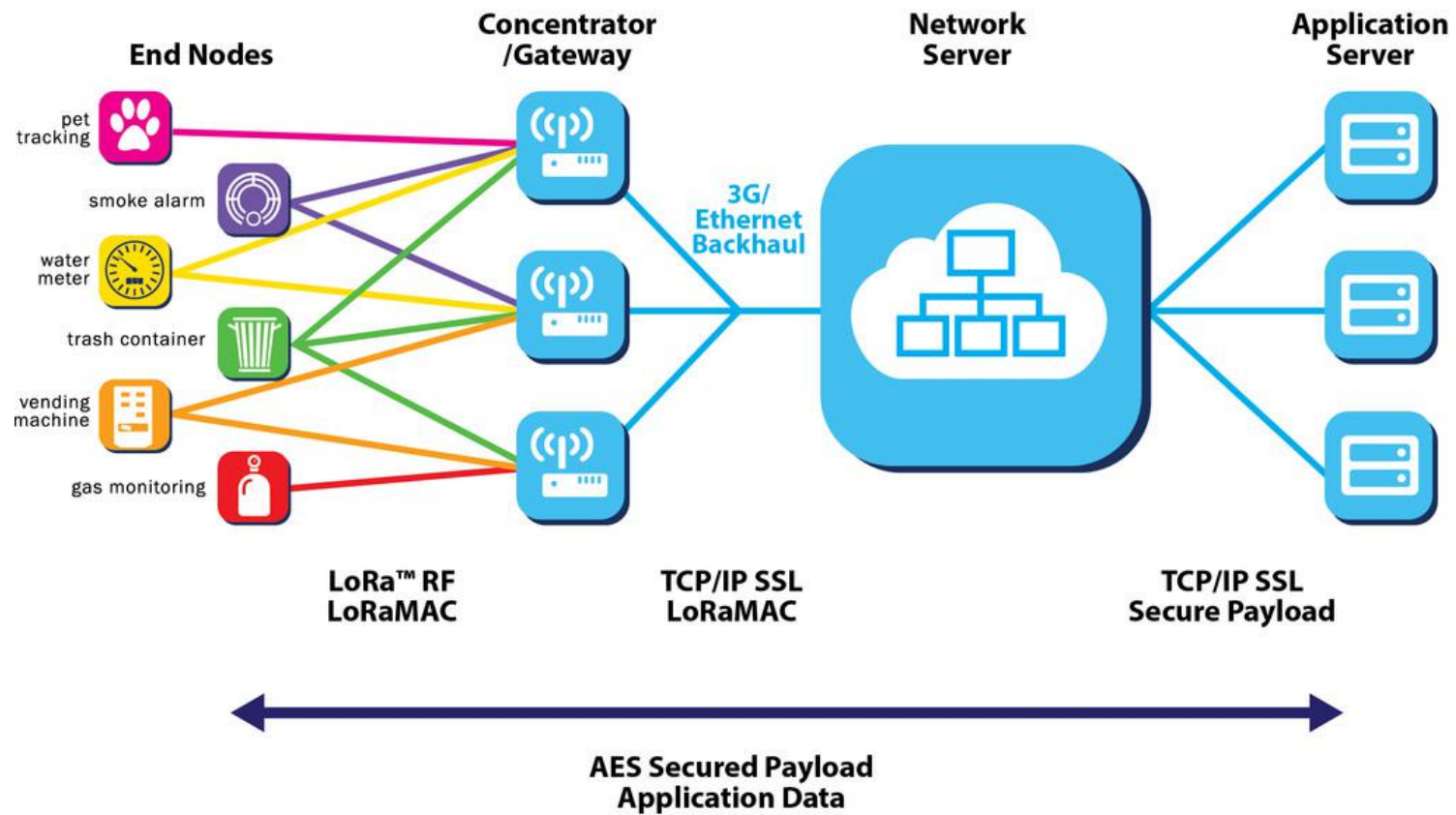


## What is LoRa

LoRa (short for long range) is a spread spectrum modulation technique derived from chirp spread spectrum (CSS) technology.

Commercaïl used in 2013 , Semtech's LoRa Technology has amassed over 600 known uses cases for smart cities, smart homes and buildings, smart agriculture, smart metering, smart supply chain and logistics, and more. With 87 million devices connected to networks in more than 100 countries and growing, LoRa Technology is the DNA of IoT, creating a Smarter Planet.

# LoRaWAN Network



# Existing Technology Comparison

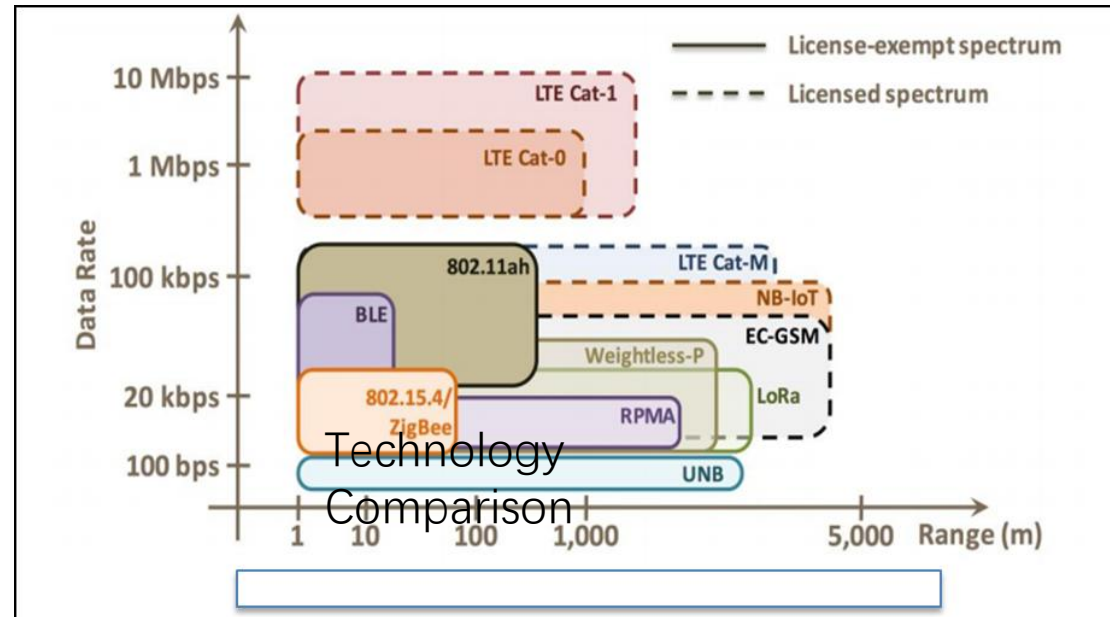
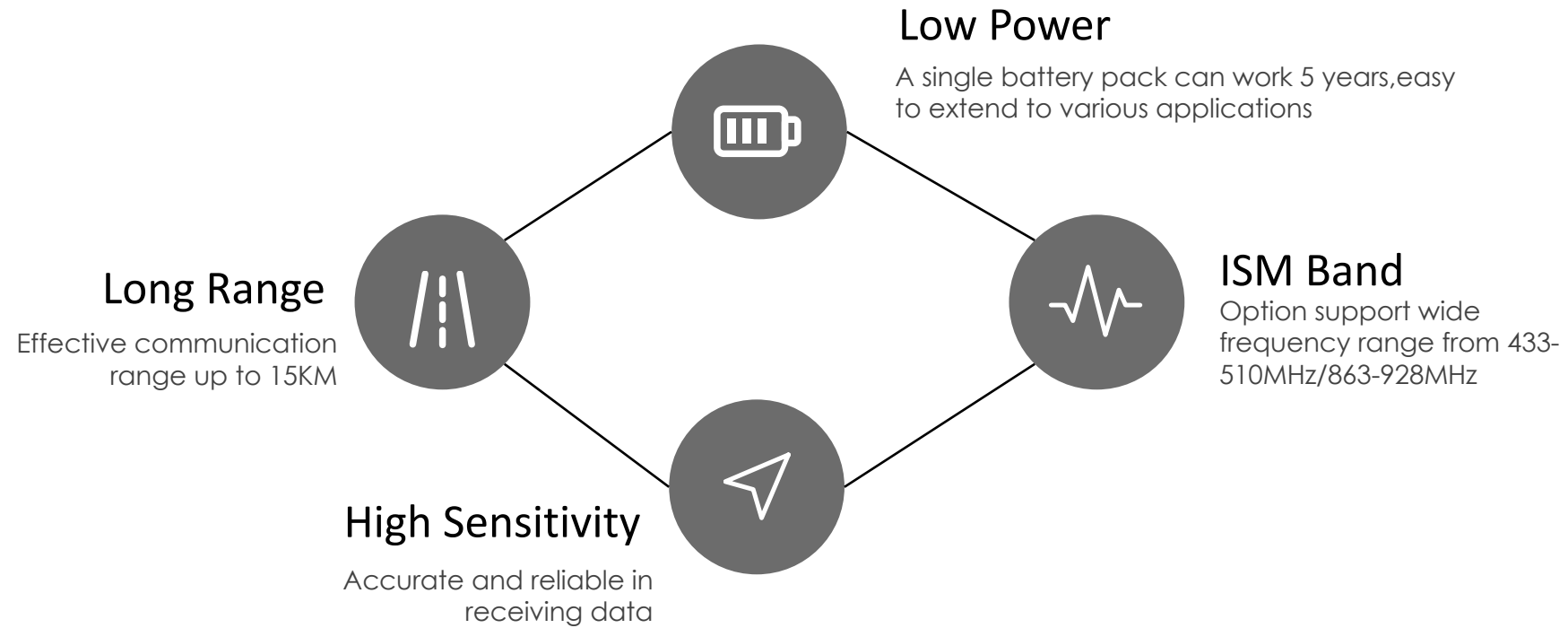
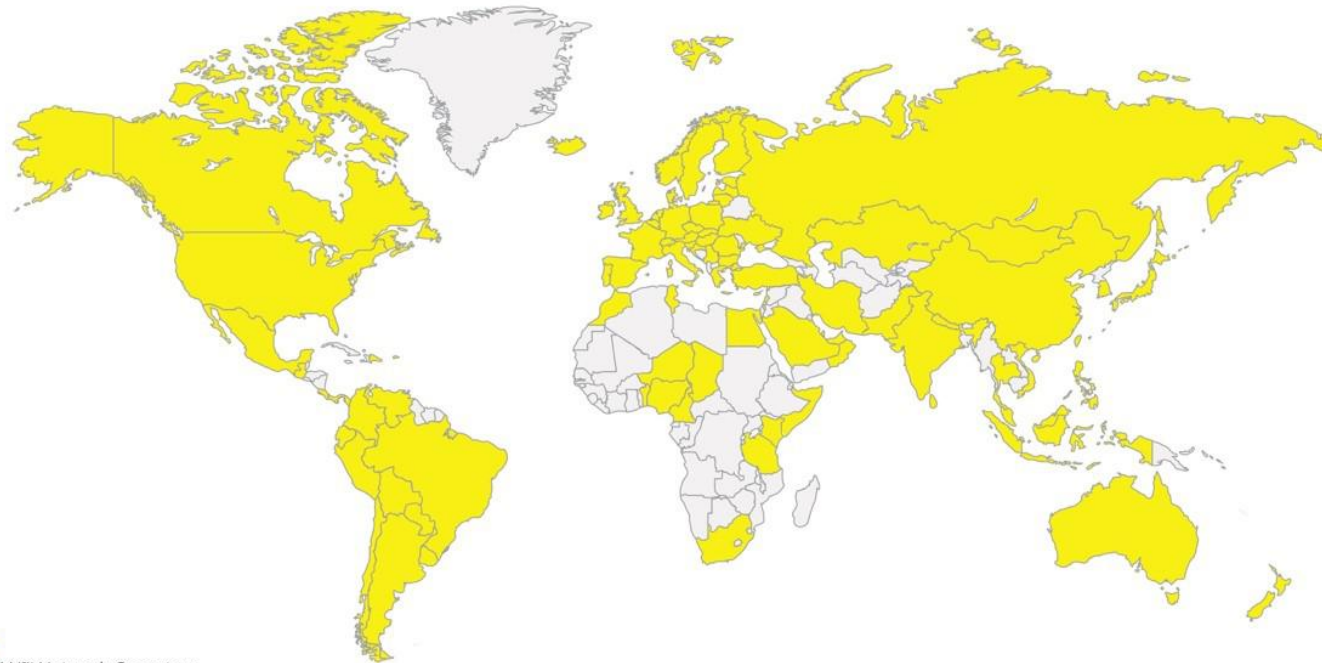


Table 1 Relative ranking of LPWA technologies.

Rank	Indoor Cell Range Performance		Capacity
	US	Europe	
1	LoRa	LoRa	RPMA
2	SigFox	Weightless-P	SigFox
3	Weightless-P	SigFox	LoRa
4	RPMA	RPMA	



## LoRaWAN™ NETWORK COVERAGE



**100+**  
LoRaWAN™ Network Operators

**100+** Countries With LoRaWAN Deployments

**December 2018**

All information contained herein is current at time of publishing - LoRa Alliance is not responsible for the accuracy of information presented

The image features a white background with several decorative elements. At the top left is a large circle with a blue-to-purple gradient. To its right is a smaller solid purple circle. Below the top-left circle is another smaller solid purple circle. At the bottom of the image is a large, semi-circular arc with a blue-to-purple gradient. To the right of this arc is a small solid purple circle. At the bottom right is a large circle with a blue-to-purple gradient, similar to the one in the top left. The text "THANK YOU" is centered in a bold, black, sans-serif font.

**THANK YOU**