

Inpro
ENGINEERING

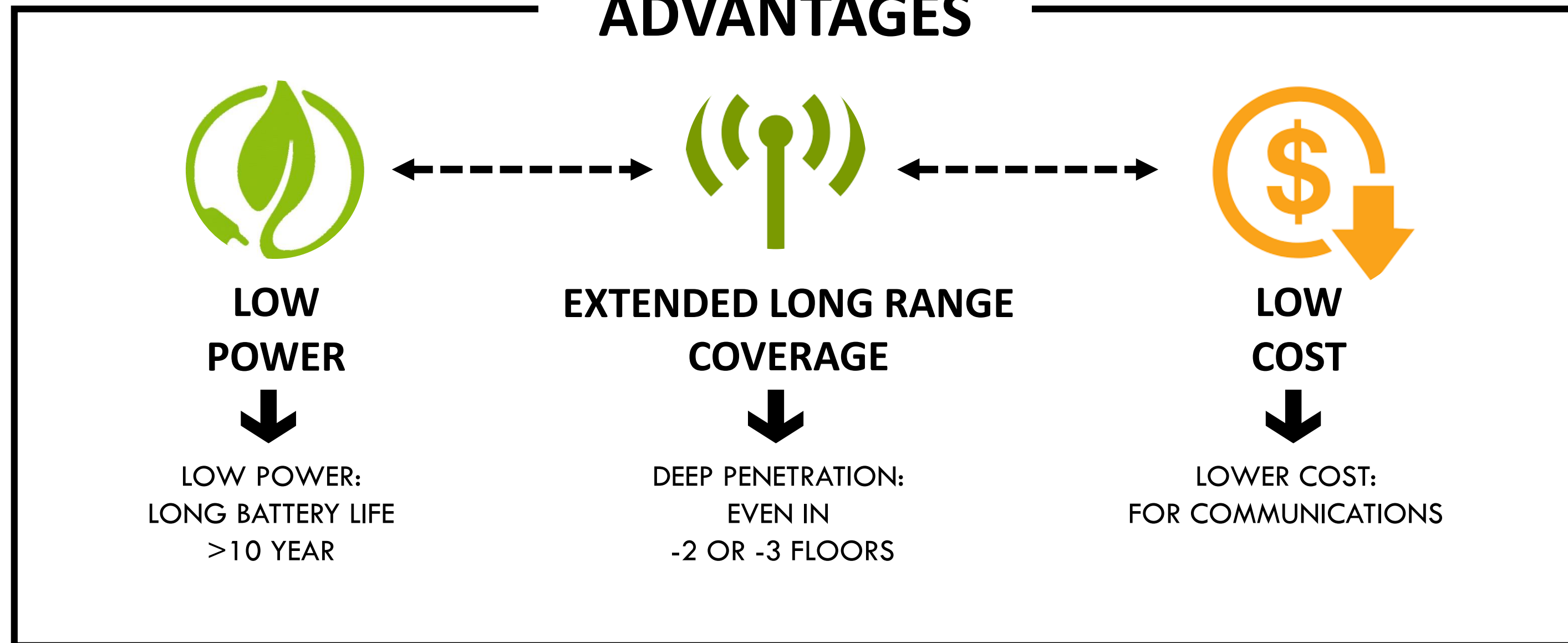
INPRO  **NB-IoT™**



INPRO NB-IoT™

□ **Nb-IoT** will be mainstream technology for M2M communication

ADVANTAGES



INPRO Nb-IoT . Features & benefits



INPRO Nb-IoT , is the latest solution of the internet of the things, which lets the management and monitoring about the state of sensors in unattended or remote locations. Avoiding the physical presence of professionals on site, for their management.

It has been designed in an open architecture model , to let the integration of mostly sensors available in the market.

Due its modular design, optimizes the cost and the times of installation and deployment of systems, thanks to **the possibility of wireless connection among the sensors and the gateway**, which will load the data to the **inpro cloud** for its assessment and quick response.

This wireless network is based on nb (narrow band) communications, enabling the:

- ➔ **Wireless connection of a large quantity of sensors to the gateway in the same location.**
- ➔ **Configuration of each device, both in remote or locally by using BLE com.**

For its technical features INPRO Nb-IoT assures:

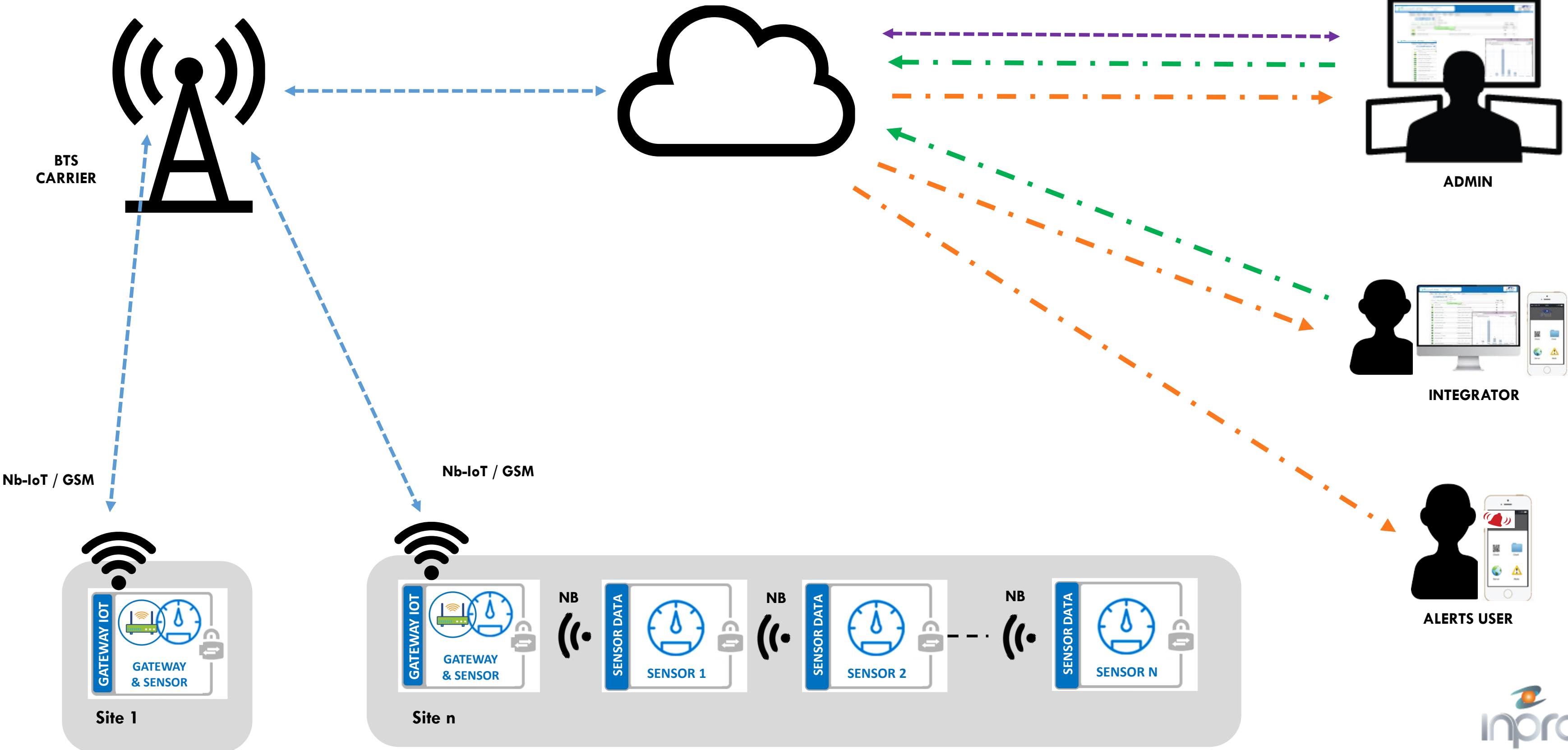
Availability of communications, not matter where the sensors are located. They work under worst conditions: large distances among sensors and gateway, inner locations and installation below basements

There is not interference among networks case to exist several networks in closed locations .

Safe in communications cost, to use only one SIM card per Gateway (site), not matter the number of sensors are connected.

Very low power consumption for the Nb-IoT technology itself.

INPRO Nb-IoT. Topology



→ SMART METERING

- Monitoring and remote Reading of fluid meters (water, Oil, etc.)
- Environment.
- Fluids spill and leaking detection.
- Monitoring and management of water supply
- Intelligent Monitoring and metering of general events

→ ENERGY EFFICIENCY

- Monitoring of fuel consumption.
- Monitoring of fuel consumption of Transport fleet.
- Intelligent metering
- Fuel quality Monitoring and filtering .

→ AGRICULTURE

- Monitoring and Management of water tanks and supply.
- Monitoring and Sensoring of water groups and pumps
- Monitoring and Sensoring of oil transfer groups and tanks.
- Fuel quality Monitoring and filtering
- Anti-Rodent Monitoring System.
- Monitoring and control of environmental conditions in green houses.
- Automatic Level control and Monitoring of Feeders and waterer
- GPS Tracking of livestock

→ SECURITY

- Access and Intrusion Detection.
- Doors Monitoring and Control.
- Perimeter Sensoring.
- Assets Monitoring
- Fuel Theft Detection
- Cold Room / Storage intruder detection
- Monitoring and Sensoring of Equipments

→ HVAC SECTOR

- Smart Metering.
- Level Monitoring.
- Spill and Leakage Detection in Fluids Tanks.
- Fuel Theft Detection
- Monitoring of Interstitial Walls on Tanks
- Monitoring of heat / Cold production and oil transfer.
- Temperature Monitoring.
- Monitoring of Gas Alarms in classified zones.

→ HOTEL, RESTAURANT AND CATERING SECTOR (HORECA)

- Anti Rodent Monitoring System.
- Temperature Sensoring and Monitoring of Cold Rooms (Storage)
- Sensoring and Monitoring of Back – up Energy.
- Doors Monitoring and Control.

→ SMART CITY

- Anti Rodent Monitoring System.
- Fluid Spill and leakage Detection Systems.

→ ENVIRONMENT

- Monitoring of environment Sensors.
- Flood Prevention and Control.
- Tides Monitoring.

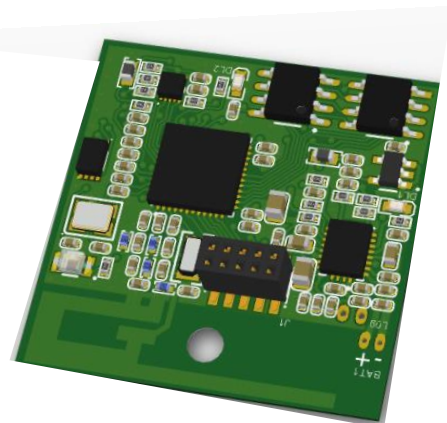
→ CUSTOMIZATION

- Monitoring, Sensoring and Control of Un attended Equipment and devices.

INPRO Nb-IoT. Features



MULTICOM GATEWAY
(MASTER)



SATELLITE
MULTISENSOR
(Slave)

- **INPRO-nbIoT** is the latest Wireless solution for the Internet of the Things, which allows the monitoring, remote management and data capturing from a sensor or sensor network strategically installed. Both in local or in remote / unattended locations.
- Unlike other solutions, **INPRO-nbIoT** can integrate the sensors inside the equipment to be monitored, providing both, discretion and safety to the host equipment.
- The network topology of **INPRO-nbIoT** solution, is based in a Master / Slave topology. The master or Gateway receives the signals, via communication nb (narrow band), from the satellites (sensors slaves) which are connected to the “thing” to monitor, then data are sent to the cloud via NBIOT /GSM transmission.
- There is not limit in the slave satellites sensors to connect to one Gateway or Master.
- In addition , the gateway or Master can be also work as slave, capturing the data from sensors connected to it.
- All devices can be configured both: remotely or locally by BLE connection.
- Data are monitoring via web server or in Smartphone applications, to be perfectly identified for its ID number, position in a map or geo positioning.

INPRO Nb-IoT. Technical specifications

Base & Gateway	Com. Netw: ¹	<ul style="list-style-type: none"> ▪ NB IoT Narrow band. B-20. Other bands, please consult. ▪ BLE device setting
	Inputs:	<ul style="list-style-type: none"> ▪ 2x digital opto-isolated ▪ 1 Analogue (4 / 20 mA)
	Output:	<ul style="list-style-type: none"> ▪ 1 Voltage free relay output
	Power:	<ul style="list-style-type: none"> ▪ Micro USB DC power input connection. ▪ Back up internal battery (option)
	Enclosure:	<ul style="list-style-type: none"> ▪ Optional
	SIM Card	<ul style="list-style-type: none"> ▪ Nano SIM - Not included
Enhanced Satellite	Com. Net	<ul style="list-style-type: none"> ▪ NB (Narrow band) with Gateway. 868 Mhz. ▪ <i>BLE Configuration</i>
	Inputs:	<ul style="list-style-type: none"> ▪ 2x Digital Opto isolated ▪ 1x Analogue (4/20 mA)
	Outputs:	<ul style="list-style-type: none"> ▪ 1 free relay output
	Enclosure:	<ul style="list-style-type: none"> ▪ Optional
	Power:	<ul style="list-style-type: none"> ▪ Micro USB DC power input connection. ▪ Back up internal battery (option)
Multisensor Mini Satellite	Inputs/Outputs:	4 x IO digital
	Sensors:	<ul style="list-style-type: none"> – Light sensor – Temperature Sensor – Accelometer – Magnetic sensor
	GPS:	Optional
	Enclosure:	Optional
	Power:	3,5 Vdc Battery
	Com. Net:	NB (Narrow band) with Gateway. 868 Mhz. <i>BLE configuration</i>
	Inpro Cloud Access	<ul style="list-style-type: none"> ▪ Web access (Visualize or Settings) ▪ App for IOS & Android (Visualize or Settings)



- *Comunications CAT M1, NB-IoT, GPRS*
- *SMS*
- *Cells positioning for GSM*
- *Bands LTE: B1/ B2/ B3/ B4/ B5/ B8/ B12/ B13/ B18/ B19/ B20/ B26/ B28 (global)*
- *Bands CAT-M1: B39*
- *Bands GPRS: 850/900/1800/1900Mhz*
- *External Antennas for NBIOT, CAT-M1, GPRS, and for NB*
- *Certifications: CE/GCF/FCC/PTCRB/Verizon/AT&T/T-Mobile*/RCM/Telstra/IFETEL/IC/BELL*/Telus/JATE/TELEC/KDDI/KC/SKT*/CCC/Vodafone/IMDA/Deutsche Telekom/Telefonica/SoftBank*



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