Inpro IoT
Internet of Things

Inpro®
research & development

Smart Industry Solutions

⌐ Going straight forward towards the Industry 4.0 ¬

www.inprogroup.net

Inpro Multicom: Highlighted features

- **Availability of communications**, no matter where the sensors are located. They communicate under tough conditions: large distances among sensors and gateway, indoor and underground locations.

- There is no interference between networks to allow several networks to exist several networks in closed locations.

- Safe and effective **communications cost management**, to use only one SIM card per Gateway (site), no matter the number of sensors are connected.

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

- The **efficient network topology** of INPRO-nbIoT solution, is based in a Master / Slave topology. The master or Gateway receives the signals, via NB communication (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.

- **Practically limitless growth potential** as the slave satellite sensors to connect to one Gateway or Master.

- In addition, the **Multicom Gateway or Master can operate also as slave**, directly capturing the data from sensors connected to it.

- All devices can be configured locally by BLE connection.

- Data monitoring via
  - Web server or
  - IOS & Android Smartphone applications, to be perfectly identified for its ID number, position in a map or geo positioning.
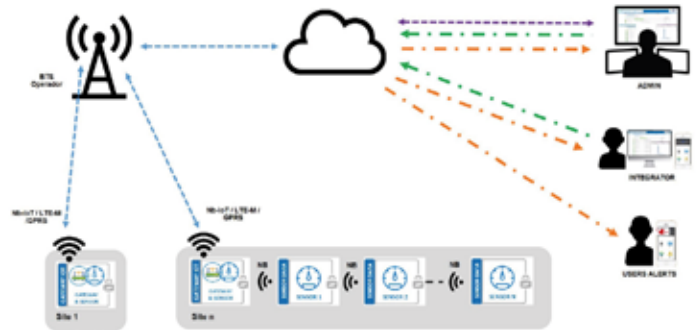
Your advantages:

Operating costs reduction and service quality monitoring.

| Automated data collector | Monitoring and alarms Management | Multi-Device monitoring | BI, Data Analytics, Reporting |

Customer relationship management.

| Added value for Public Tenders | 24,7 | SLA Objective measurement | On-line availability |

Inpro Multicom: Technical characteristics

**MULTICOM
GPRS/NB/LTE
base and gateway**

Code: 06110000200000
Com. NB-IOT / LTE / CAT-M1 & GPRS.
Netw[1].: For other band, please consult.
BLE device setting
NB to satellites
Input: 2 Digital Opto – isolated
1 Analog (4 / 20 mA)
Output: 1 free voltage relay output
Power: Micro USB connector to external power source.
Enclosure: Optional
Back up battery: included
**SIM:** Nano SIM - not included

**NSTE:
NB Enhanced
Satellite**

Code: 06110000200003
Communication: NB (Narrow band) to Gateway.
868Mhz. BLE device setting
Input: 2x Digital Optoisolated
1 Analog (4 / 20 mA)
Output: 1x free voltage relay output
Power: Internal battery
Enclosure: Optional"

**NST:
NB Multisensor
Mini Satellite**

Code: 06110000200002
Communication: NB (Narrow band) to Gateway.
868 Mhz. BLE device setting
Input: up to 4x Digital Optoisolated
Sensors: – Accelerometer – Magnetic sensor
– Light sensor – Temperature
Optional GPS
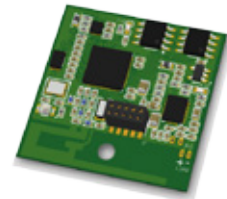
[1]: • SMS
• Cells positioning for GSM
• Bands LTE: B1/ B2/ B3/ B4/ B5/ B8/ B12/ B13/ B18/ B19/ B20/ B26/ B28 (global)
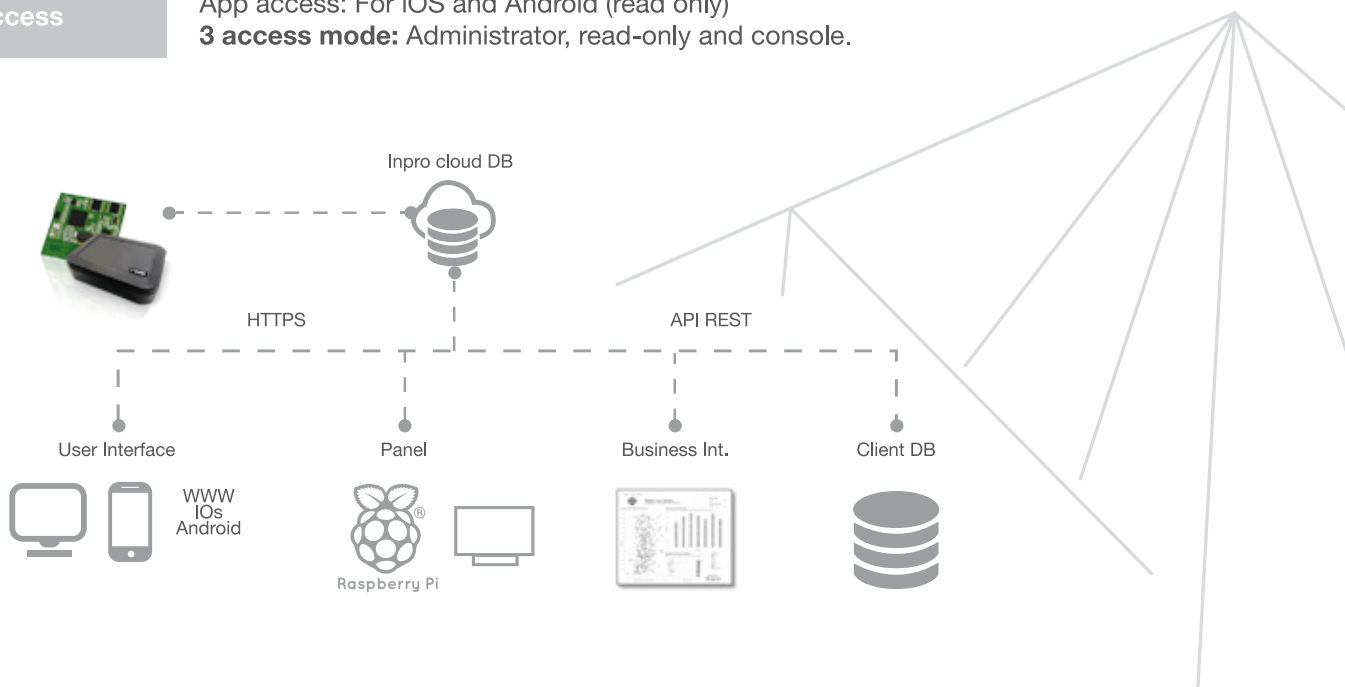Bands CAT-M1: B39
Bands GPRS: 850/900/1800/1900Mhz
• External Antennas for NBIOT, CAT-M1, GPRS, and for NB
• Certifications: CE/GCF/FCC/PTCRB/Verizon/AT&T/T-Mobile*/RCM/Telstra/IFETEL/IC/BELL*/Telus/JATE/TELEC/KDDI/KC/SKT*/CCC/Vodafone/IMDA/Deutsche Telekom/Telefonica/SoftBank
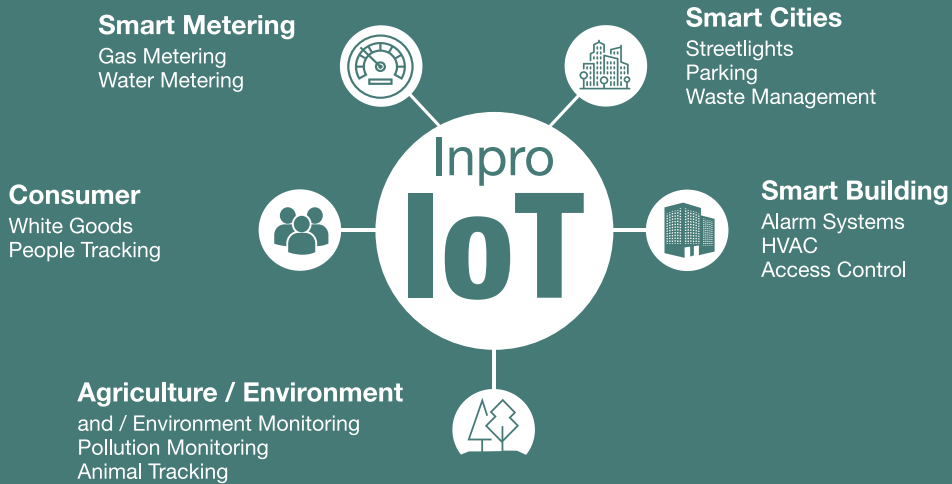
**AIC:
Inpro Cloud Server
Access**

Code: 06110000200004
Web access: For device monitoring and setting
App access: For iOS and Android (read only)
3 access mode: Administrator, read-only and console.

Inpro cloud DB

HTTPS   API REST

User Interface   Panel   Business Int.   Client DB

WWW
IOs
Android

Raspberry Pi

IoT Multicom: one gateway for any sensor, any network

INPRO-IoT is a wireless system based on the "Internet of things", for remote sensors monitoring. Itcaptures the signals produced by a net of sensors and devices strategically placed and loads data to cloud.
It has been designed in an open architecture model to let the integration of most of the sensors available on the market.

Smart Metering
Gas Metering
Water Metering

Smart Cities
Streetlights
Parking
Waste Management

Consumer
White Goods
People Tracking

Inpro **IoT**

Smart Building
Alarm Systems
HVAC
Access Control

Agriculture / Environment
and / Environment Monitoring
Pollution Monitoring
Animal Tracking

Why Inpro IoT?

Due its modular design, optimizes cost and time during deployment of systems, thanks to the possibility of wireless connection 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 is carried on locally by using BLE communications.

Lowest power consumption

Up to 10 years battery life

Low data rates

A few 100bit/s up to 250kbit/s

Low cost

€

Simple modules with easy wireless retrofit

High propagation: better coverage

WIFI
BLUETOOTH
GPS
2G
3G
4G
LTE
NB
5G

+20dB link budget (vs GSM)

High end-point density

>100,000 connections per cell

LTE level security

Encryption, SIM based authentication