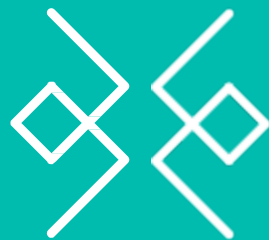


# Company profile - 2017



BLUEPYC

Unconventional.  
Smart. Wireless.

# BLUEPYC, at a glance

BluEpyc is the Business Unit of SOFTWORK Group, focused on wireless technologies, above all **Bluetooth Low Energy (BLE)**, a wireless technology based on a standard and developed to fulfill the **IoT interoperability**.

The Bluetooth Low Energy architectures projected and produced by BluEpyc

- ❖ Beacon,
- ❖ Gateway,
- ❖ EchoBeacon

are then implemented with an *unconventional* approach to this technology.

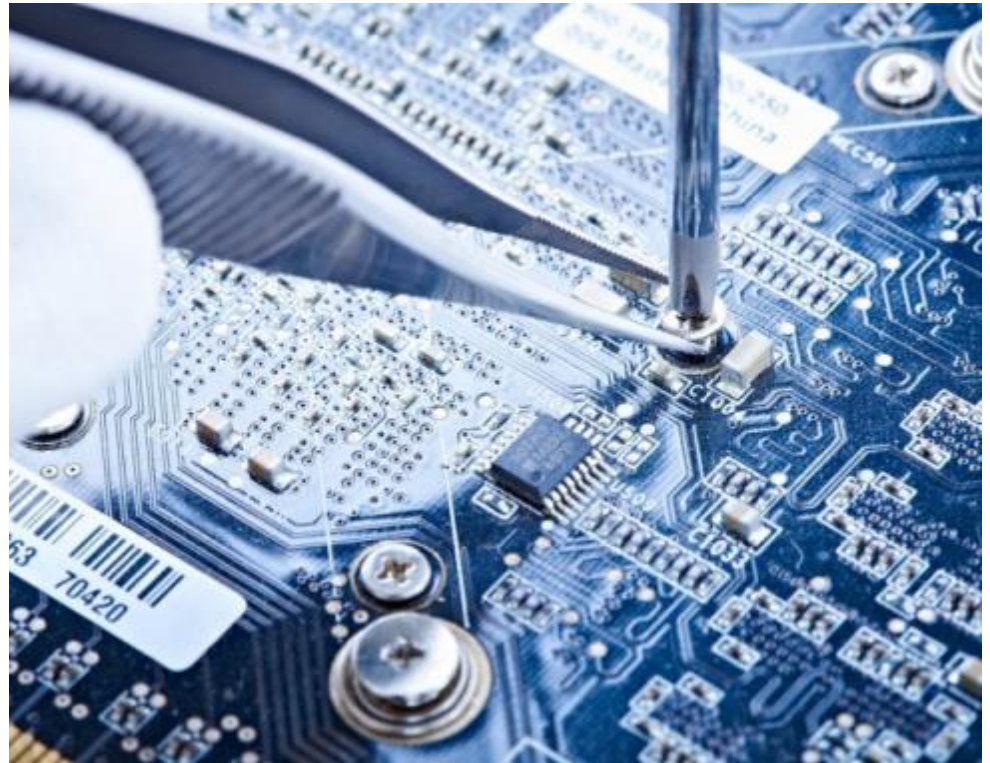
SOFTWORK Group

# Bluetooth technology

«As a trusted standard for wireless connectivity, Bluetooth® is integrated into more than **8.2 billion products**, [...] helping to transform the way people and devices connect across a variety of markets:

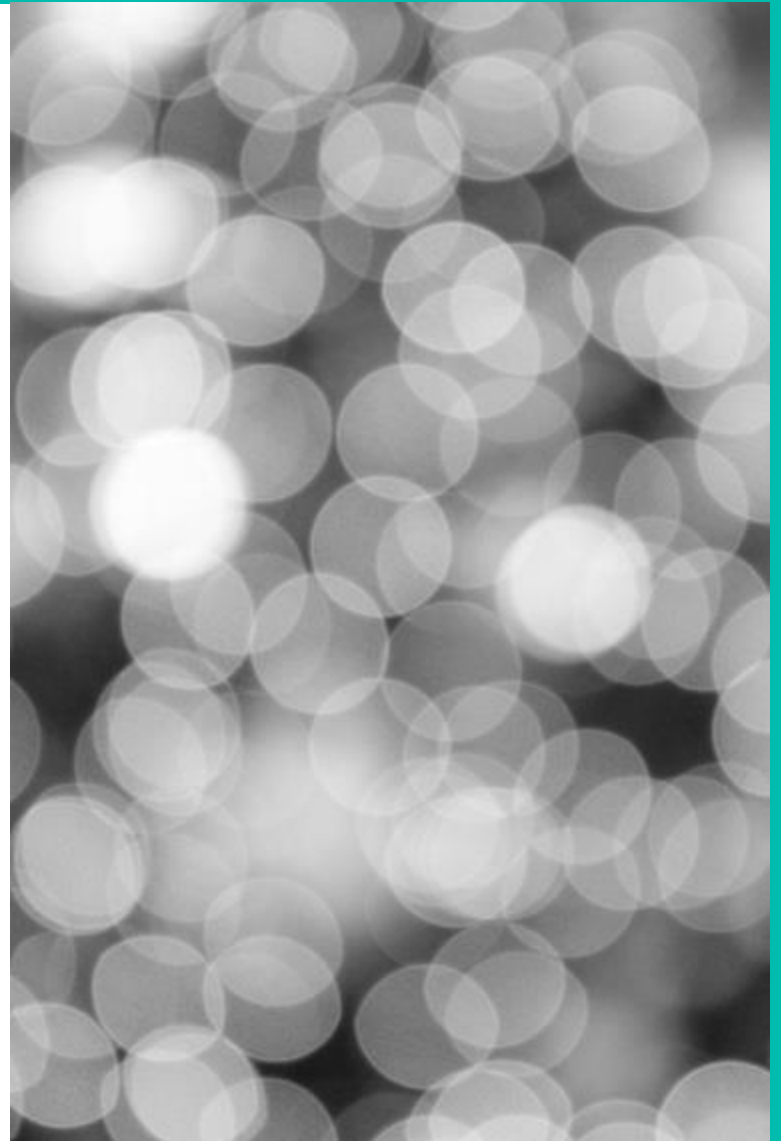
*automotive,  
consumer electronics,  
home automation, medical & health,  
mobile & smart phones, wearables,  
sports & fitness,  
location-based services\*»*

\*Source: Bluetooth SIG website, [www.bluetooth.com](http://www.bluetooth.com)



# Bluetooth Low Energy

- ❖ BLE (acronym of Bluetooth Low Energy) is referred to Bluetooth releases from 4.0 on.
- ❖ Wireless communications up to 100 meters, **low-power consumption** between devices thanks to **small amount of data** to send in short period of time, are just some of the main features of BLE among others.
- ❖ The **biggest advantage** of BLE is the ability for smartphone and tablet (Apple, Android, Windows) to receive information, data and notification in automatic way (without any voluntary action from user) coming from sensor and other BLE Devices spread in the near environment (Wireless Sensor Network).
- ❖ In addition to consumer sector, BLE is spreading out also in the **industrial environment** handling datalogger, sensors and other typical tools very common in the IoT world.



# Bluetooth 5 is ready!

Increased range à 300 meters

Doubles speed

Increased Data broadcasting capacity by 800% and up to 2 Mbps,

Interference reduction with other wireless technologies (es. WiFi), to better coexist in always more connected and «crowded» environment;

Same low-power consumptions



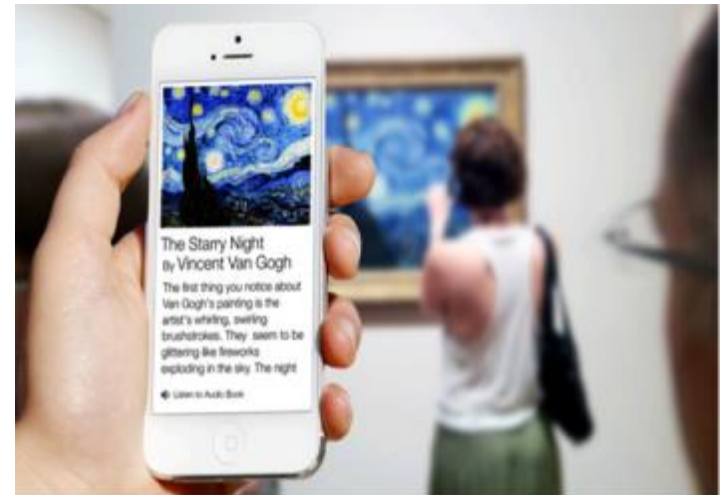
*«It meets the needs of the industry as the global wireless standard for IoT connectivity.»*  
Bluetooth SIG, Dec. 2016

## Bluetooth Low Energy from traditional point of view

A standard BLE system is normally composed by BLE Beacon installed in fixed position (attached on the wall, on the ceiling or hidden in objects) and from mobile devices (i.e. smart phone), which receive data from Beacon and forward it to the server via 3G/4G or Wi-Fi connection (when available).

A common application for BLE used in a **traditional way** is the **proximity marketing** as in retail/store/museum/exhibits/tourist services/stadium and concerts: in these scenarios consumer receives messages and information related to the surrounding environment in which he/she is.

In all these kind of background there is the most common and conventional use of BLE technology.



# Bluetooth Low Energy from our point of view

We believe innovation creates value not only thanks to a smart technology, but also using an **original way of thinking**: *unconventional* means not accept the first solution, avoid shortcuts and be brave in looking always for new paths.

How is our “unconventional way of thinking” related to BLE technology?

The standard BLE architecture is typically composed by fixed Beacons and mobile devices (e.g. smart phone), which receive data from Beacons and managed by an App.

Our unconventional vision is based on a reverse concept approach, in order to **create in an easy and competitive way an active RFID system suitable for automatic identification and localization of persons and objects**.

In comparison to the traditional concept, our **unconventional BLE architecture works in an opposite logic**, where **moving person or object are equipped with tag/Beacon** and the **fixed readers/Gateways are installed in the monitoring area**, detecting data from different tags.

Education, continuous training and research complete the basis of BluEpyc growth model.

# BLUEPYC, our technologies



The BluEpyc BLE device family is composed by

- ❖ Gateways,
- ❖ EchoBeacons,
- ❖ Beacons

available in different housing.

Each device has specific technical features and ideal performances for different scenarios.



# BLUEPYC BLE technology: focus on Gateway

- ❖ CPU, I/O, RTC,  $\mu$ SD
- ❖ Web server on board
- ❖ Customizable firmware
- ❖ Wake-up on trigger (digital input)
- ❖ Connection to **Host or IoT/Cloud** (TCP/IP notification or MQTT)
- ❖ **Interfaces:** Ethernet or Wi-Fi or GPRS

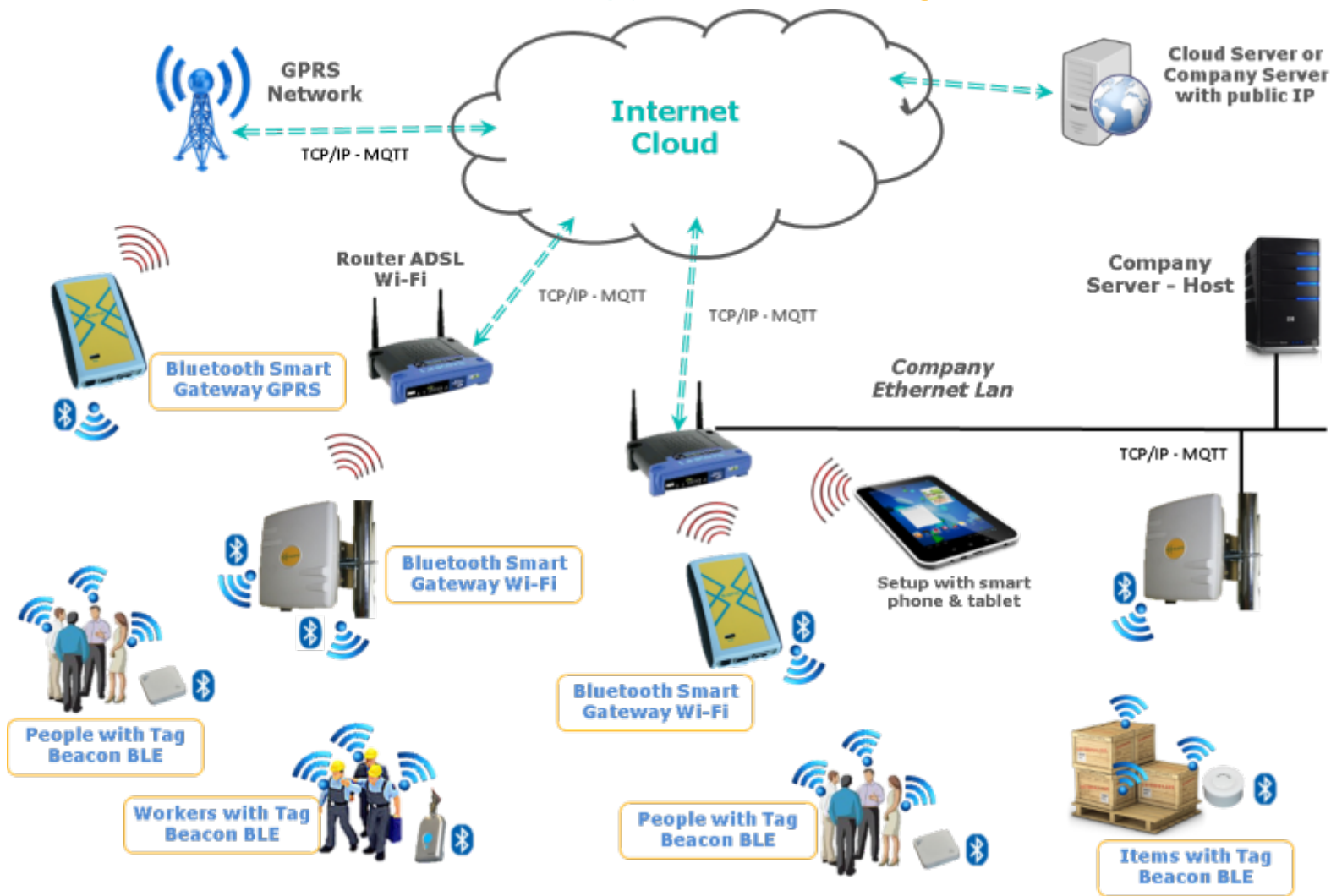


## BLUEPYC BLE technology: focus on Gateway

- ❖ Pole, Wall & Ceiling-mount
- ❖ Outdoor (IP 67)
- ❖ CPU, I/O, RTC,  $\mu$ SD
- ❖ Web server on board
- ❖ Customizable firmware
- ❖ Wake-up on trigger (digital input)
- ❖ Output relè
- ❖ Connection to Host or IoT/Cloud  
(TCP/IP notification or MQTT)
- ❖ Interfaces: Ethernet or Wi-Fi or GPRS



# BLUEPYC BLE technology: Gateway/Reader low



# BLUEPYC BLE technology: focus on EchoBeacon

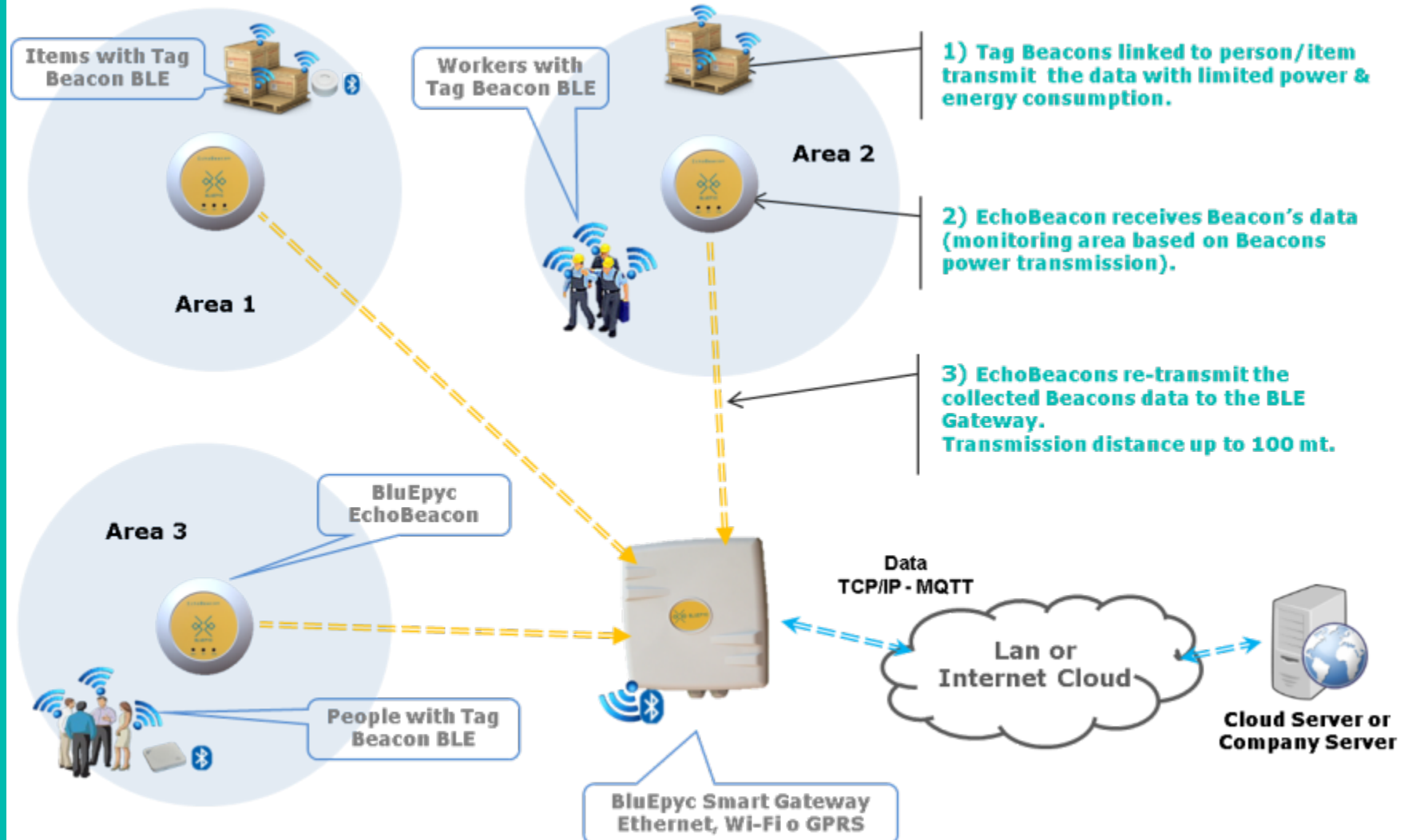
EchoBeacon is a BLE signal repeater, ideal for **micro-localization projects**, allowing to build BLE systems for **wide indoor area**, where **detailed data capture, easy installation and low cost** are required.

EchoBeacon receives Beacon's data and forward them to the BLE Gateway within a distance up to 100 mt.

**Responsive** to specific application needs: **customizable firmware**, memory for associated beacons, adjustable parameters.



# BLUEPYC BLE technology: How EchoBeacon works



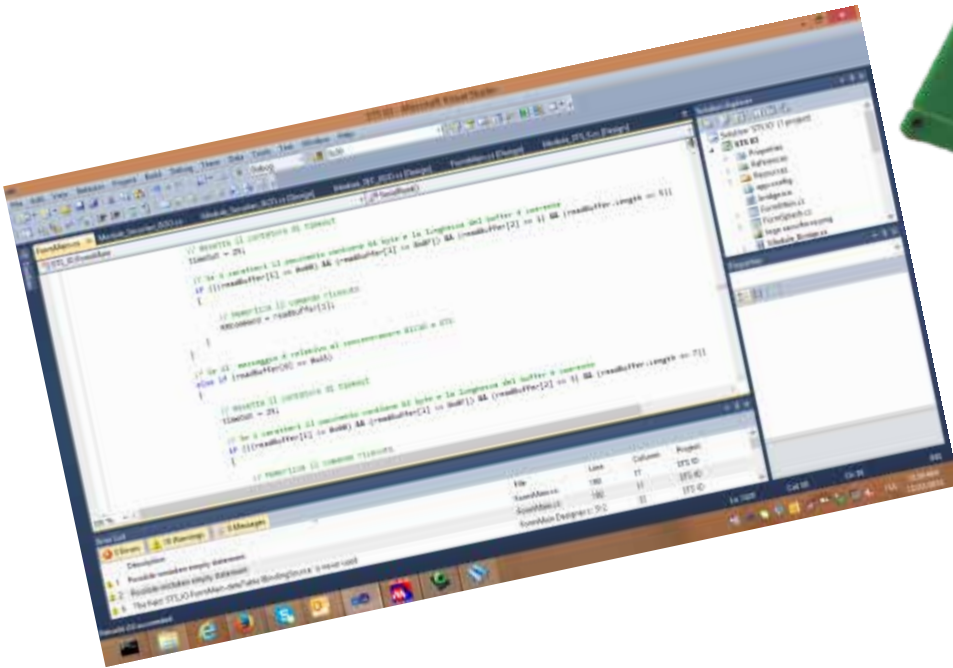
## BLUEPYC BLE technology: EchoBeacon's Features

- ❖ Indoor Case **Wall & Ceiling Mount**.
- ❖ ABS (UL 94 HB). Protection class IP 40.
- ❖ Dimensions (HxWxD): 110x110x56 mm.
- ❖ Weight: About 200 g. Colour: White
- ❖ **Input: 3 x Digital Input.**
- ❖ **Output: 2 x output relè, 3 x Leds.**
- ❖ Internal **UART** interface
- ❖ Power Supply 12-24 Volt DC (not included).



# BLUEPYC BLE devices: customization

Hardware & Firmware designed around **your needs**



# BLUEPYC, colored application scenarios



BLE, implemented with such unconventional vision, lives in several environment,  
identifying and localizing both people and objects!



# Testimonial of BLUEPYC unconventional BLE



Market sector: **manufacturing** (trains)

Application sector: **maintenance**

Purpose: to **trace and localize assets** and their relevant maintenance status,

to monitor in real-time **availability of facilities** (inventory and statistic)

# Testimonial of BLUEPYC unconventional BLE

Market sector: **Building Automation**

Application sector: **location-based services**

Purpose: to **identify each person**, automatically  
providing his/her **preferred services**,  
depending on the **position**

# Testimonial of BLUEPYC unconventional BLE

Market sector: **Nautical tourism**

Application sector: **Traceability**

Purpose: **Automatic identification  
& localization of boats**



# Our physical touch-points - > exhibitions

Unconventional. Smart.



Our original concept of interconnection & IoT is based on the state of the art of...



Interconnection is the key to a smart home. It's about making all devices work together to create a smart home.



ftwork Group

Unconventional. Smart. Wireless.



Unconventional is our way of thinking, projecting and creating smart IoT architecture for data capture



Our original concept of interconnection & IoT is based on the state of the art of wireless technologies for data tracking and analysis

[www.bluepyc.com](http://www.bluepyc.com)

# What about the future?

EchoBeacon embedded in the electrical socket (**invisible!**)

**Rugged** EchoBeacon with 2 DI and 2 DO (relay)

Beacon with Wake-up in LF field:  
Beacon in deep-sleep mode works only by RF signal

*Confidential*

[www.bluepyc.com](http://www.bluepyc.com)

RFID HF/UHF reader & BLE all-in-one device:  
Beacon transmits the RFID tag UID as advertising