

LAAGER TECNOLOGIAS SUSTENTÁVEIS LTDA

# COMPANY PRESENTATION

IOT SOLUTION SPECIALISTS



# Agenda

ABOUT US

OUR HISTORY

OUR VALUES

OUR SERVICES

OUR NUMBERS

TECHNOLOGY

BENEFITS





# WHO WE ARE

We are a company that develops solutions in IOT (Internet of Things), whose objective is to improve the world and the life of the people through disruptive and autonomous systems.

Our products are designed to enable greater control of energy and water resources through intelligent connections between equipment, companies and cities.

# ABOUT US

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Our company is verticalized and we invest heavily in the development of new technologies and professional training.

Our solutions are based on three main pillars, which dominate the whole process of development, execution and service.



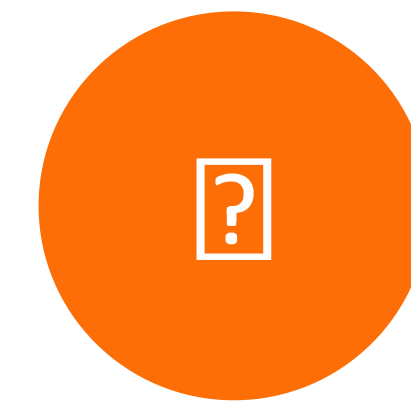
## Tecnology

In addition to designing and manufacturing our own telemetry modules, we are also experts in the development of cloud-based management platforms.



## Operational Services

We have a team of technicians trained and qualified to install and maintain meters, water, gas and energy networks.



## After Sales

We have developed a complete System for service, including an app, to clarify doubts about individual consumption or management.

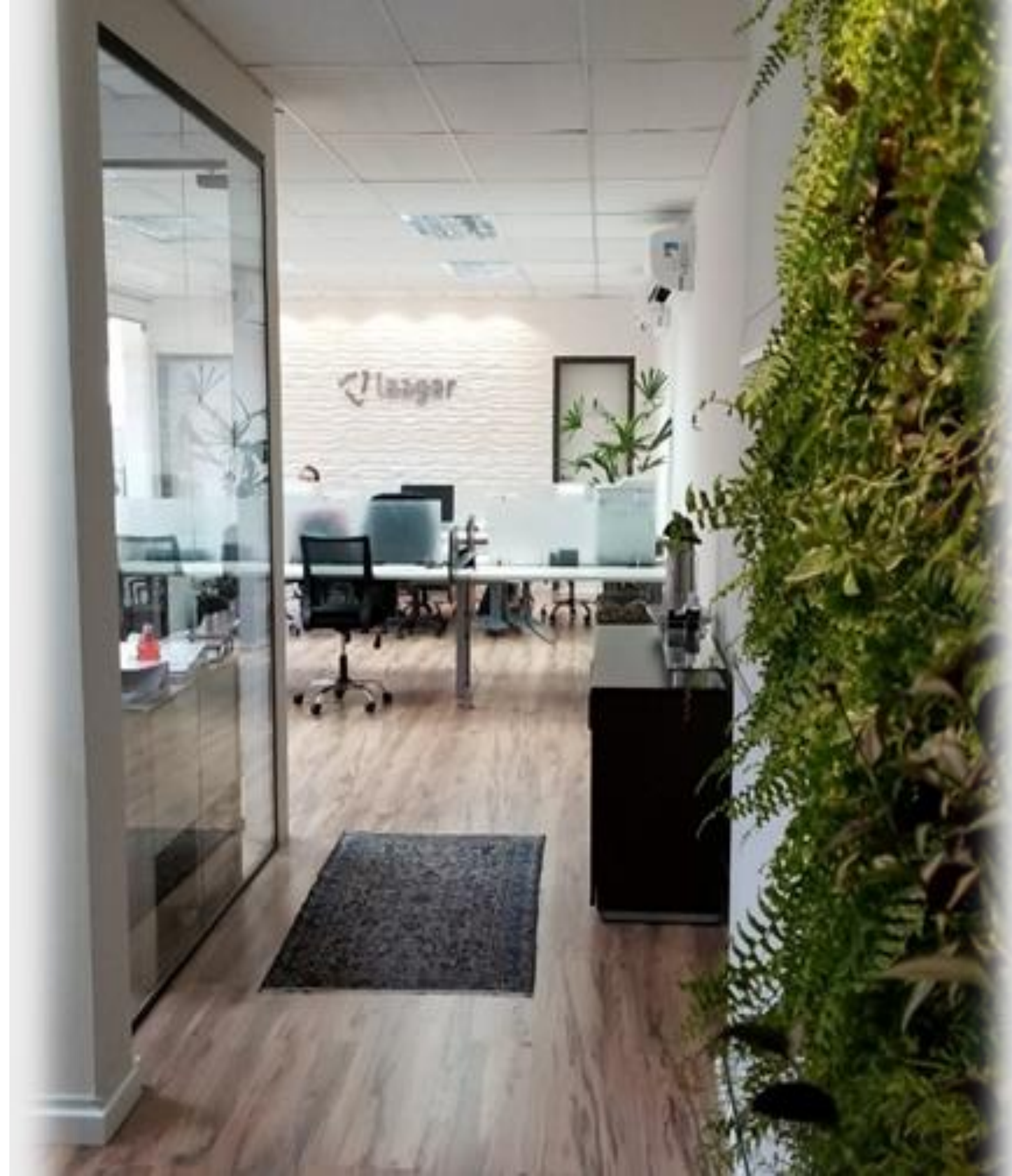


# Our History

Laager was born from the need to create a remote, automated, and cost-effective tool to enable water, gas and energy control in individual residential and commercial real estate in Brazil. The world economical crisis of 2008 was the trigger for the beginning of development, as there was a strong demand for definitive division of the condominium water and gas bills.

The main factors that determined the beginning of the company were:

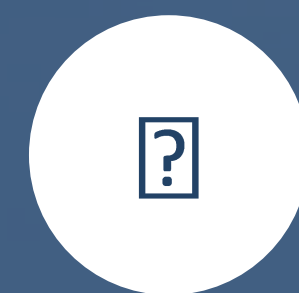
- ✓ Certification of Technology by Proacqua / SABESP.
- ✓ High demand for individualization facilities in the market.
- ✓ Logistical support and prospecting of accessible technologies in China.





# Timeline

Laager was registered in 2010, but the concept and formatting of the company back to the end of 2008, when the founders idealized the business.



## Proacqua

After a year and a half trying to develop pilots with energy utilities, the company started with SABESP the agreements for certification of the line of water meters with telemetry and valve, aimed at individualization of water in condominiums.

2008

## First Ideas

At the end of 2008, as the world crisis approached Brazil, the founders began studies to bring innovative products that could generate savings for Brazilian consumers.

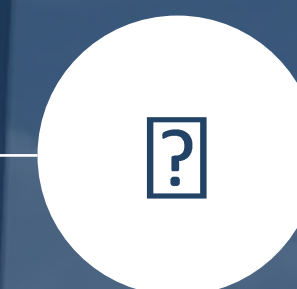


2010

2012

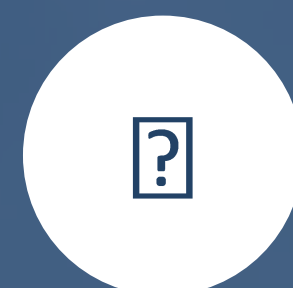
## 1st Sales

After development and approvals in Inmetro, Anatel and Proacqua, we realized our first sale of the solution for distributors. There were 500 units successful deployd for a CDHU in São Paulo.





# Timeline



## Control Center

The water crisis in São Paulo causes a significant increase in the value of water bills, and to minimize this impact, LAAGER inaugurates a new control center with tools and launches the first version of the APP.

2013

## New Technologies

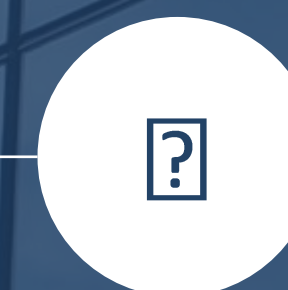
Sales are multiplying and Laager starts developing new generations of firmware and modules. Stop focusing on import meters, to specialize in RF technology developer, and can incorporate it into any pre-equipped meter.



2015

## Leadership

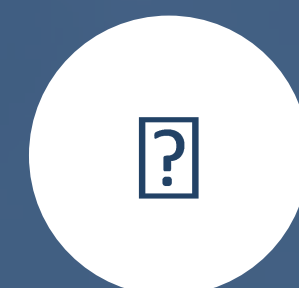
By reaching the mark of 50 thousand water, gas and energy installations in Brazil, Laager has consolidated itself as one of the leading national companies in the telemetry sector in fixed networks for meter automation.



2016



# Timeline



## Public Networks

New international alliances for IOT public networks attract LAAGER's attention to enabling a more robust and interoperable infrastructure. Laager begins the development to adapt its RF modules in these new networks.

2017

## International Expansion

Upon its consolidation in the Brazilian market, Laager started its international sales in countries such as Mexico, Panama and Ecuador.



2018

2019

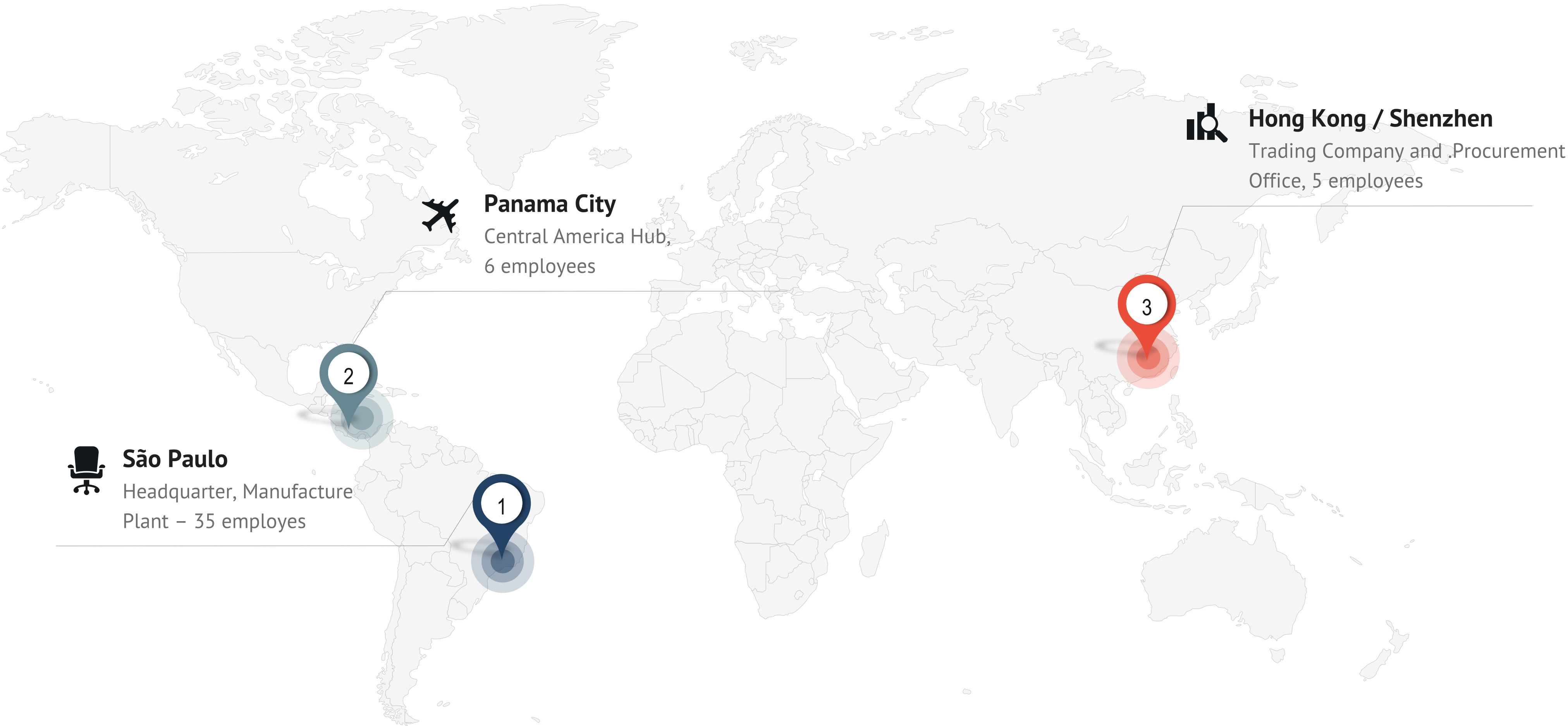
## New Contracts

The maturity of the market and high competitiveness of the solutions enabled Laager to win important bids in the Brazilian market. CAESB in Brasília and SABESP in São Paulo.





# Worldwide Locations





# Our Vision

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To be a reference in innovation and development  
of systems and remote communication for Water,  
Gas and Energy metering







# Our Mission

Develop innovative solutions and services in communication and automation that contribute to management improvement and processes of companies and society.



# Our Values

They key values that support our services and solutions.

01

## R&D Development

We never stop investing in product and software development.

02

## Verticalized Structure

Our company train and support a complete team attending all service and product areas

03

## Flexibility

Our solutions are always developed thinking to attend different market niches and clients.

04

## Support

After Sales is one of most important values of or business. Automated services minimize operations and optimize our services.

05

## High Quality

Our team have several years of experience in manufacturing and software development. We design and manufacture our whole solution and handle with care all details.



# Our Services

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- 01

Utility IOT solutions

Imperdiet nec, imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.
- 02

Submetering

Imperdiet nec, imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.
- 03

Energy Efficiency Monitoring

Imperdiet nec, Imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.
- 04

Industry 4.0 Automation

Imperdiet nec, imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.
- 05

Smart City – Street Lighting

Imperdiet nec, imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.
- 06

IOT Solution Developments

Imperdiet nec, imperdiet iaculis,  
ipsum. Lorem ipsum dolor sit amet.



# ABOUT OUR NUMBERS

Outstanding services and technology can be reflected through our numbers.

56k  
Metered  
installations

42k  
Water meter  
installations

14k  
Gas Meter  
installations

16M  
M  
Readings per  
Month

1.3MM  
Leakages Detected  
per month (liter)

88  
After Sales  
services per  
month

100k  
Replacing mechanic Water  
meters to Ultrasonic with  
IOT Network– SABESP (Sao  
Paulo/Brasil)



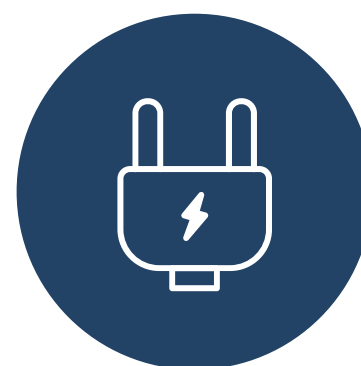
# We Are EXPERTS

In managing and supporting IOT operations

## About Our Experience

Nine years developing solution for residential market metering in water and gas sectors.

Four years managing energy consumption data for Industries.



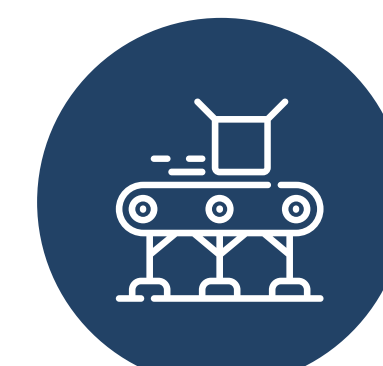
### Energy

Specific Platform to manage and monitor industries energy quality consumption and tariffs



### Utilities

Complete solutions for smart metering management



### Manufacturing

Industry 4.0 and automation.



## Internet Of Things

### Solutions for Smart Measurement Networks!

Our solutions consist mainly of reading and remote management by Radio Frequency using Public Fixed Networks.

We have developed specific products for a variety of purposes, ranging from individual meter monitoring, such as creating ultra-low-power and long-range RF smart grids.

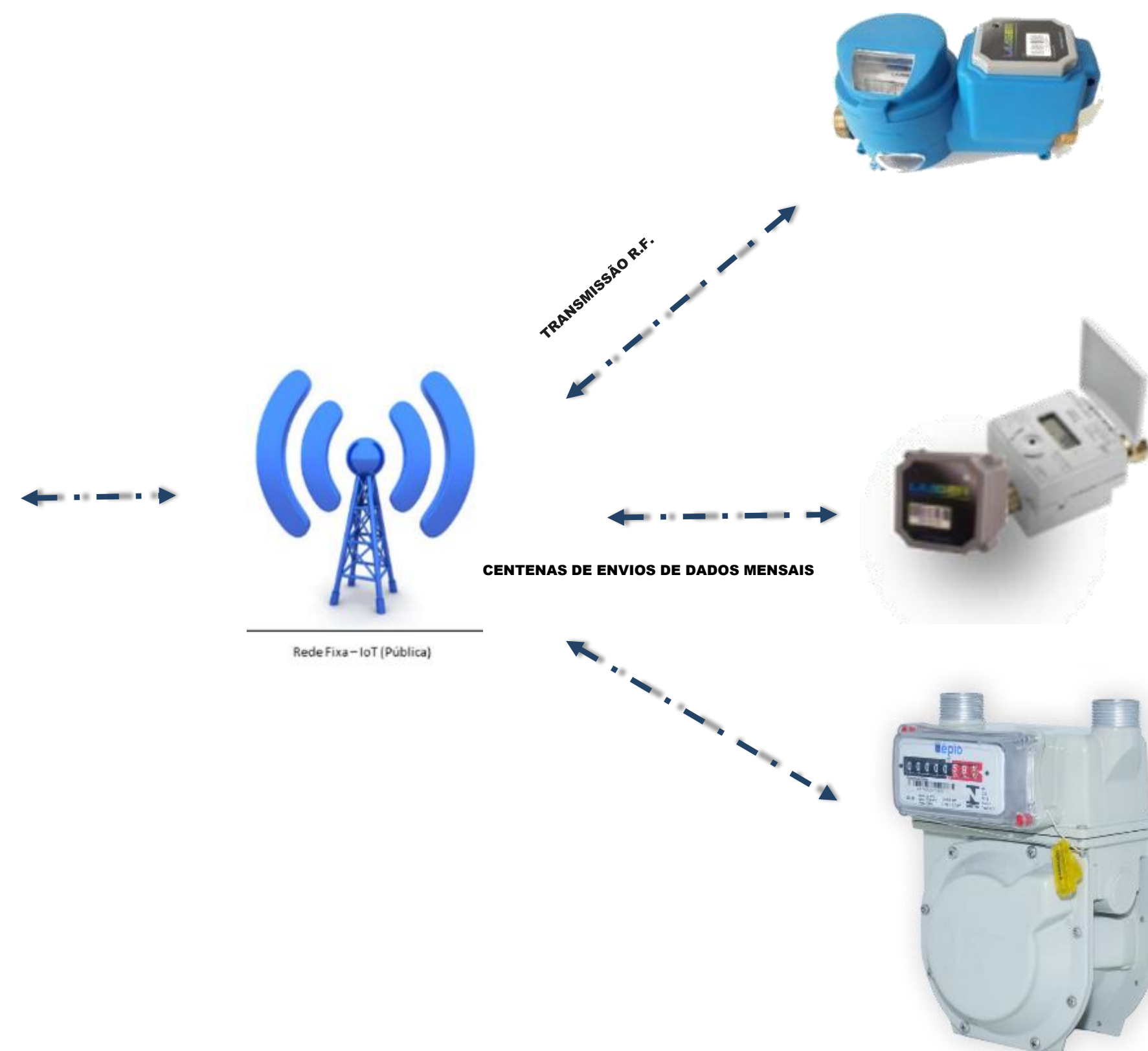
All of our modules are state-of-the-art and are certified by competent regulatory agencies in Brazil and abroad.





## Internet Of Things

The data acquired by the module are transmitted every hour or every consumption parameter and through the public network (like Sigfox) the data arrives in our web server platform. Inside the platform all data is organized and analyzed for report generation and management.





## Internet Of Things

### Radio Frequency Modules.

This type of communication with the meters has the best cost benefit and easier maintenance than other management and reading systems. Our RF Module features up to 5Km range and advanced control technology as well as efficient power management with high-capacity lithium-ion battery with life > 8 years, which significantly reduces maintenance and exchange costs.

Works for Water, Gas and Energy.



#### Ficha Técnica:

RF Frequency: 902-928 MHz;

Water resistance: IP 67;

Power Output(W): 0,0545

Battery Life Expectancy: ≥ 08 years;

Internal Memory and Alarms

Temperature Range of work: 0°C~+70°C

Data Collection and Alarms: Pulse Signals or MBus



# Our Modules key Advantages

The RF Modules can be configured to detect fault conditions and / or anomalies with generation of Alarms that are sent instantly in case of occurrences for the proper storage of events in Database



## Long Range Signals

Our firmware was designed to optimize the data in order to achieve longer range communication.



## Long Battery Life

We use special lithium ion batteries and transmission signals were set to optimize the battery consumption



## Alarms

Low Battery;  
Leakages;  
Movement;  
Inverted Flow  
Wire Cut  
Magnetic Attack







## Water & Gas Meters

We can use any brands, types or sizes of meters (national or imported) to integrate our measurement network. These meters must be “pre-equipped” with magnetic pulse output where they will be able to integrate with the Radio Frequency module for data transmission.

We only work with high precision products in reading and pulse system.

This flexibility allows the best choice of product for the enterprise. Avoiding situations where the customer is hostage to a technology because of the meter.



# Technology – field installations

Product installations in many different infrastructures and as well field conditions



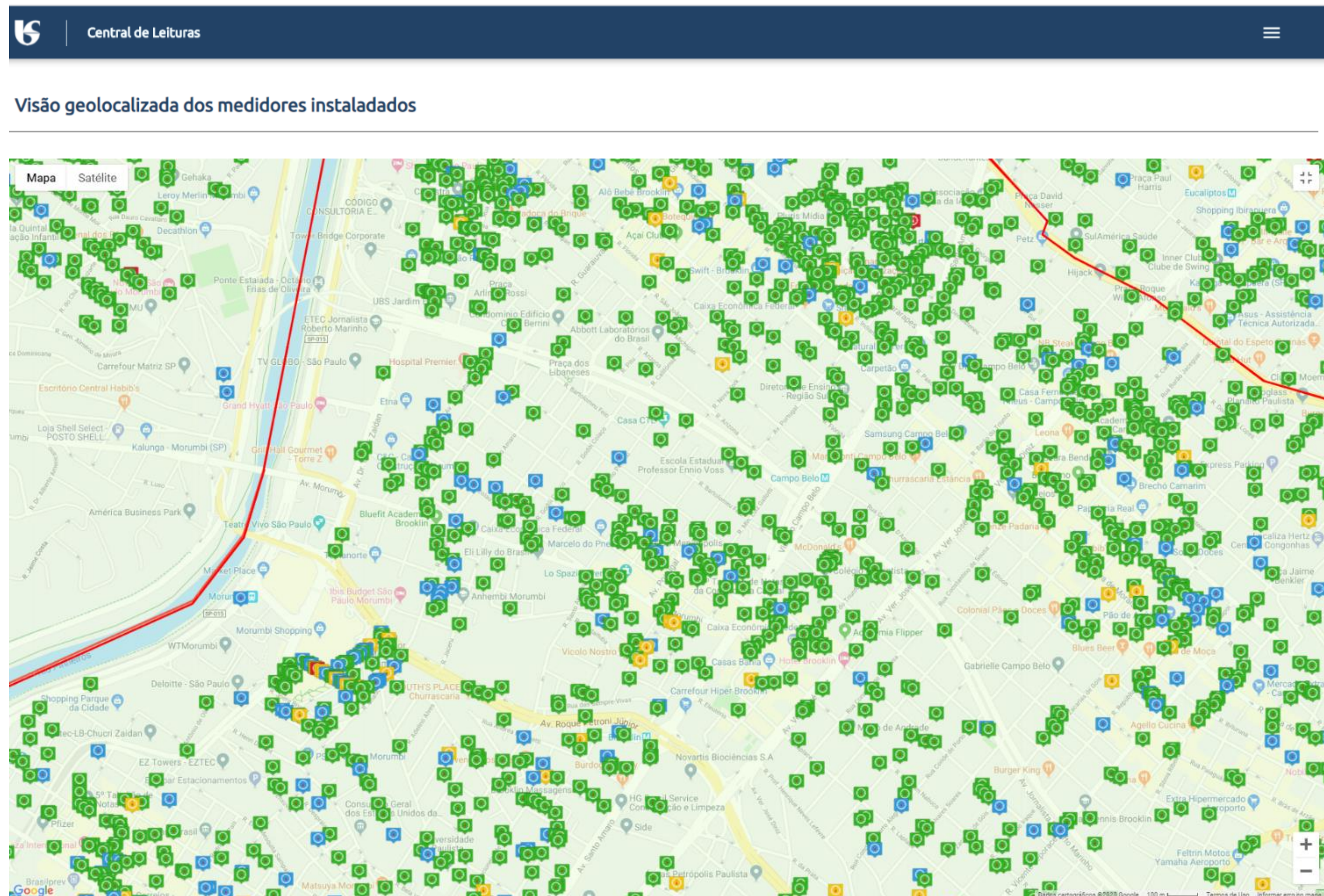


# Data Management Control Center

The data can be parameterized for uploads several times a day, where the accumulated consumption of the equipment, along with existing alarms, will be stored in a computational infrastructure developed by Laager in a web server with the maximum protection of data and encryption existing in the market.

Client and software data security is performed through Secure Sockets Layer (SSL), where our contracted web servers are certified against penetration and automatic disaster recovery.

With bidirectional commands, our Web servers send parameterization commands remotely, as well as adjustments needed to the field needs of our customers.





# Data Management Control Center

The Remote Metering System for measurement management was developed for the complete management of the individual consumption of Water and Gas, allowing the individual readings of the consumer units, providing greater justice and transparency between the Autonomous Units, Real State Administrator and the Utility.



A monitoring and management center tracks measurement information and possible faults and alarms. SMS messages can be configured for emergencies and / or maintenance calls.



# Mobile APP

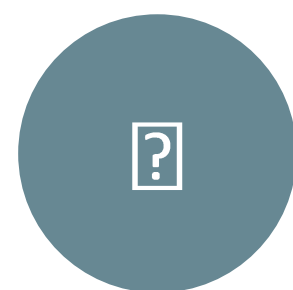
## Consumer tools

A complete mobile application was developed in order to improve our after sales support. The app can manage and inform three different consumptions: water, gas and energy consumption.



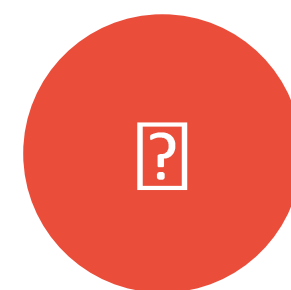
### Constant Updates

Native software for both Android and IOS Platforms



### Design & Features

Designed to attend most consumer needs as: Long data history, consumption projections, alarms



### User Friendly

Intuitive design and clear information makes it one of the most friendly apps for metering in Brazil





# APP Main Features



## Technology

Controls Multiple Units;  
Multiple users



## Managed Services

Analysis of average consumption  
Daily Graph Reports



## Data Services

Report of monthly Bills;  
Makes Consumption Goals with warnings



## Support Center

Calculator for consumption understanding  
Notifications for account projections



## Data Protection

Confirms utility readings by the user  
Alarm for leaks.



## Multiple Meters

Can be set to manage multiple meters:  
Water, Gas and Energy.







# Field Services

## Operational and Maintenance Teams

We count with a large and skilled team that can perform water, gas and energy installations in several types of infrastructure.

All professionals attend a qualification program developed by Senai and attend every year a recycling for Safety and Technical programs.

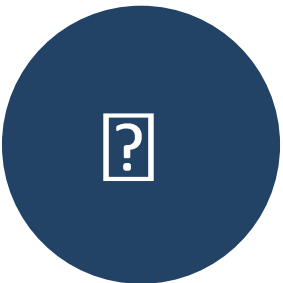






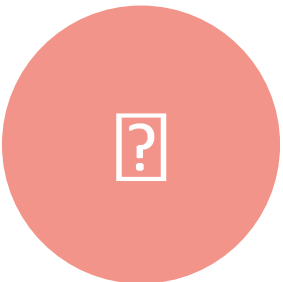
# OUR BENEFITS

Choosing Laager as a solution provider, you are instantly receiving the following benefits:



## Technology

Our technology was developed inhouse and we guarantee the best product support and cost-effective devices.



## Up to Date Data Information

We update data every meter consumption and stablished hour and never erase data from our database.



## Data Protection

Our systems use the highest standards for data security and encryption.



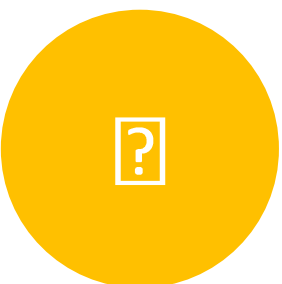
## Wide Range Coverage

Using the latest public network technologies, we can achieve largest areas network



## Intelligent Monitoring System

We have dedicated professionals to daily monitor the field readings, which can detect anomalies and alarms.



## Endurance and Long Life Batteries

Our products and solution were designed to safe battery, which can stay on field for up to 8 years.



## Flexibility and Universalization

Our modules can be used with any type of meter, electronic or mechanical, which permits the best interoperability



## Managed Services - Transparency

Each client can follow up consumption through the web or app. This clear view of the process grantee the highest satisfaction.



## Certification and Homologations

All products are qualified and certified by national authorities for Metering and Radio Frequency





Thank You