



Ephylos



powered by



SUSTENIE LIGHT

Lighting Lab Expertise

Internet of things

IOT



Light at the center of the digital world. From Smart Lighting to build around it an eco-system of integrated solutions, from energy efficiency to electric mobility, up to complex digital platforms for the multidisciplinary management of a huge amount of constantly changing data, with cutting-edge services in Smart City and in the IoT.

EPHYLOS: SMART REMOTE MANAGEMENT FOR LIGHTING SYSTEM

SMART REMOTE MANAGEMENT

Efficiently monitor and control LoRa-based devices for public and industrial lighting. Ephylos is a powerful web-based platform for remote management of lighting fixtures using Vega LoRa modules. Access it anytime via ephylos.com.br on any device with internet. Key features include user management, network setup, device configuration, and automated event handling for optimal performance and maintenance.

DISCOVER EPHYLOS

- **Why Ephylos?** Assertive monitoring, customizable alerts, and automated tasks reduce downtime and costs.
- **Getting Started:** Log in with your credentials to access an interactive map of georeferenced devices.
- **Supported Languages:** English, Spanish, Italian, Portuguese and more for global usability.

LoRa WIRELESS RFM TECHNOLOGY

- **LONG**
Penetrates in dense urban and deep indoor environments, connecting to sensors up to 5 miles outdoor
- **LOW POWER**
Designed specifically for low power consumption
- **HIGH CAPACITY**
Supports millions of messages
- **COMMUNICATION**
Bi-directional communication link with adaptive data rates
- **GEOLOCATION**
Enables GPS free, low power tracking applications
- **STANDARDIZED**
LoRaWAN specification ensures global interoperability among applications IoT solutions providers and telecom operators
- **SECURE**
Embedded end-to-end AES-128 encryption of data for optimal privacy and protection
- **LOW COST**
Reduces costs three way: infrastructure investment, operating expenses and end-node sensors

KEY FEATURES

| | |
|---|---|
|  Flexibility | <ul style="list-style-type: none">• Cloud-based |
|  Monitoring | <ul style="list-style-type: none">• The server infrastructure has a in time of operation availability of 99.80%• Updates are remotely and securely installed in a automatic way• Data integrity for a period of 24 months• Data storage, by redundancy, in at least two different locations, to ensure an easy storage reliability and information retrieval• Data replication is instantaneous and automatic |
|  Communication | <ul style="list-style-type: none">• The control platform is presenting a friendly web interface, available in 4 languages, which can be viewed from any device with a common browser.• A high volume of devices, reports and other functions can be managed in a easy and flexible way |
|  Dashboard information | <ul style="list-style-type: none">• Unlimited historical data reports referring to failures, occurrences and measurements, which can be exported in files• Visualization of the public lighting points on a georeferenced cartographic base, integrating the street lighting plan on a map or satellite photo with zoom and street view• Configuration of programs and procedures for control, monitoring and consultation, even in case of failures, occurrences, alarms and warnings• Visualization of any luminaires and system faults being automatic and in real time• Measurement of energy consumption broken down by public lighting point in line with the required billing procedures• Real-time measurement and monitoring [instant and effective values]of voltage, current and active power• Ability to register a service order as well as its closure, indicating awareness o the user• Recording of hours of operation for each luminaire• Generation of management reports including digital maps, graphs and demo |
|  Security | <ul style="list-style-type: none">• Reliable encryption technology with a high level of security for system operations• The operation is safe and protected against any type of external anomaly, ensuring safety in an international certifying body• System information security mechanisms |

KEY BENEFITS

Open, versatile and integrated system communication

- Communication of computers/servers with other internet systems in an open, standardized and documented manner
- Easy integration with the operation and maintenance services of the municipal public lighting network, in order to support the execution of corrective and predictive services
- Support LoRaWAN network

Lighting technologies constant upgrade

- Easy incorporation of existing open lighting Control Protocols [including 0-10V, DALI, DALI 2.0, D4i, SR]
- Optimisation of lighting efficiency
- Support future innovation on street lights and smart-city applications

Full control of optimised maintenance

- Simultaneous operation of multiple control screens in different locations at any time
- Automatic fault alert and notification
- Control commands, monitoring and consultation of the lighting network in real and scheduled time
- Ability to generate a complete event diary (log) for each of the public lighting points

KEY CHALLENGES

The EPHYLOS Sustainable IOT Lighting™ solution deployment is designed to overcome the following challenges:

Use of different devices and fixtures

- Each IoT solution uses different devices with very poor scale-based solution

Use of different connectivity solutions

- To manage all network technology in a common way

Diversified and multiple IoT protocols, standards, and applications.

- To manage one unique IoT platform solution for fast deployment
- To use a common dashboard
- To visualize IoT data in a proper way
- Difficult to process different data sets

End-to-end security

- Ensure reliable protection of all data, networks, and applications

FUNCTIONALITY AND SECURITY

| | |
|---------------------------|---|
| Authentication | <ul style="list-style-type: none">• Over-The-Air-Activation [OTAA] and Activation-By-Personaliation [ABP] |
| Encryption | <ul style="list-style-type: none">• AES-128 encryption with CTR mode, CMAC mode, two-tier key structure [AppKey/NwkKey → AppSKey/NwkSKey] |
| Cryptography Suite | <ul style="list-style-type: none">• AES-128 with CTR and CMAC modes, two-layer symmetric key architecture, session key management |

KEY SOLUTION

Software

- IoT Platform
- Central Management System

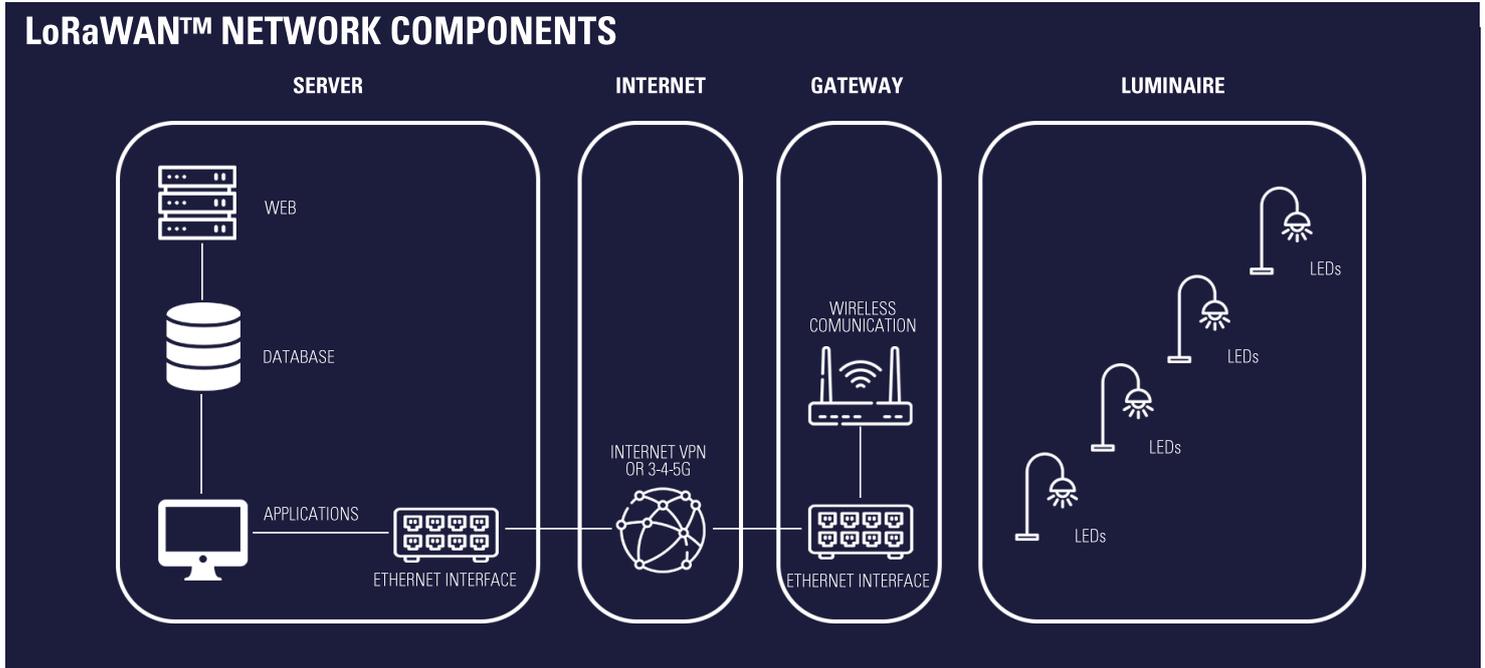
Hardware

- LED Roadway Luminaire
- Remote Control Node
- Gateway

EPHYLOS - APPLICATION SERVER

This is where the data gains meaning. **Ephylos** organizes, interprets, and presents this information in the form of maps, dashboards, and management tools.

LoRaWAN™ NETWORK COMPONENTS



EPHYLOS SETUP

- **Easy User and Company Setup in Ephylos**

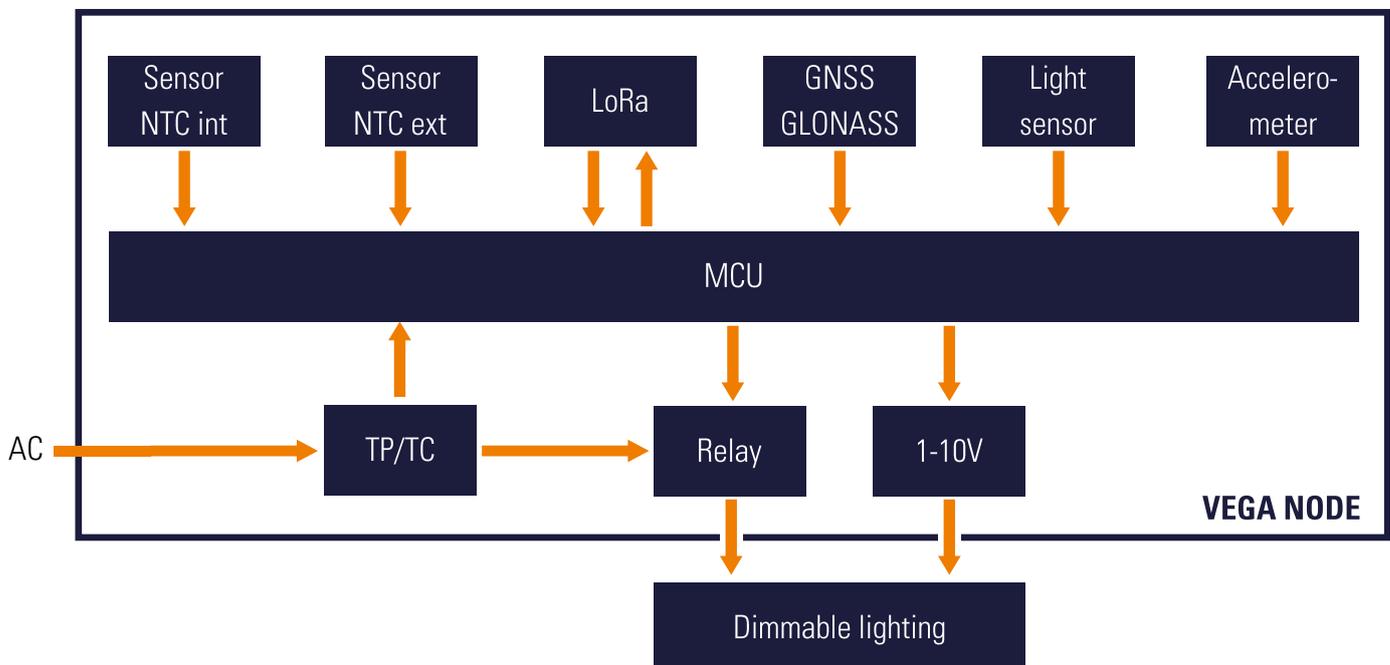
Start using Ephylos by setting up users, companies, and roles for secure, role-based access. While users focus on their operations.

- **Configure Networks, Devices, and Operations**

Build your network infrastructure and customize device behaviors for precise control. Integrate LoRa devices with nodes and groups for efficient monitoring. With few steps, you can create your own management network.

- **Automate Monitoring with Events, Alarms, and Tasks**

Ephylos turns device data into actionable insights. Events from Vega modules trigger alarms and tasks for quick response.



AIB-luce

We are the lighting brand of the Italian economic group SUSTENIE, an industrial holding company operating in Europe and Latin America.

com@aib-luce.com

www.aib-luce.com

powered by

AIB
luce

SUSTENIE LIGHT

Lighting Lab Expertise