RAJANT

Smart Lighting

Optimizes illumination, saves energy & enables IoT services throughout the covered space

Rajant's Reios transformed lighting fixtures into intelligent elements of an IoT-enriched infrastructure, to offer an energy-efficient solution that enhances operational efficiencies, maximizes comfort and enables sophisticated applications & services, while ensuring multiple revenues and saving opportunities.

Benefits

OPERATIONAL EFFICIENCIES

Energy consumption reduction
Identify presence through sensors to illuminate areas
(e.g. parking lots, meeting rooms, hallways and offices) according to needs. Regulate light intensity based on natural light sensors.

Lower operational costs
Use IoT and data analysis to anticipate failures through predictive maintenance, carrying out activities only when and where necessary and reducing operational downtimes.

Evolutionary by nature
Integrate any sensor and information about external events (e.g. weather, calendar) to adapt the system to new business requirements, while keeping your OPEX at the lowest level.

No integration effort
Enhance your current BMS with a fully wireless, connected platform, enriching any vertical application with on-site data & information.

COMFORT & SECURITY

Visual comfort
Regulate light intensity quickly and easily setting lighting scenarios and calibrate lighting parameters using data from the environmental sensors (e.g. natural light sensor).

Safety
Ensure the right amount of light to facilitate people's work or passage and to avoiding incidents, while boosting comfort and enhancing productivity.

Security
Protect personal data using device anonymization & messages encryption to comply with GDPR rules and cybersecurity best practices.

Risk Mitigation
Monitor workers safety through man-down sensors, check environmental parameters and air quality, keep under control accesses to restricted areas.

EASY AND CENTRALIZED CONTROL

Advanced monitoring
Keep all devices monitored through the platform, control remotely all devices and prompt-fix faults to mitigate risks.

Advanced reporting
Receive aggregate data on environmental parameters, consumption, accesses, and various other surveys based on the needs of efficiency and effectiveness.

One platform, many applications
Easily integrate any type of IoT sensor, actuator and device for multiple services and applications.

Enhanced data collection
Use sensor fusion to combine data, get sophisticated information from the environment and integrate local and external events.

Fields of application

- Industrial & Construction
- Agritech
- Public Sector & Smart Cities
- Culture & Entertainment
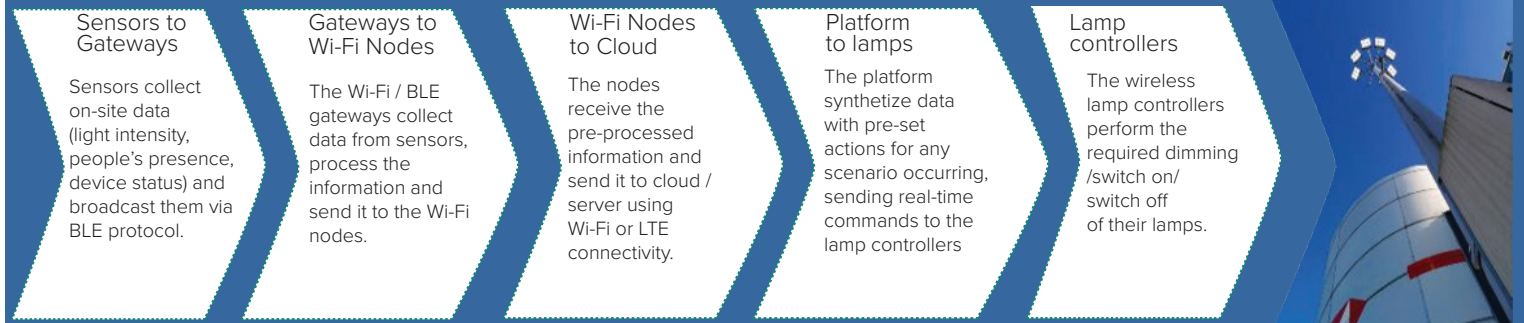- Logistics
- Building automation
- Commercial & Retail

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Smart Lighting at work

New generation LED lights are coupled with connectivity devices creating the communication network for all integrated wireless devices used by the platform. Designed with a lamp-as-IoT-hub approach, the system uses Wi-Fi & BLE technologies and is enriched by edge computing and sensor fusion to provide auto-dimming and intelligent illumination, collect environmental and usage data and perform a wide array of automatic actions.

Smart Lighting in Details

Communication technology and dynamics

Sensors to Gateways
Sensors collect on-site data (light intensity, people's presence, device status) and broadcast them via BLE protocol.

Gateways to Wi-Fi Nodes
The Wi-Fi / BLE gateways collect data from sensors, process the information and send it to the Wi-Fi nodes.

Wi-Fi Nodes to Cloud
The nodes receive the pre-processed information and send it to cloud / server using Wi-Fi or LTE connectivity.

Platform to lamps
The platform synthetize data with pre-set actions for any scenario occurring, sending real-time commands to the lamp controllers

Lamp controllers
The wireless lamp controllers perform the required dimming /switch on/ switch off of their lamps.

Devices and sensors

ED Server
Device that configures, manages and monitors all system devices. Connected via LAN, it stores MySQL database, MQTT broker and the virtualization protocol.

Environmental Sensors
Wireless devices that detect the level of luminosity, people presence and passage and any other parameter. All type of environmental sensors are Ultra-Low-Power and use BLE protocol to communicate with the platform.

sQuare® - The emotional IoT Assistant
Wall or ceiling mounted Wi-Fi / BLE gateways that can be associated to any area to enable IoT features. Equipped with LED visual interface, these devices provide a sensorial feedback showing each area's status, for example, if a meeting room or an area is available, if there are environmental anomalies such as high or low temperature or any other pre-set information.
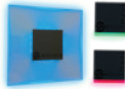
WAD
Multifunction device operating as lamp controller, BLE Observer and Wi-Fi/BLE gateway for MQTT messages. Powered by edge computing, it can be connected to up to 4 LED lamps or it can stand alone.

WAD Rugged
Multifunction device operating as lamp controller, BLE Observer and Wi-Fi/BLE gateway for MQTT messages. Equipped with Nema Socket connection, it can interface legacy outdoor luminaires for flexible, future proof platform.

Lighting Fixtures
Energy-efficient devices with high luminosity, great lifespan and reduced carbon emissions. The platform can host any type of LED lighting fixture, from industrial to office & commercial areas, from indoor to outdoor.
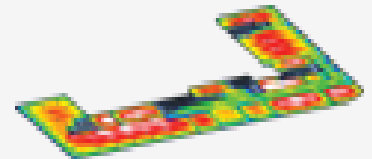
Use Case

Smart Lighting in the HQ of a Public Company

A public company, market leader in the digital transformation industry, needed to evolve their HQ environment by creating the best lighting condition while reducing energy consumption, monitor environmental parameters, check actual space usage, control access in restricted areas & enable further IoT services. The solution had to be deployed in a 3-story building in Milan while the company ran their activity as usual.

Lighting Project - 2nd Floor

Rajant's Reios delivered lighting fixtures, IoT devices and a platform that allowed to:
- Quickly and easily set scenarios calibrating lighting parameters using information from environmental sensors to ensure greater energy efficiency & costs optimization;
- Manage access control of restricted areas (with real-time alarms in case of violations), meeting rooms, elevators & desks;
- Collect and deliver raw data on consumption and environmental parameters while enabling also activity-based working procedures.

REIOS

20+ YEARS OF GAME-CHANGING WIRELESS

RAJANT
If it's *moving*, it's Rajant.
*Industrial Wireless Networks **Unleashed.***