



Qualitino



SEV©
GROUPE RAGNI

CONNECTED SOLUTIONS
FOR SUSTAINABLE REGIONS





01
SEV©

02
PLATFORM

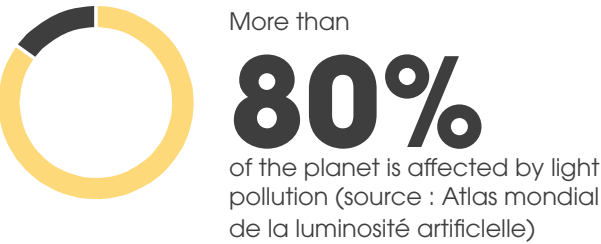
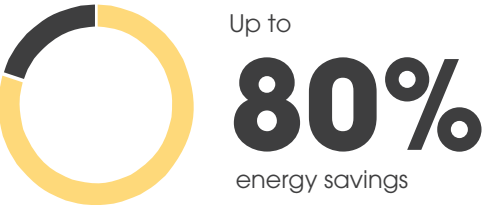
03
OFFERING

1
SEV©

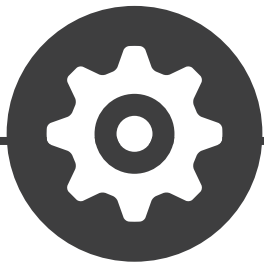
At a time when the cost-effective management of public infrastructures has become a major environmental and economic concern for regions, the latest company created by the Ragni Group aims to bring life to connected regional projects. Its social purpose means that SEV© proposes innovative turnkey solutions to support local authorities in their connected projects.

Using a new-generation remote management and control system which produces urban data, we improve the quality of services delivered to citizens, through responsive, adaptable and connected solutions. Lighting, water, mobility, environment, energy, public buildings: all the key infrastructures of a local authority are controlled in real time using our SEV© Connect platform, whatever the communication protocol.

Public lighting lies at the heart of the challenge of energy sobriety. A central focus for local authorities is the efficiency and optimisation of their lighting and a key component of their economic and environmental transitions. As a vital tool in optimising resources, we use technologies that ensure fair and appropriate management in interaction with the user.



Adapting
regions
to **users**
and **silent**
stakeholders



MANAGEMENT

The SEV© Connect platform offers comprehensive visibility and the capacity to supervise your whole lighting infrastructure. Our profile editor simplifies the creation process, making it rapid, precise and intuitive. Manage all aspects of lighting from a central, scalable dashboard.



PROGRAMMING

Remotely supervise city lighting according to the time, season, or special events such as a national holiday. Instantly activate lighting in real time in case of accidents or reduce it when roads are calm in the dead of night. Integrate motion sensors or create festive ambiances for the Christmas celebrations. All your concerns resolved in just a few clicks.



SUPERVISION

Automatic detection of failures to alert you in case of problems, enabling you to respond rapidly and minimise interruptions. The system collects operating data from sensors installed in cabinets and/or on lights, to provide constant monitoring, efficient repairs and optimised operations.



OPTIMISATION

The expertise of SEV© staff combined with our solution means energy optimisation methods specific to each project are possible, to foster clean and long-term sustainability. Global lighting management contributes to reducing CO₂ emissions, to achieving sustainability objectives and to lowering energy consumption, as well as the related costs. Optimising energy use and operations is the central component of our solution.

ECOSYSTEM

The SEV[©] ecosystem relies on a deep-rooted conviction, where sectoral objectives can only be fully achieved if all stakeholders work together, pooling their expertise and resources to ensure the successful outcome of targeted projects. We are building our company in this spirit of cooperation and commitment to sustainability.

We are committed to constantly expanding our partner network, as we firmly believe that a diversity of skills and outlooks is essential to innovate and rise to the challenges of our times. When we select our partners, we do so with constant attention to observing our sustainability engagements.

A key component of our ecosystem is the meticulous selection of the sensor we use. These sensors are fundamental to our activity and we ensure that they meet the highest standards in terms of quality, performance, and sustainability. We also assess how they meet the challenges of an innovative, changing and responsible region. This means that our sensors are designed to adapt to the changing needs of our environment, while minimising their impact on the planet.

The SEV[©] ecosystem is therefore founded on collaboration, sustainability, quality and safety. We believe in the power of cooperation to make significant progress, while respecting values dear to us and ensuring that our work benefits not only our company, but also our partners and the planet.

Interoperability is at the heart of our platform. Our approach depends on the use of current web standards, which enable us to natively integrate a variety of API to make our platform interoperable with other systems.

To guarantee this interoperability, our research and development team works closely to monitor developments in communication standards. The architecture of the our platform has been totally designed with this in mind. It depends on the creation of data models (templates), which means the data can be collected in a consistent manner. The data remain accessible whether in real-time, using periodical automated extractions, or for use in third-party applications.

We make it a point of honour to ensure ownership of Project Owner data is respected. Downstream, our platform is open via the Rest API, which enables data to be transferred to Open data platforms and their integration with third-party tools such as GIS, CMMS and hypervisor supervision systems. Upstream, the application is fully open with dedicated connectors and the possibility of creating custom connectors. This enables robust integrations with a wide range of hardware, connection protocols and third-party applications.

INTEROPERABILITY

The SEV[©] Connect platform is designed to be interoperable, to ensure that data and information can be shared, retrieved and used fluidly with other systems, thereby reinforcing the flexibility and utility of our solution.



A GDPR-COMPLIANT SOLUTION

Personal data storage is a sensitive subject and even more so in the case of an SaaS solution. We understand that it is vital to protect access to these data with a high level of security.

For this reason, the data of each customer are stored in separate databases which do not communicate with each other. Whenever a new app is created, new partitioned databases are made available exclusively for the user or the administrator.

CYBERSECURITY

We implement a **"security by design"** approach to ensure optimal security from solution design to operational maintenance.

We continually reinforce our solution security by imposing drastic measures in terms of:

- architecture
- updates
- authentication
- firewall
- data stream encryption
- stored data encryption
- and more

Weekly audits provide recommendations in relation to the latest criteria applied for certification:

- ISO 27001
- PCI DSS 3.2.1: the global data security standard used by the banking industry to protect payment systems data.
- SOC TSP: System and Organisation Control > Trust Service Principles





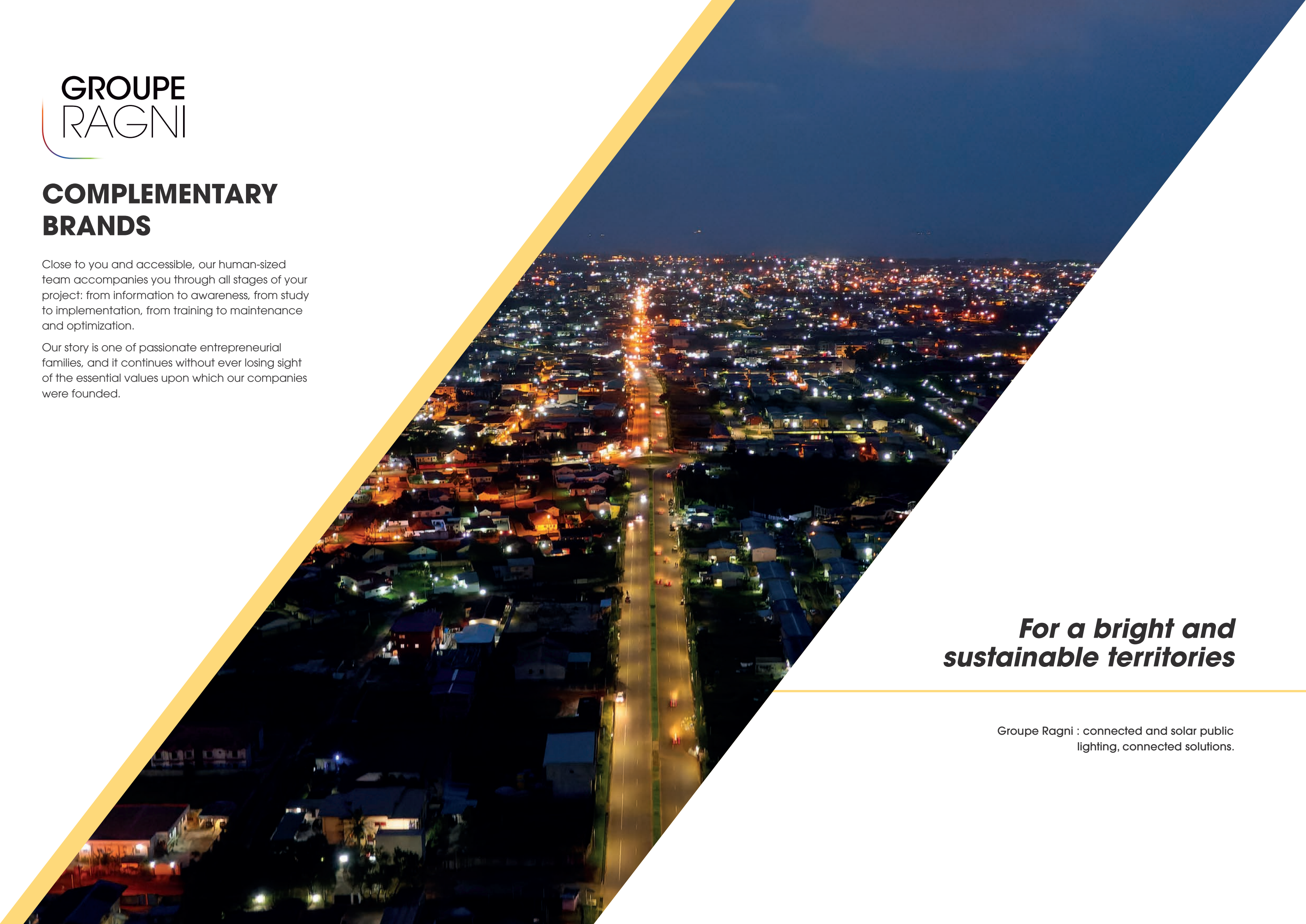
COMPLEMENTARY BRANDS

Close to you and accessible, our human-sized team accompanies you through all stages of your project: from information to awareness, from study to implementation, from training to maintenance and optimization.

Our story is one of passionate entrepreneurial families, and it continues without ever losing sight of the essential values upon which our companies were founded.

For a bright and sustainable territories

Groupe Ragni : connected and solar public lighting, connected solutions.



2

PLATFORM

Effectively supervising public lighting, rapidly detecting problems and monitoring the intensity of systems.

Smart, remote management for sustainable energy efficiency, optimised maintenance and satisfied users.



MANAGEMENT

Our platform offers a comprehensive solution for urban lighting, enabling smart, efficient and secure management. It provides advanced customisation tools to meet the specific needs of your lighting project.



Controls at the cabinet or at the light point

You can control each cabinet and/or street light directly from the control station, which enables you to adjust lighting levels in real time according to requirements.



Street light management

Our platform handles a wide variety of street lights, whether connected to the mains grid or powered by solar energy. It is also possible to control variable-message signs or special illuminations.



Sensor geolocation

Sensor geolocation enables automatic assignment of profiles according to the location, which makes lighting management over vast regions much easier.



Advanced mapping

Advanced mapping is available to display the precise location of each street light and each cabinet, to make monitoring and maintenance much easier.



User management

It is possible to create custom user profiles and assign specific rights to each user, thereby guaranteeing secure access and control of the platform.



Custom interfaces

It is possible to customise interfaces according to your preferences, such as altering the logo or the colours, or by integrating images of your city. You can even use 3D modelling for an immersive visual representation.



Contextual display

Our platform displays information specific to each user type, offering an optimal experience and pertinent data for each operator.



Specific functions for emergency situations

If necessary, our platform can implement forced lighting levels for emergency services, to ensure the safety of citizens in all circumstances.

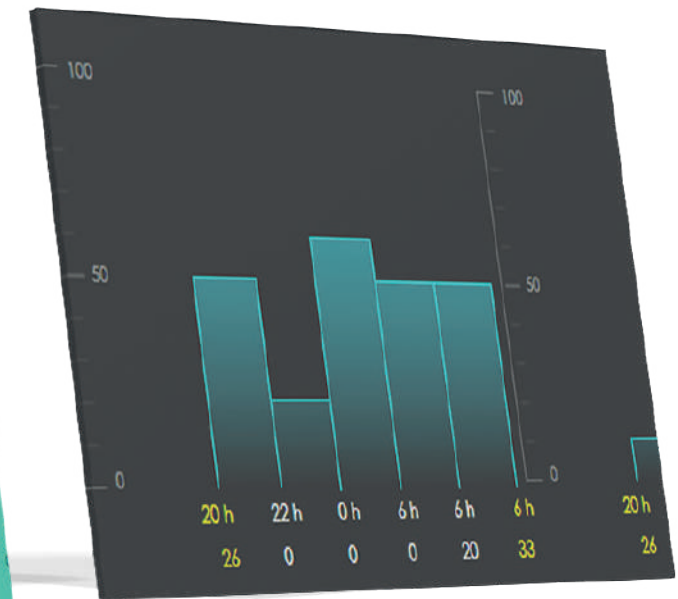


Secure data access

Data are secured in each zone, enabling access limited to the authorised parts of the platform. This reinforces the confidentiality and security of information.

PROGRAMMING

Using our advanced programming functions, enjoy total control over public lighting management in your region, optimise energy efficiency, citizen safety and comfort, while reducing operating costs. Our platform simplifies the management process while delivering advanced customisation options to meet the specific requirements of your community.



Custom lighting profiles

Each cluster of street lights can be configured with four default profiles, offering exceptional flexibility. Each profile can feature five distinct light thresholds. You can therefore adapt the lighting according to the specific needs of each zone in the area covered.

Ephémérides

Our platform automatically downloads solar and lunar schedules when the installation location is specified. This ensures accurate programming according to variations in natural lighting throughout the year.

Calendars

It is simple and intuitive to create calendars. You can easily configure switch-on and switch-off times for each cluster of light points in just a few clicks, for daily, weekly, monthly or seasonal programmes.

Standard weeks and exceptions

Our system allows you to create up to three standard weeks for each cluster of lights, providing excellent flexibility for your programming needs. Furthermore, you can manage up to five exceptions per year and per cluster, which is ideal for special events, holidays or unforeseen situations.

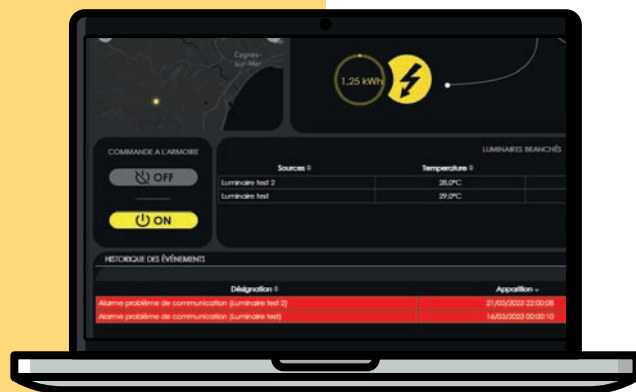
Dedicated interface for solar street lights

For solar-powered installations, our platform provides a dedicated programming interface which delivers precise lighting control depending on the battery charge and environmental conditions. This ensures efficient use of solar energy while maintaining reliable lighting.



SUPERVISION

With advanced supervision features, you can maintain a reliable, efficient, and sustainable public lighting system. Proactive problem management and access to detailed data ensure you can deliver high-quality public lighting and comfort for citizens.



Inventory in case of failure

In the event a street light fails or raises an problem, our platform automatically performs a detailed inventory of data. This inventory incorporates essential data such as the light model, date of installation, precise location, references of the driver and LED PCB, to make the management of repairs and replacements much easier.

Cabinet operation information

You can monitor the energy use of control cabinets in real time. Our platform also records an energy use log based on lighting profiles, which enables you to detect trends or abnormalities. The fault log is also recorded for the purposes of troubleshooting and maintenance.

Light operation information

The essential data for street light operations are also available. You can access the operating details of the street light and a log of operating data using a ZD4i-type interface or equivalent. The real-time status of each street light is monitored to swiftly detect any issues or failures.

Alerts and notification management

Our platform features an alert system which informs you instantly in case of failure, malfunction, or any critical issue. These notifications enable you to respond swiftly and ensure the continuity of the public lighting system.

Performance analysis

The supervision platform collects and analyses operating data on a continuous basis. You can access detailed reports on the performance of your lighting system, to facilitate informed decisions on its optimisation and maintenance.

Integration

Our supervision system is easily integrated into your existing infrastructure, to guarantee centralised and efficient monitoring of all your public lighting installation.





OPERATIONAL OPTIMISATION

Thanks to its operational optimisation features, our platform makes a significant contribution to maintenance savings, to reducing operating costs, and to more efficient management of your public lighting. It also enables you to deploy proactive preventive maintenance to ensure the long-term sustainability of your lighting installation.



Maintenance savings



Using a precise fault detection system and the synchronised deployment of maintenance work, our platform will generate substantial savings by minimising unforeseen maintenance costs. The real-time data and alerts enable you to take action before a minor issue becomes a major malfunction, and thereby reduces maintenance costs.

Reduced night patrols



By optimising preventive maintenance, our platform can help reduce the need for night patrols to check street lights. Not only does this save time and resources, it also reduces the impact on the environment and contributes to the well-being of night workers.

Preventive maintenance



The platform makes implementing an efficient preventive maintenance programme child's play. By identifying street lights at risk and scheduling work before issues arise, you can extend the lifetime of the lights, reduce interruptions and make savings on replacement costs.

Troubleshooting



By monitoring the status of street lights and control cabinets in real time, the platform enables the swift diagnostic of failures. You can identify the cause of failure faster, which shortens down time, minimises repair costs and improves quality of service.



ENERGY OPTIMISATION

By integrating these characteristics, our platform helps to preserve biodiversity, while reducing energy consumption, minimising operating costs and reducing the environmental impact of public lighting. It is designed to dynamically adapt to changing conditions, ensuring safe, efficient, and environmentally responsible lighting for local citizens and fauna.

System evaluation and analysis

Our system will perform a comprehensive assessment of the existing lighting system installed. It analyses current energy performance, identifies areas where energy is wasted and assesses the environmental impact of the public lighting.

Potential for further savings

Depending on the characteristics specific to each project, our support team will determine the potential for further savings. We can identify the specific measures to deploy to optimise energy efficiency, taking into account the limitations and needs of each project.

Dynamic and adaptive lighting

Our platform delivers dynamic and adaptive lighting using dimming and motion detection functions. Street lights are automatically lit depending on the presence of humans, natural light levels and the time of day. This enables less energy consumption during off-peak hours and guarantees sufficient lighting when needed.

Variation of colour temperatures

The variation of colour temperatures is used to create light ambiances while avoiding disturbances to biodiversity. For example, warmer colour temperatures in the evening reduce disturbances of night fauna. This approach minimises any negative impacts on biodiversity, while maintaining appropriate lighting for local citizens.



SOLAR

Through its dedicated interface for solar luminaires, our platform provides precise control of lighting based on battery charge and environmental conditions. Ensuring efficient use of solar energy for reliable illumination.



Geolocation of Sensors:

Geolocation of sensors enables automatic grouping, facilitating the management of lighting across extensive territories.

Luminaire Identification Sheet:

It includes essential heritage data such as manufacturer, model, installation date, etc., providing a comprehensive reference for simplified maintenance.

Energy Produced by Photovoltaic Panel:

Visualize the amount of energy generated by the photovoltaic panel of each luminaire in kilowatt-hours (kWh). It depends on factors such as sunlight, orientation, and tilt of the panel. The higher the produced energy, the more efficiently the photovoltaic panel converts sunlight into electricity.

Energy Consumed:

This crucial data ensures that the luminaire does not consume excessively compared to the generated energy, while ensuring the proper functioning of the luminaire according to our preliminary estimates.

Luminaire Status:

Functional or faulty for a quick overview of the status of your lighting.

Data Analysis:

Analysis of historical data sent by the sensor to identify performance drifts, such as the growth of a tree near a solar panel, resulting in a reduction in energy production.

Photovoltaic Panel Soiling:

Soiling of photovoltaic panels can reduce the efficiency of converting solar light into electricity, which is why it is important to efficiently schedule their cleaning.

Malfunction Alerts:

These alerts signal potential issues or failures in the photovoltaic system, the luminaire itself, or the sensor. They may be related to any problem requiring prompt intervention to ensure the proper operation of the system.

CO₂ - Savings Achieved:

This figure takes into account the cost of CO₂ per kilowatt-hour in the user country, providing an accurate assessment of the contribution to reducing greenhouse gas emissions. This measurement is crucial to evaluate the positive environmental impact of a solar installation and encourage sustainable energy practices.



3

OUR OFFERING

Our commitment is demonstrated by the integration of comprehensive solutions, services and products that are sustainable and innovative. Our aim is to meet the requirements of all our stakeholders by delivering support from the project definition phase to managing your region.



Communication TECHNOLOGIES

WHAT IS AN IOT NETWORK?

The IoT network enables Internet connectivity and data retrieval. A variety of communication protocols are available on the market but they do not all share the same characteristics. Selecting the most appropriate communication network can become a real headache without suitable advice.

MANY APPLICATIONS ARE ASSISTED BY IOT CONNECTIVITY



Smart lighting

Traditional or solar lighting, cabinet-controlled or by individual light point, etc.



Water

Network management, watering, monitoring water courses



Mobility

Parking, traffic levels



Environment

Air quality, waste management, etc.



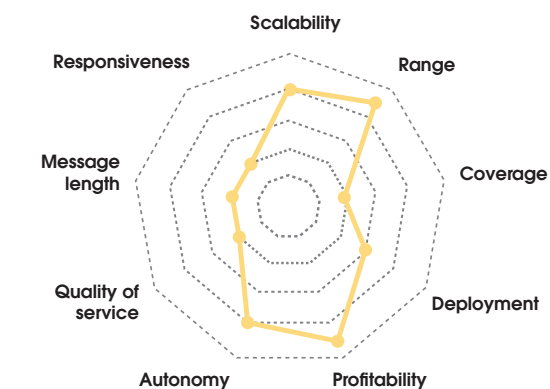
Energy

Distribution network management, recharging stations, photovoltaic, etc.

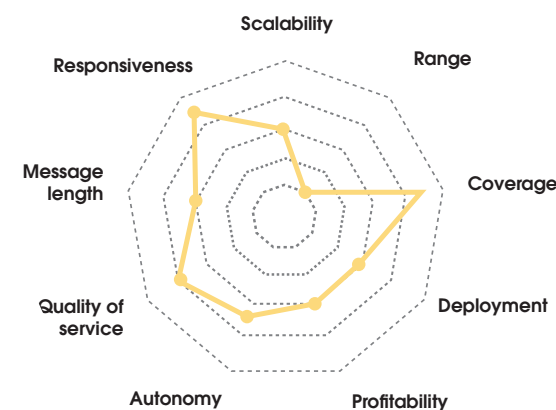


Buildings

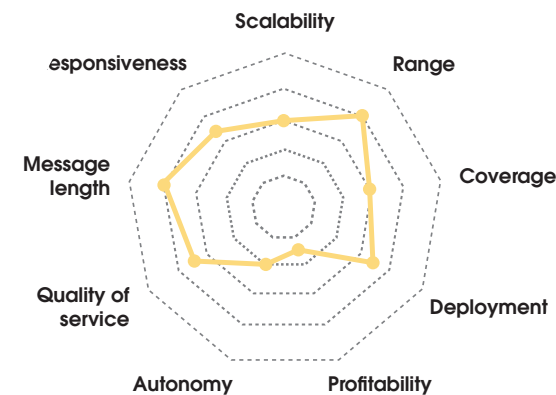
Air quality, temperature, leak detection, lighting, building management, etc.



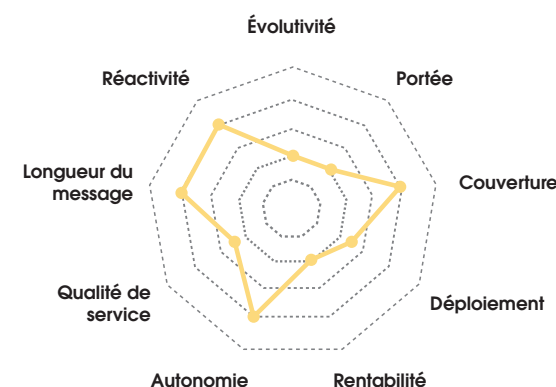
LoRaWAN®



DigiMesh®



LTE-M



PLC



WHAT CRITERIA FOR SELECTING AN IOT NETWORK?

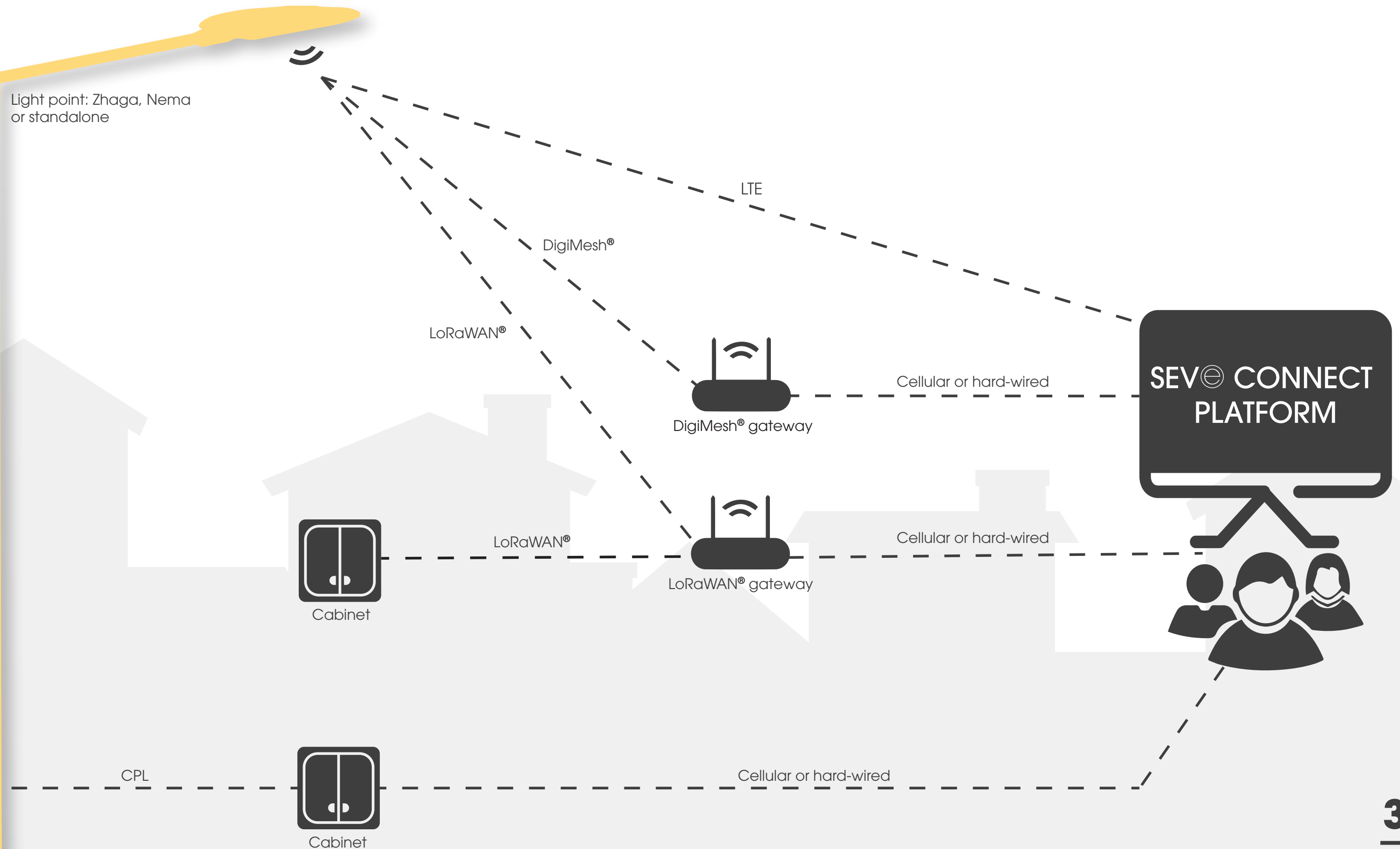
If you have a low energy budget, if you need to collect small amounts of data, and a low frequency of retrieval (a few measurements per day) is sufficient, mesh connectivity such as LoRa or DigiMesh is the most appropriate solution.

If your application requires frequent data transmissions and a high data throughput rate (logistics tracking, Industry 4.0, connected healthcare, etc.), cellular connectivity is better suited. The main choices are between LTE-M NbloT or a 4G network.

LIGHTING

communication options

Several communication technology configurations are possible. Our SEV[®] teams will recommend the best fit for your project, taking into account the specificities of your region and the infrastructure already in place.



PRODUCT SELECTION

SEV® products are carefully chosen to meet the most demanding standards in terms of quality, performance and sustainability. We also assess how they meet the challenges of an innovative, changing, and responsible region. Our wide range of products is designed to be comprehensive and to adapt to a large variety of projects.

CABINET MODULE



STANDALONE UNIT



NEMA NODE



GATEWAY



ZHAGA NODE



Turkney PROPOSALS

To simplify new connected city projects and make smart, sustainable technologies more accessible for regions, we design turnkey solutions that meet a variety of budgets and cover the most frequent use cases.



plug &
play



LIGHT POINT PACKAGE



CABINET PACKAGE



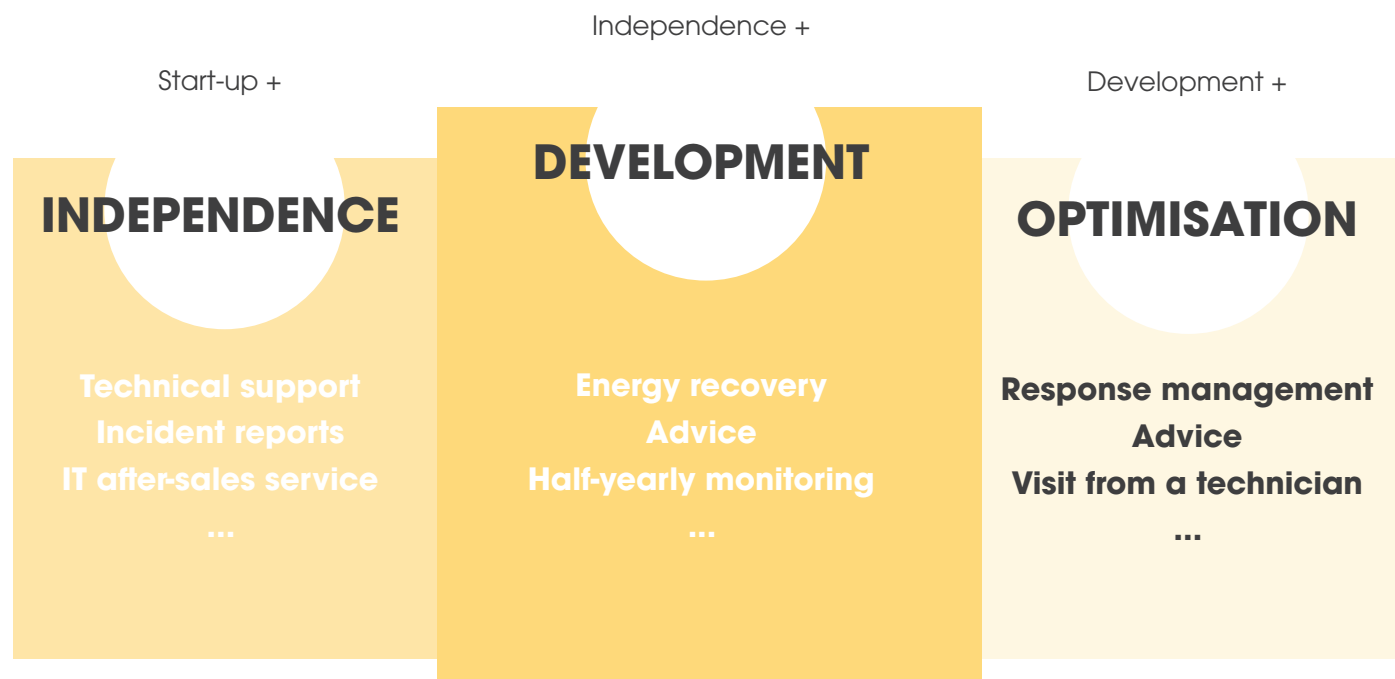
STADIUM PACKAGE



**Brochure available on request*

RANGE OF SERVICES

Our service packages are simple and flexible, changing alongside your needs. We offer full support from technical assistance to IT after sales, energy recovery or work management.



	START-UP	INDEPENDENCE	DEVELOPMENT	OPTIMISATION
● Declaration of sensors in the computer server	✓	✓	✓	✓
● Initial network configuration	✓	✓	✓	✓
● SEV® technician present during installation	✓	✓	✓	✓
● Access to the SEV® Connect platform	✓	✓	✓	✓
● Functional warranty for the communication network		✓	✓	✓
● Detection and reporting of incidents affecting the communication network		✓	✓	✓
● Alerting the client of an incident		✓	✓	✓
● Sending information to our IT after-sales service		✓	✓	✓
● Resolution and intervention report		✓	✓	✓
● SEV® technical support		Email	Email telephone	Email telephone priority access
● Analysis and provision of an energy efficiency report		Quarterly	Monthly	Monthly
● Follow-up appointment		Annual	Half-yearly	Quarterly
● Detection and reporting of physical incidents affecting the network			✓	✓
● Advice on the optimum configurations of sensor profiles			✓	✓
● Energy recovery			✓	✓
● Adaptation of sensor settings to suit the client's wishes			✓	✓
● Response management with the client's technical team				✓
● Visit from an SEV® technician				✓
● Operational optimisation				✓

virtual CONNECTED PROJECT

15 solar light points

- LoRaWAN® network



500 light points

- incl. 120 pre-existent
- LoRaWAN® network/Zhaga sensors
- PLC network



5 cabinets

- 4G connectivity



STADIUM package

- Lighting management
- LoRaWAN® network

- *Watering
- *Leak detection
- *Communal areas



**options on request*



Lighting

A simple and intuitive
PLATFORM

to control your smart regions and
use data in real time.

SENSORS

for each use case, whatever the
communication protocol.

A range of
SERVICES

packages to build and deploy
your infrastructure according to
your needs.



This brochure is recyclable; it is printed
on uncoated paper.

As part of an eco-responsible approach,
all our brochures are eco-designed.

www.sev-e.com

