

SEVE N



SEV©
GROUPE RAGNI

CONNECTED SOLUTIONS
FOR SUSTAINABLE REGIONS





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SEV@

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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.



Smart mobility must be sustainable and utilize all existing tools to offer a better experience to its users while reducing environmental impact. It meets the individual and collective needs of users in accessibility, soft mobility, parking, safety, and more. It is connected, multimodal, green, gentle, understands traffic challenges, adapts to the city, and provides significant added value to users.

TRAFFIC MANAGEMENT

With the help of our platform, optimize traffic flow by anticipating risks and offering alternative routes based on real-time data. Analyze pedestrian and cyclist traffic and adapt your urban infrastructure for smoother and more diverse mobility.



PARKING

With SEV© Connect, access accurate and real-time information to ensure optimal parking management. Maximize traffic flow, reduce congestion and CO2 emissions, and improve user experience.



INFRASTRUCTURE MANAGEMENT

Whether it's raining or snowing, the SEV© Connect platform supports you for simplified and secure road management. By providing real-time updates, it enhances safety and enables quick interventions to keep roads in good condition.



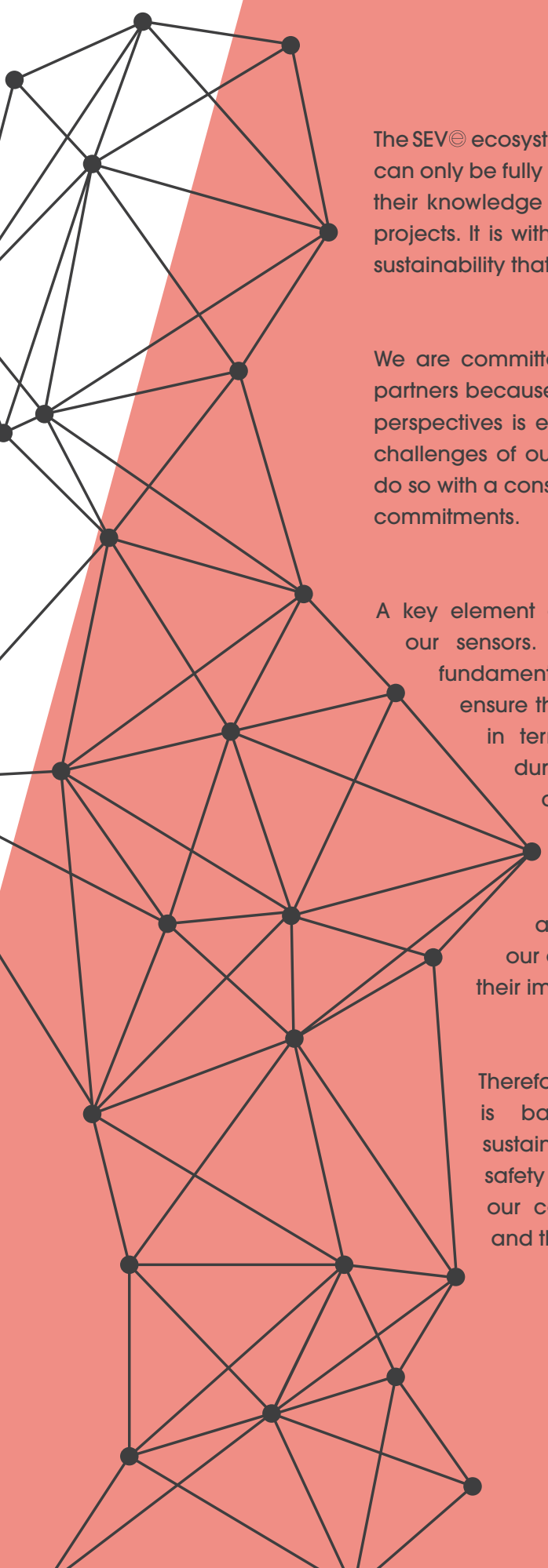
12,4%

of CO2 emissions worldwide come from road transport (Source: World Resources Institute - WRI)

53%

of traffic accident fatalities are vulnerable road users (Source: World Health Organization - WHO)

ECOSYSTEM



The SEV[©] ecosystem is based on a deep conviction: Sector objectives can only be fully achieved if all stakeholders work together, pooling their knowledge and resources to ensure the success of specific projects. It is with this spirit of collaboration and commitment to sustainability that we are building our business.

We are committed to constantly expanding our network of partners because we firmly believe that diversity of skills and perspectives is essential for innovating and addressing the challenges of our time. When we choose our partners, we do so with a constant focus on respecting our sustainability commitments.

A key element of our ecosystem is the selection of our sensors. These connected objects are the fundamental instruments of our activity, and we ensure that they meet the highest standards in terms of quality, performance, and durability. We also assess their compliance with the challenges of an innovative, evolving, and responsible territory. This means they are chosen to adapt to the changing needs of our environment while minimizing their impact on the planet.

Therefore, the SEV[©] ecosystem is based on collaboration, sustainability, quality, and safety so that our work benefits our company, our partners, and the planet.

Interoperability is at the heart of our platform. Our approach is based on the use of current web standards, which allow us to natively integrate a variety of APIs (Application Programming Interfaces), making our platform interoperable with other systems.

To ensure this interoperability, our research and development team constantly monitors the evolution of communication standards. The architecture of the SEVE Connect Platform is based on the creation of data models (templates), facilitating their constant retrieval. Data is always accessible, either in real-time through automatic periodic extractions or for use in third-party applications.

We strive to respect the data ownership of the client. Subsequently, our platform is open thanks to its Rest API, which allows data transfer to Open Data platforms and integration with third-party tools such as GIS, CMMS, and monitoring systems (hypervisor). Additionally, the application is also completely open, with dedicated connectors and the possibility of creating custom connectors. This enables robust integrations with a wide range of hardware, connectivity 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

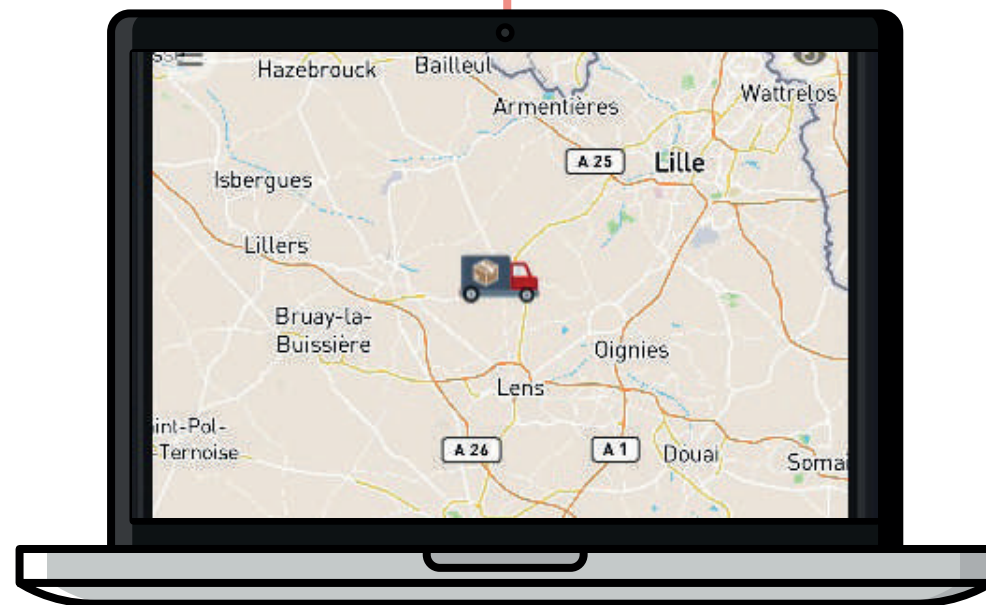
PLATFORM

By combining real-time monitoring, traffic flow analysis, and the use of advanced communication technologies, contribute to improving mobility, reducing travel times, and ensuring the safety of all road users.



TRAFFIC MANAGEMENT

Our platform offers an integrated management solution, promoting smoother traffic flow, pollution reduction, and sustainable urbanization.



Detection and Counting

Measure the flow of vehicles or pedestrians to optimize traffic management and urban or area planning.



Speed Estimation

Monitor vehicle speed to improve road safety and traffic efficiency.



Cycle Path Monitoring

Track the condition and usage of cycle paths to ensure safety and plan necessary improvements.



Queue Monitoring at Traffic Lights

Analyze queues at traffic lights to optimize signal timings and reduce traffic jams.



Congestion Detection

Identify congestion areas to enable proactive traffic management.



Wrong-Way Vehicle Alert

Quickly detect and report wrong-way vehicles to prevent accidents.



Vehicle Classification by Type

Categorize vehicles for accurate analysis and implementation of appropriate traffic policies.



Origin/Destination Analysis

Analyze vehicle routes to optimize itineraries and reduce travel times.



Information and Signal Panel Management (SLT)

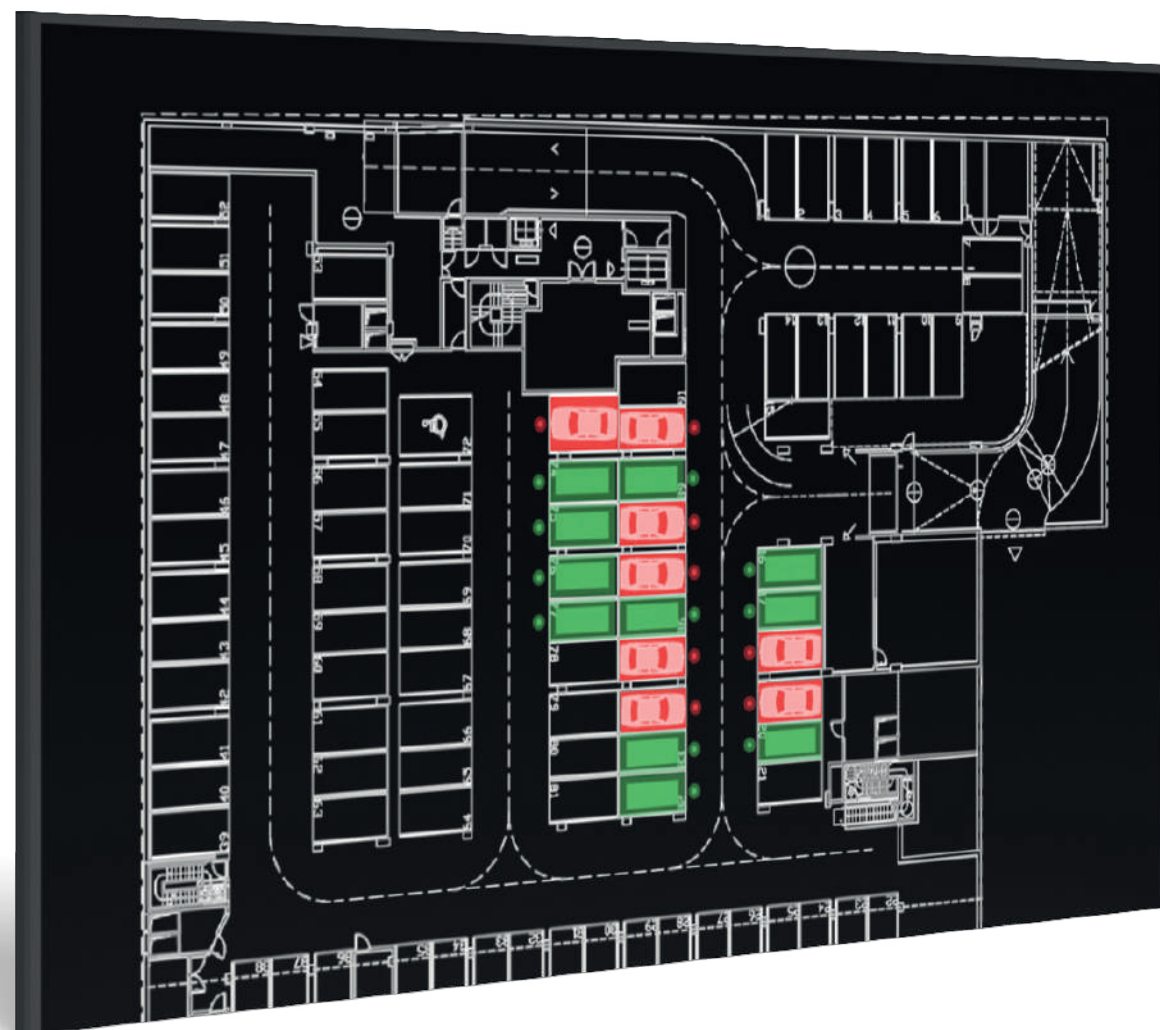
Control information panels and traffic lights for smoother and safer traffic flow.





PARKING

By integrating these features, our platform helps reduce CO₂ emissions and minimize the environmental impact of urban activities while improving operational efficiency and user comfort.



Free/Occupied Parking Spot Detection

Identify available parking spaces in real-time to reduce search time and improve parking efficiency.

Vehicle Categorization

Classify parked vehicles by type to optimize space usage and enforce specific rules (e.g., electric vehicles).

Illegal Parking Alert

Report illegal or obstructive parking to enhance traffic flow and safety.

Occupancy Rates

Analyze parking occupancy rates for better management and planning of parking infrastructure.

Minute Stop Post Monitoring

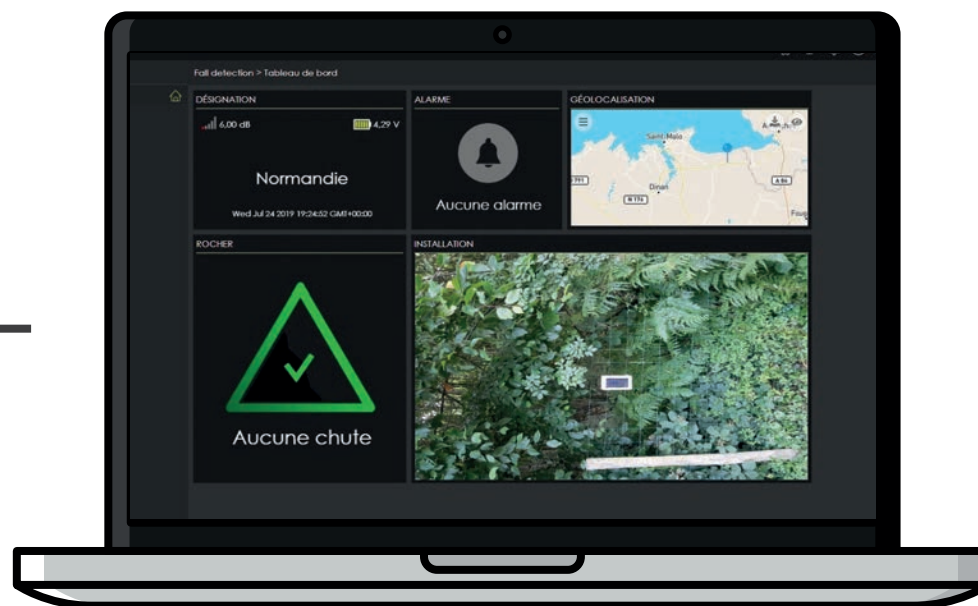
An effective solution to streamline downtown parking and prevent vehicles from monopolizing limited-duration parking spaces.





INFRASTRUCTURE MANAGEMENT

The SEV[®] Connect platform offers numerous benefits for urban infrastructure management by enhancing maintenance and road safety. Its complementary features increase operational efficiency while promoting safe, sustainable, and responsible mobility.



Road Conditions

Monitor and report road conditions to enhance maintenance and road safety.



Connected Station

Provide charging stations for electric bikes and phones to promote sustainable mobility.



Charging Station

Deploy charging stations for electric vehicles to support the transition to sustainable mobility.



Shade Structure

Install shaded structures to provide protected areas from the sun and reduce urban heat islands.



3

OUR OFFER

Our commitment is materialized in the integration of complete, sustainable, and innovative solutions, services, and products. Our goal is to meet the expectations of all our partners by supporting them from the definition of their project to territory management.

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.



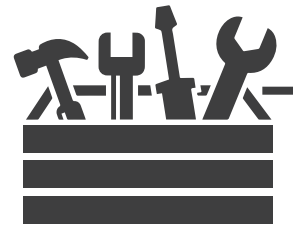
Energy

Distribution network management, recharging stations, photovoltaic, etc.



Buildings

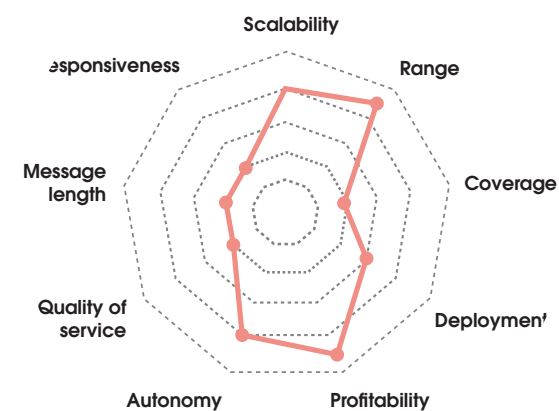
Air quality, temperature, leak detection, lighting, building management, etc.



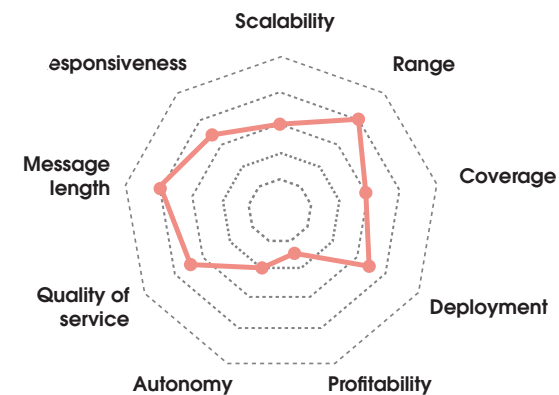
WHAT CRITERIA FOR SELECTING AN IOT NETWORK?

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.



LoRaWAN®



4G

OCP, RJ45, Fibre

Other Available Technologies

PRODUCT SELECTION

SEV® products are carefully selected to meet the most demanding standards in terms of quality, performance, and durability. We evaluate their suitability for the challenges of an innovative, evolving, and responsible territory. Our wide range of products is designed to adapt to a variety of projects.



INTELLIGENTE VIDEO ANALYSIS



DÉTECTION SENSOR



MULTI-USAGES
SENSOR



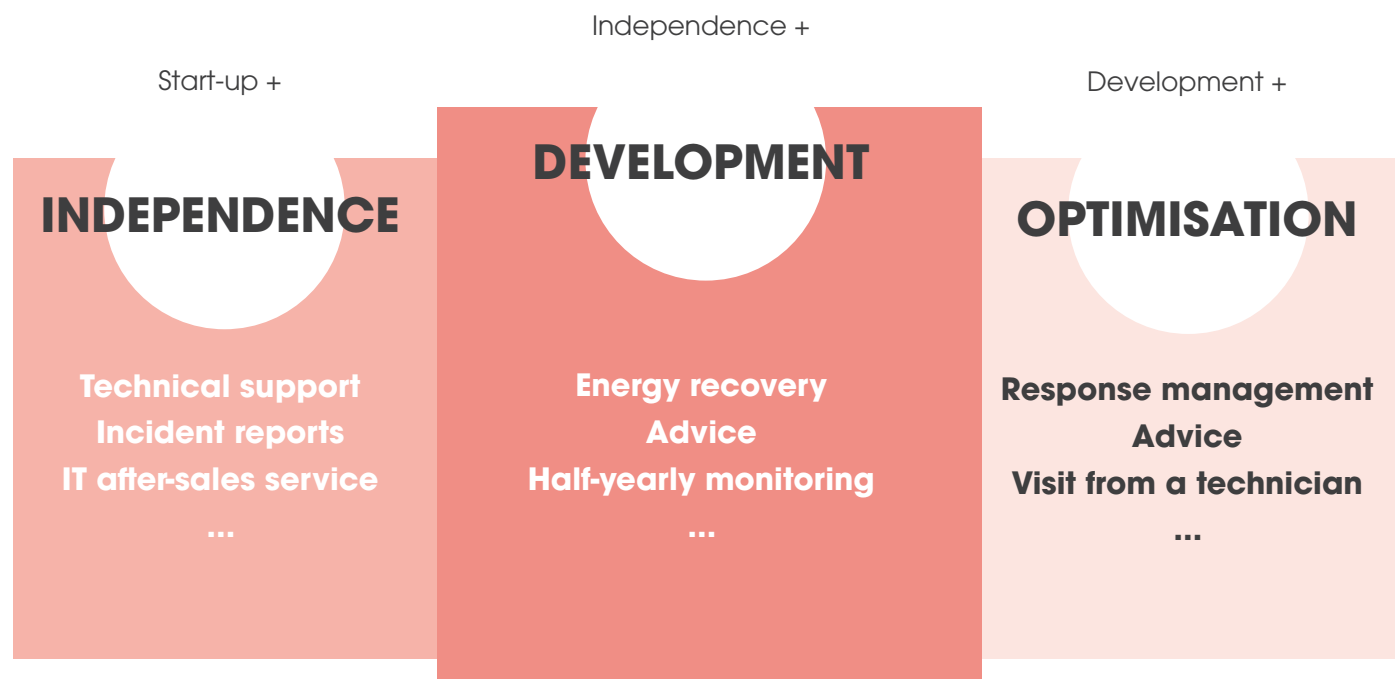
ULTRASONIC
SENSOR



MINUTE
STOP POST

SERVICES OFFERING

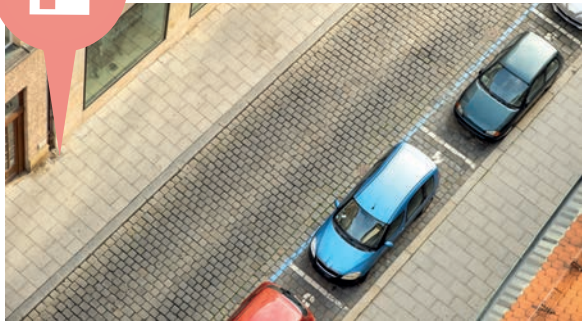
Our packages, simple and flexible, evolve according to your needs, offering you comprehensive support ranging from technical support to after-sales IT service, through energy recovery or intervention management.



	START-UP	INDEPENDENCE	DEVELOPMENT	OPTIMISATION
Reporting of sensors on the computer server	✓	✓	✓	✓
Initial network setup	✓	✓	✓	✓
Presence of a SEV® technician during installation	✓	✓	✓	✓
Access to the SEV® Connect platform	✓	✓	✓	✓
Functional guarantee of the communication network		✓	✓	✓
Detection and reporting of incidents in the communication network		✓	✓	✓
Incident alert to the client		✓	✓	✓
Sending information to our after-sales IT service		✓	✓	✓
Resolution and intervention report		✓	✓	✓
SEV® technical support		Email	Email telephone	Email telephone priority access
Analysis and sending of consumption report		Quarterly	Monthly	Monthly
Follow-up appointment		Annual	Half-yearly	Quarterly
Detection and reporting of physical incidents in the network			✓	✓
Tips on optimal irrigation profile configurations			✓	✓
Resource valuation			✓	✓
Adaptation of sensor parameters according to customer preferences			✓	✓
Intervention management with the client's technical team				✓
Intervention of a SEV® technician				✓
Operational optimization				✓

virtual CONNECTED PROJECT

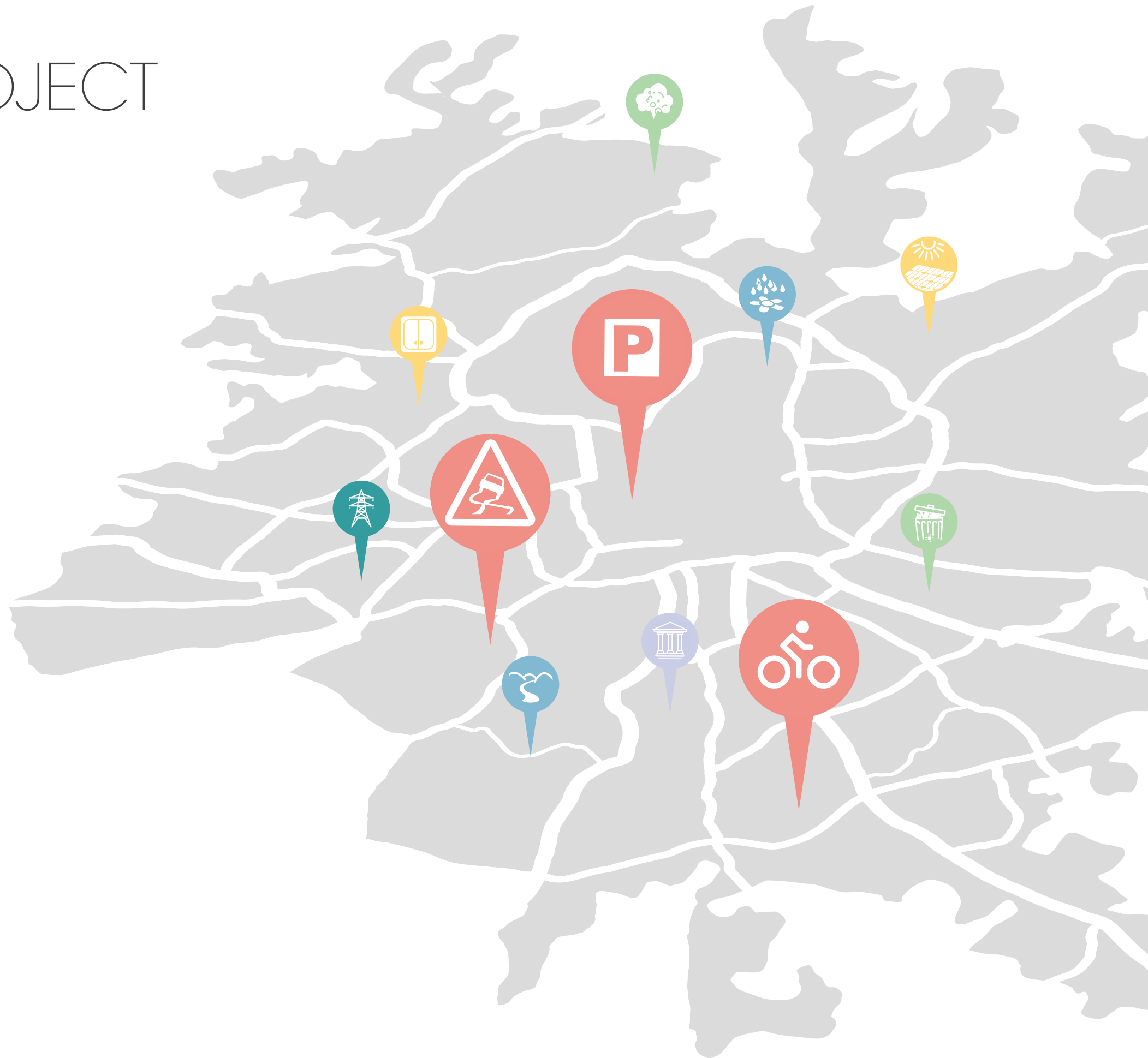
10 Detection Sensors • LoRaWAN® network



Intelligent Video Analysis • On existing cameras • LoRaWAN® network



2 ultrasonic sensors **1 connected station** • 4G connectivity • LoRaWAN® network



Mobility

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



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