SEVE
GROUPE RAGNI

CONNECTED SOLUTIONS
FOR SUSTAINABLE REGIONS

entreprise
À MISSION

01
SEVe

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.

Pollution, waste, noise, odors, pressure, humidity...
Analyzing the environment means taking care of those who live in it.
Make your territory a safer and healthier place by implementing real-time environmental intelligence.

AIR QUALITY

Deliver advanced environmental and situational intelligence to take action not only on air quality, but also on health.

WASTE MANAGEMENT

Reduce the human environmental footprint, decrease the volume of waste, increase sorting and recycling rates, and minimize the energy required for waste collection…

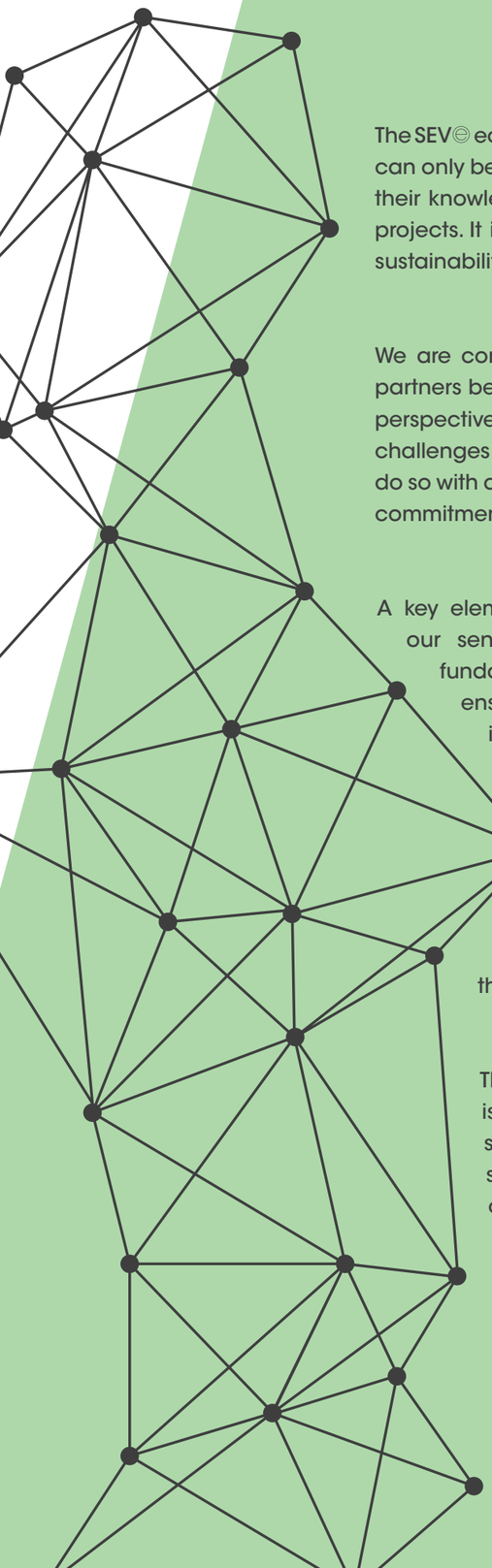
SOUND ENVIRONMENT

Analyze the soundscape, monitor noise levels, and reduce related disturbances.

92%
of the world's population lives in areas that exceed air quality guidelines.
(Source: World Health organization)

In 2020, the world generated approximately
2,01
billion tonnes of municipal solid waste.
(Source: World Bank)

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

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.

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

GROUPE RAGNI

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.

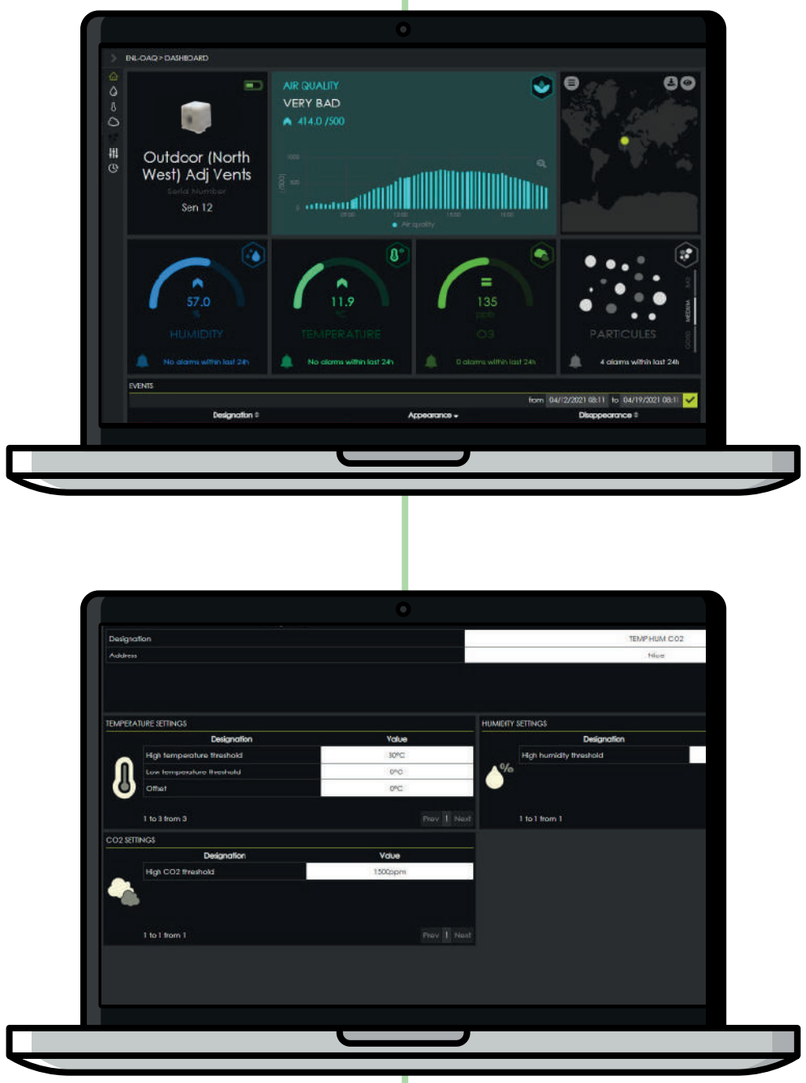
2

PLATFORM

Improve quality of life, public health, and resource efficiency through accurate data — an innovative approach that supports sustainable and resilient urban development.

AIR QUALITY

Our platform offers a comprehensive smart technology solution that monitors environmental and health-related factors, identifies sources of health and safety risks, and addresses them through programmable actions.



Pollutant detection
Pollutant detection enables the monitoring of harmful substances in the air, helping to protect public health and reduce environmental impact.

Particle and allergen quantification
Quantifying airborne particles and allergens helps identify and control sources of particulate pollution, improving the quality of life for individuals with allergies and respiratory conditions.

Weather data
Weather data is essential for understanding and forecasting air quality variations, allowing for preventive actions and effective management of pollution episodes.

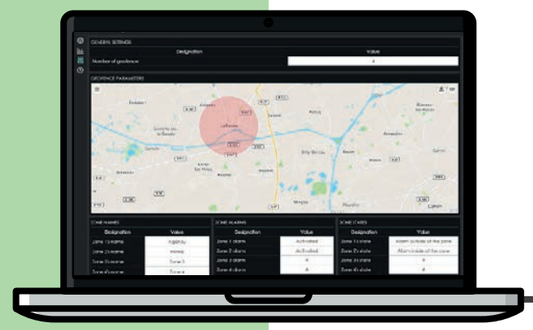
Health risk detection
Detecting health risks related to air quality enables swift action to protect the population from the harmful effects of air pollution.

Odor level monitoring
Monitoring odor levels helps identify sources of olfactory nuisances, thereby enhancing residents' comfort and quality of life.

Pollen
Tracking pollen levels in the air provides alerts and guidance for allergy sufferers, reducing health impacts and improving overall well-being.

WASTE MANAGEMENT

With our advanced management features, collect data, organize pickups, adapt management methods or routes, and save costs.



Fill level and alerts
Monitoring fill levels helps prevent overflows while improving the efficiency of waste collection.

Location
Accurate localization of containers and collection points facilitates logistical management and enables optimal planning of collection operations.

Route optimization
Optimizing collection routes reduces operational costs, saves fuel, and lowers greenhouse gas emissions, all while ensuring more efficient service.

Detection of bulky items and illegal dumping
Automatic detection of bulky waste and illegal dumping enables rapid response, maintaining the cleanliness and aesthetics of public spaces.

Organic waste management
Connected management of organic waste improves sorting and recovery of organic materials, contributing to reducing landfill waste and supporting compost or biogas production.

SOUND ENVIRONMENT

By integrating these features, our platform helps analyze the sound environment, particularly for residents near roads, railways, airports, ports, and certain factories or industrial zones.

Noise level monitoring
Measure and analyze sources of noise pollution to identify them and take appropriate action. Over 15,000 sounds detected and evaluated using our connected solutions.

Bell tower
Simplify the management of your buildings by programming your bell tower equipment and optimizing their maintenance and operation.

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.

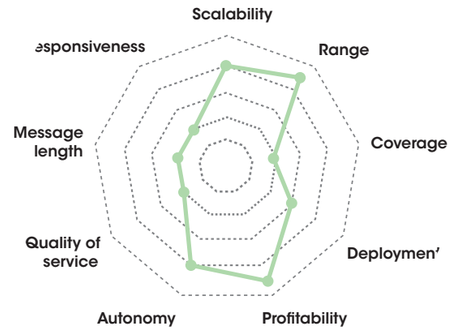
Water
Network management, watering, monitoring water courses

Mobility
Parking, traffic levels

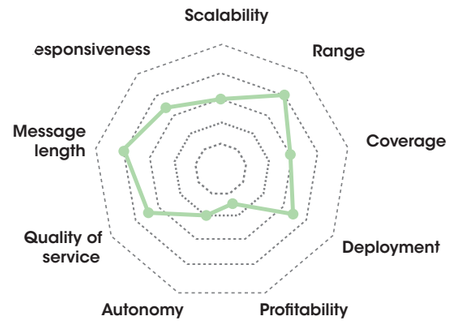
Environment
Air quality, waste management, etc.

Energy
Distribution network management, recharging stations, photovoltaic, etc.

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



LoRaWAN®



4G

OCPP, RJ45, Fibre

Other Available Technologies

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 NbIoT or a 4G network.

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.

OUTDOOR AIR **SENSOR**

POLLEN **SENSOR**

REMOTE READING **PROBE**

FILL LEVEL **SENSOR**

The products shown are examples. SEV©'s offering is tailored to the needs of each project.

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

Technical support
Incident reports
IT after-sales service
...

Independence +

DEVELOPMENT

Energy recovery
Advice
Half-yearly monitoring
...

Development +

OPTIMISATION

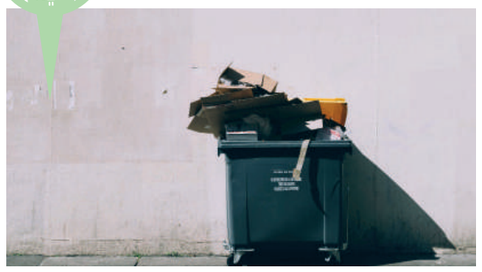
Response management
Advice
Visit from a technician
...

	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				✓

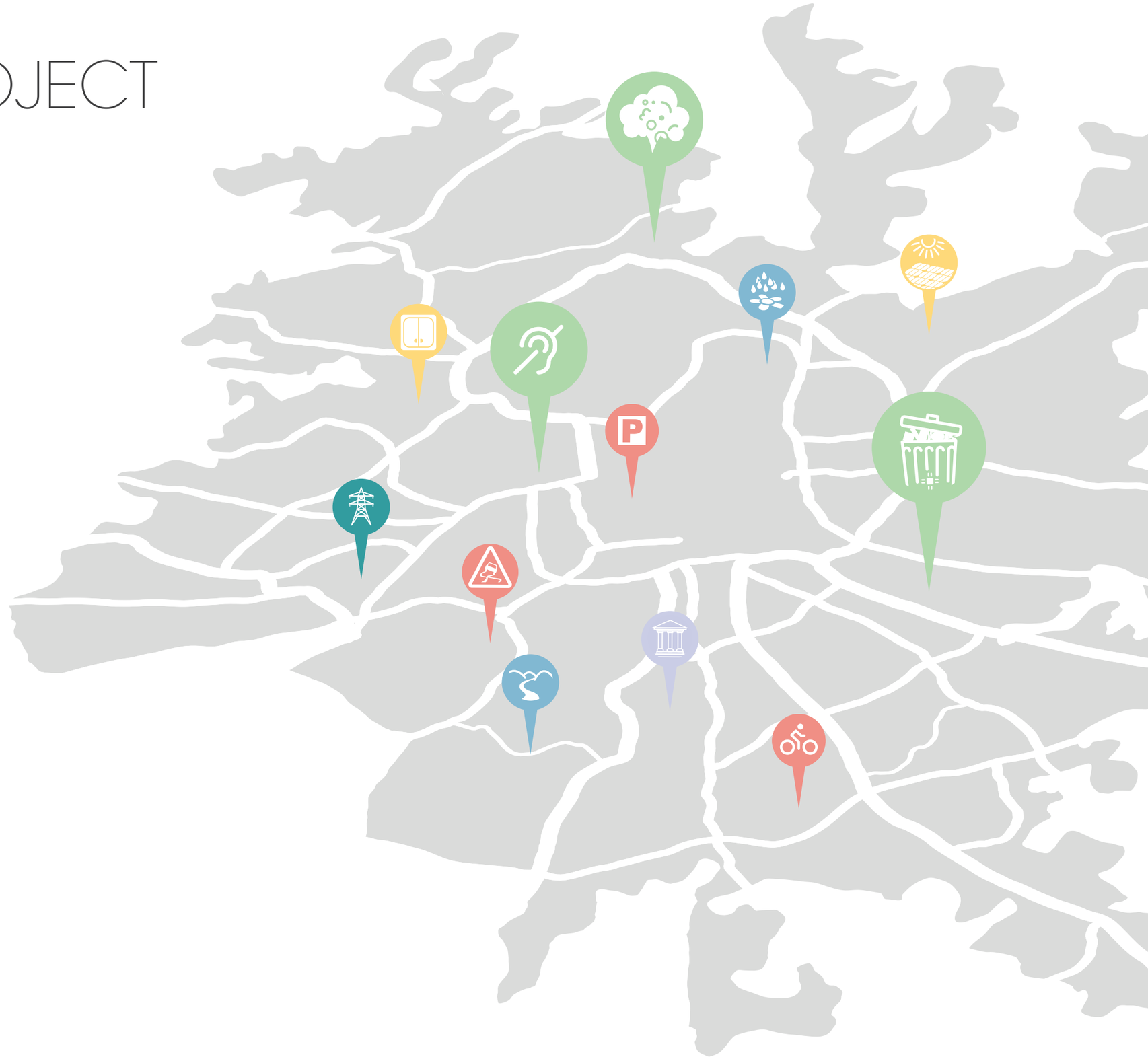
virtual
CONNECTED PROJECT

5 outdoor air sensors
• LoRaWAN® network

30 fill level sensors
12 remote reading probes
• LoRaWAN® network



3 sound sensors
1 bell tower module
• 4G connectivity
• LoRaWAN® network



SINGLE platform
to meet all your needs

Environment

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