

VIVAVIS

DECODING THE FUTURE



SMART DISTRICT SOLUTIONS

Smart Cities become Reality

Urbanization, climate protection targets, mobility, renewable energies and energy efficiency – these are just a few of the interacting issues that need to be considered, especially in municipalities, neighbourhoods and cities. As a result, business models and products in the energy sector are becoming increasingly complex. They have to comply with many aspects and regulations and ultimately offer added value to the users, such as more comfort in everyday life; furthermore, they need to be competitive in the long run.

Visionary, open and flexible IT infrastructures are required in order to be able to offer dynamic and intelligently adaptable products and services. As the basis for such digitized business models, information from various sources, sensors and meters must be automatically captured, standardized, interpreted and communicated across different systems. The relevant data is made available to end users via a portal or other mobile applications.

The **Internet of Things (IoT)** offers many business opportunities. The challenge here is to integrate new technologies into existing business processes and harmonize them with existing technologies while taking into account the required security standards. As a rule, existing infrastructures must be used intelligently and gradually reorganized and digitized. This requires software and hardware solutions which can be set up and expanded with the same degree of flexibility. Due to wide range of tasks which, when you look at them individually, are very specialized indeed, several coordinated IT systems are required in one smart district solution. A central database as Single Source of Truth is elementary for this purpose, and it enables efficient meter/sensor-to-cash processes.

VIVAVIS meets all these requirements. The **DECODING IoT solutions** from **VIVAVIS** decode complex processes, translating them into intuitive application for **intelligent public services in smart districts**.

Challenges in Smart Districts

Energy Management

Digital Business Models

Smart Building

Decentralized Power Generation

E-Mobility

IoT Sensors and Actuators

Heterogenous Bay Controllers

Heterogenous Communication Protocols

Quality of Data

LoRaWAN/NB-IoT

Environmental Management

Contracting

Site Networks / Client's Systems

Tenants' Electricity Supply

Submetering

Capacity and Load Management

Intelligent Measuring Systems

Sector Coupling

Customer Acceptancy

Automation

Energy Efficiency Directive

Energy of Buildings
Performance Directive

VIVAVIS
Smart District Solutions

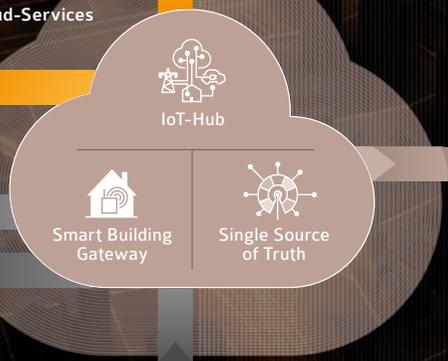
BASIS

ANALYSIS

OPTIMIZATION



Cloud-Services

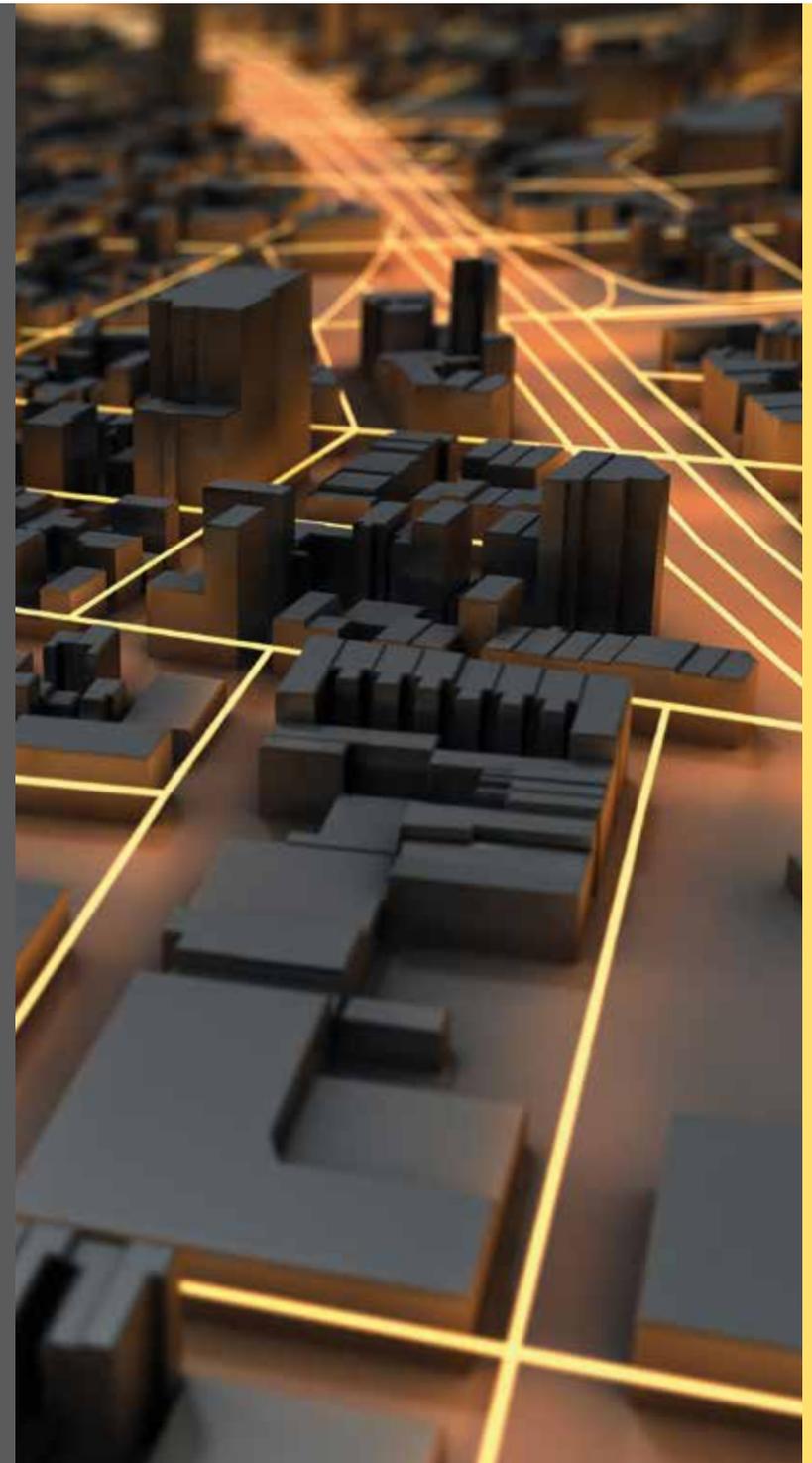


VIVAVIS CAN

VIVAVIS combines our competencies and our portfolio around infrastructures and infrastructure-related IoT topics. We develop solutions that decode complex processes, translating them into intuitive applications: „**DECODING**“. Intelligent building complexes and critical infrastructures require comprehensive, data-driven **DECODING IoT solutions** which can be easily and quickly adapted and expanded – both efficiently and effectively.

What makes **VIVAVIS** special for you is that everything comes from a single source. A common and comprehensive modular system provides full modularity and interoperability. With **VIVAVIS**, you can create tailor-made concepts, starting with the design of a business model through to its implementation. Existing assets and their associated information can be easily integrated, thereby enabling accurate mapping of business models. The complete digital solution **VIVAVIS** reduces complexity while offering maximum flexibility.

VIVAVIS is your partner – starting with a concept of the system through to the required field and system technology to modular overall solutions. Anything goes, but nothing is compulsory! You only use what you really need.



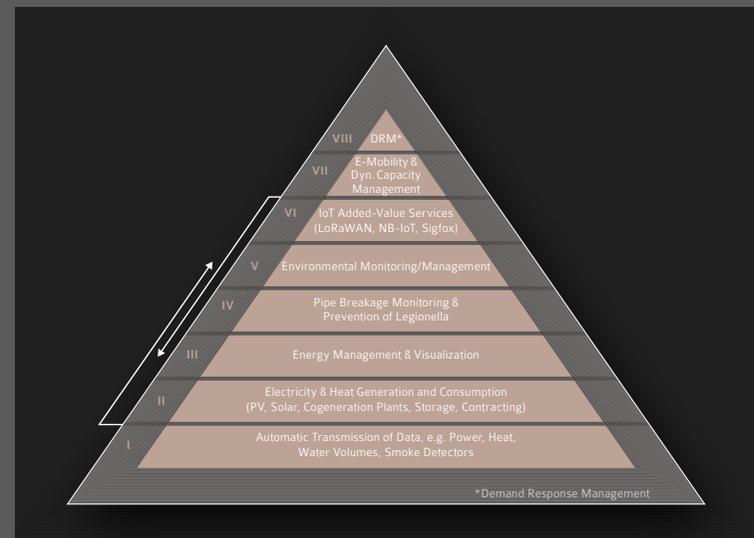
VIVAVIS OFFERS

1 Automatic Data Transmission from Meters and Sensors

The collection of data through bay controllers is the basis of smart districts and buildings. This includes both classic metering as well as submetering. The data of the different meters, partly remote-readable meters and a multitude of IoT sensors must be collected, validated and standardized. **VIVAVIS** enables you to collect all data from heat meters, heat cost allocators through to temperature and CO2 sensors in the smart building gateway **enQube**, transferring them to the central **IDSpecto.DAYOS** data platform (Single Source of Truth).

2 Integration of Electricity and Heat Generators and Storage Facilities

You can also use **enQube** to record data from thermal power stations, PV plants or other contracting installations and transmit them to the **IDSpecto.DAYOS** data hub. Especially with a view to an increasingly decentralized energy generation and the climate protection targets, you can secure your investments for the future.



3 Visualization and Management of Properties

The **Efficio** energy management enables not only the mapping of standards of the DIN ISO 50001 series, but also comprehensive analyses of the system inventory and of consumption behaviour. Questions like “Is the cogeneration plant operating efficiently?”, “Are there any faults in the system?” or “Will I be able to achieve my energy saving targets?” can thus be answered. Benchmarks between systems and buildings can easily be carried out. The **IDSpecto.enVIEW** customer portal provides you with data on your own energy consumption, the tenant’s share in electricity consumption or your CO2 footprint, as well as as giving valuable tips on how to save energy.

4 Pipe Breakage Monitoring and Prevention of Legionella

Even simple value-added services, like pipe breakage monitoring or the prevention of legionella and mould, can be implemented either via **enQube** or centrally in the **VIVAVIS** cloud.

5 Environmental Management and Monitoring

Via a detailed follow-up of measures, Efficio also enables the implementation of EMAS and DIN ISO 14001 standards. By supplementing the system by additional decentralized sensors, e.g. for measuring noise, temperature, air humidity, carbon dioxide, nitrogen oxide and particulate matter, **VIVAVIS** can also be used to map particular applications, like intelligent environmental zones or a district climate.

6 IoT Value-Added Services based on LPWAN

The IoT expansion of the Gateway technology by **LoRaWAN**, as well as the IoT head-end system for **IDSpecto.DAYOS** enables the visualization of a wide range of additional applications in **VIVAVIS**, such as, for instance, surveillance of parking spaces, monitoring of the filling levels of garbage bins, or the management of cemeteries. Battery-powered sensors enable long ranges, penetrations and service lifecycles at affordable prices. Furthermore, **ACOS NMS** includes an asset management system that takes into account different types of batteries, lifecycles, designs and technical data of sensors, i.e. it enables you to benefit from a comprehensive digital asset lifecycle management.

7 E-Mobility and Dynamic Capacity Management

The management of smart districts also covers the topics E-mobility and car sharing. These two issues require charging infrastructures to which today’s power grids are, as yet, not adapted. The **VIVAVIS** capacity management function, however, is already providing solutions to this problem.

8 Demand Response Management

In the future, market-oriented load management will become the key discipline for the management of districts and smart cities, not only with regard to power supply, but also with a view to heating in terms of integrated energy/sector coupling. A combination of the two expert systems **Optimo** and **HIGH-LEIT** provides ideal solutions.



WE ARE VIVAVIS

As pioneers, we shape the future of digital infrastructures, driving digitization forward and helping to master Big Data. Our technologies and services enable customers to open up new and sustainable areas of business.

Our unique expertise and our comprehensive service are:

Sustainable

In total, we can rely on a total of 150 years of know-how from our partners in IDS Group

We are proud of our long-standing partnerships with clients from a variety of different sectors: energy suppliers, industry, housing and municipal companies

Integrated Concepts

Hardware and software plus service and support – all from one source

Future-Proof

Interoperable, modular and scalable
Cloud and mobile first
Advanced Analytics-ready

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