VIVAVIS
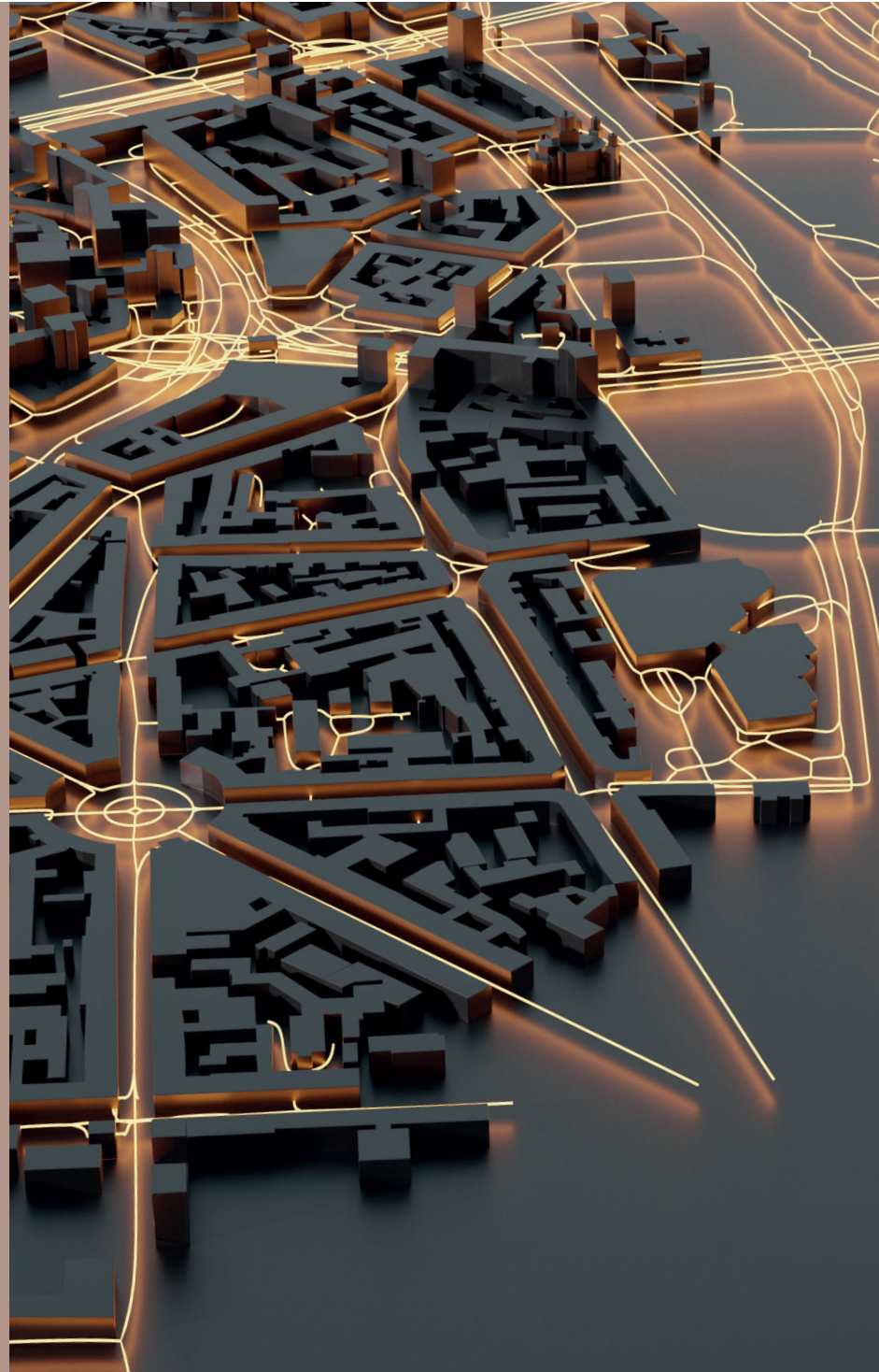
DECODING THE FUTURE

POWER GRID IN MOTION

The energy turnaround is leading to an increase in the proportion of electricity fed into the grid from wind energy and photovoltaic systems, as well as an increasing number of electric vehicles. At the same time, a reliable energy supply must be guaranteed always and everywhere. The **Internet of Things (IoT)** offers many possibility to synchronize the generation, storage, grid management and consumption of power across one's own power grid boundaries, thereby converting it into a smart grid which integrates all players on the electricity marked and enables homogenous operation of the grid in terms of time and space.

Here, the challenge is to balance the volatility in low- and medium-voltage grids which arise, for instance, from the integration of renewable energy producers. In the power supply sector, the need for a flexible supply and demand is increasing steadily. Consequently, the SCADA system becomes a capacity optimization system, ensuring reliable power grid operation and optimized operations schedules.

Dynamic power grids require transparent and flexible IT infrastructures. In a capacity optimization system, information from different sources, sensors and meters must be automatically recorded, standardized, interpreted and provided to users or to other systems. This requires soft- and hardware that can be flexibly designed and expanded. Ultimately, it must be possible to control all power generators, consumers or storage facilities clearly and easily.

VIVAVIS is ideally suited to all these challenges. The **DECODING IoT solutions** of **VIVAVIS** decode complex processes, translating them into intuitive applications for the intelligent power grid of the future.

Challenges in Power Grid Control of the Future

Power Grid Stability

Complexity

Grid Expansion

Decentralized Generators

E-Mobility

Development of
New Business Models

Grid Forecasts

Safety

Different Systems

Interfaces

Monitoring of Low-Voltage Systems

Fluctuations in the Grid

Controlling Data Volume

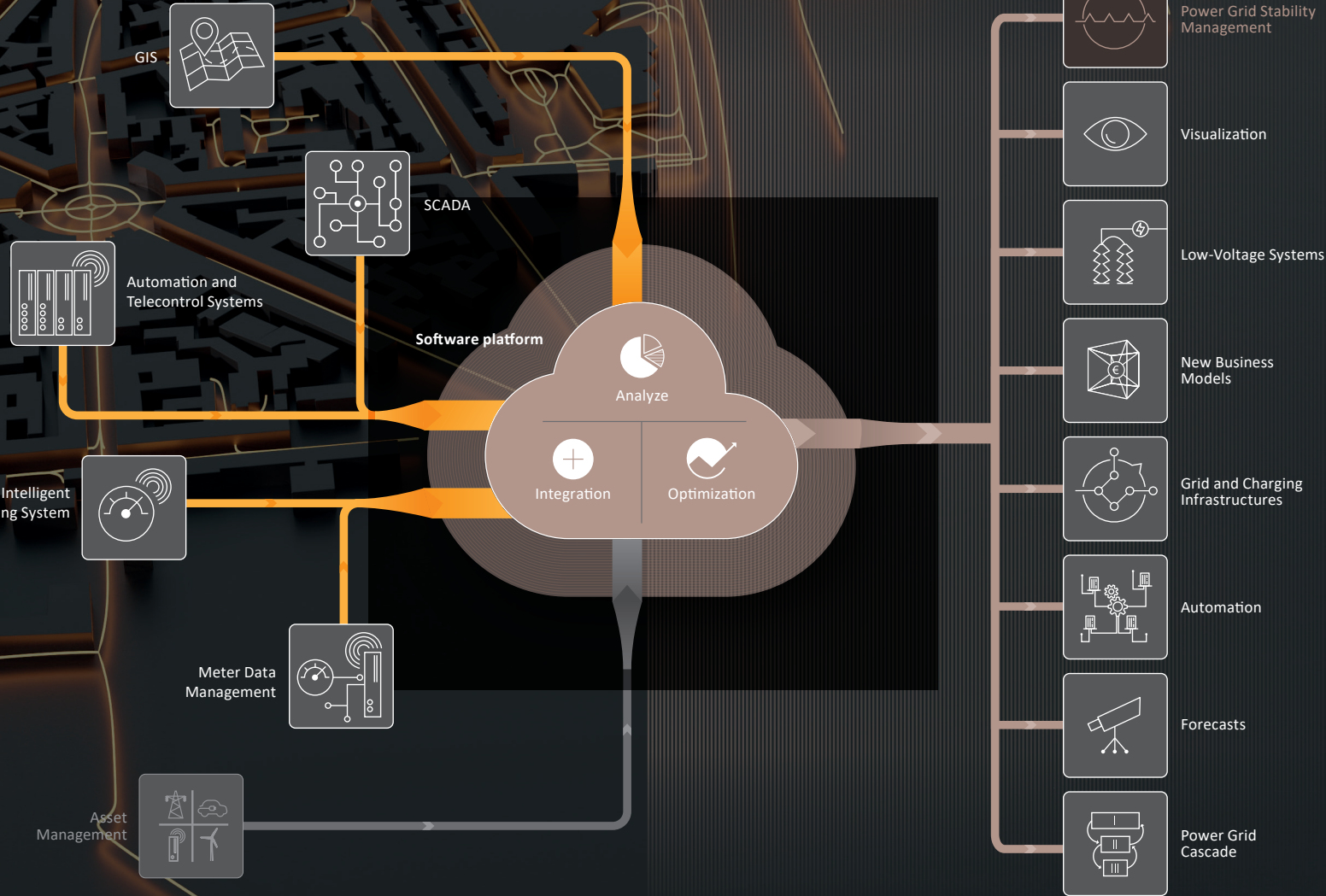Cost Pressure

Documentation

Automation

Communication between TNOs – DNOs

VIVAVIS
Capacity Optimized

BASIS

ANALYSIS

ADDITIONAL VALUES

GIS

SCADA

Automation and Telecontrol Systems

Software platform

Intelligent Measuring System

Meter Data Management

Asset Management

Analyze

Integration

Optimization

Power Grid Stability Management

Visualization

Low-Voltage Systems

New Business Models

Grid and Charging Infrastructures

Automation

Forecasts

Power Grid Cascade

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 network control requires comprehensive, data-driven **DECODING** solutions that 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 **Decentralized Power Generation**

Keep your power grid balanced – even if the number of decentralized producers is constantly increasing. To do this, you need to identify potential risks in order to avoid them or intervene quickly in advance. This goal can only be achieved by using suitable hard- and software and through solutions which optimally connect decentralized power generators to the SCADA system and, if necessary, reduce the feed-in power.

2 **E-Mobility**

With intelligent power grid and charging infrastructure management, you are optimally prepared. It enables you to quickly detect and rectify faults and overloads, monitor charging points, maintain the total charging capacity and to identify the status of assets. The integration of an asset management system is also possible.

3 **Operation and Monitoring of the Low- and Medium-Voltage Grid**

SCADA systems, telecontrol and automation systems as well as intelligent metering systems record the necessary process data. To enable you to easily control all power grid sectors via your control room, consumption and feed-in data are compiled, analysed and validated, both at individual transfer points or across the entire power grid area.

4   Evaluation of Power Grid Conditions

Sustainable SCADA systems are capable of evaluating and drawing conclusions. The status of your power grid can be visualized, for instance, in the form of a traffic light – also for each grid sector or transformer substation, if necessary.

5   **Power Grid Cascade (VDE-AR-N 4140)**

Owners of power grids are responsible for the system security of the supply network and must cooperate even more closely with other grid operators. The SCADA system organizes the implementation and documentation of feed-in and shut-off measures as well as the necessary exchange of data.

6   **Mobile Handling**

In the event of a fault, the SCADA system emits an alarm and automatically creates an order for technical staff, sending it directly to their mobile terminal. Via an application in the asset management system, you can quickly identify the relevant systems and eliminate the fault.

7   **Dynamic Data Exchange**

Whether it's SCADA, metering or GIS systems: In the future, it will be standard for all components to communicate with one another via MessageBus and a specially developed software platform, without the need to develop a special software for that purpose. Furthermore, the software platform also enables the compilation and evaluation of data (Advanced Analytics).

For this purpose, we offer you

- our **HIGH-LEIT** SCADA system including feed-in management function as well as other functions for load-flow calculation, short-circuit current calculation, state estimation and an analysis of of grid reliability

- Telecontrol and automation technology from the **ACOS 7** series

- Solutions for the automation of local transformer substations and the connection of decentralized power generators

- Expanded control box and **CLS Operator**

- The **ACOS 300** series of protection equipment

- Asset management system **360° Asset Management** including mobile solution

- **CAIGOS GIS** geo-information system

- **IDSpecto** metering data management system

WE ARE VIVAVIS

We are blazing a trail in the field of future digital infrastructures, drive digitization and help to master big data. By means of our technologies and services, our customers are able to develop new and sustainable business fields.

Benefit from our unique expertise and our extensive service!

Sustainable
More than 150 years of knowledge gained by all **VIVAVIS** companies involved

Long-standing partnerships with companies in energy, industrial, housing and municipal sectors

Holistic
Hardware, software, services and support from one source

Future-proof
Interoperable, modular and scalable
Cloud and mobile first
Ready for Advanced Analytics

Your contact

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