



SMIGHT GRID2

Upgrade your distribution grid

DATA GAP IN THE DISTRIBUTION GRID

The energy transition and the growth of e-mobility are presenting grid operators with new challenges. As a result, the demands placed on the low-voltage grids are rapidly rising. Grid operators need to know where and how the load is changing in order to enable them to expand and operate their grids effectively. Robust and extensive recording of data from the low-voltage grid is therefore essential for mastering the challenges of the energy transition

THE SOLUTION

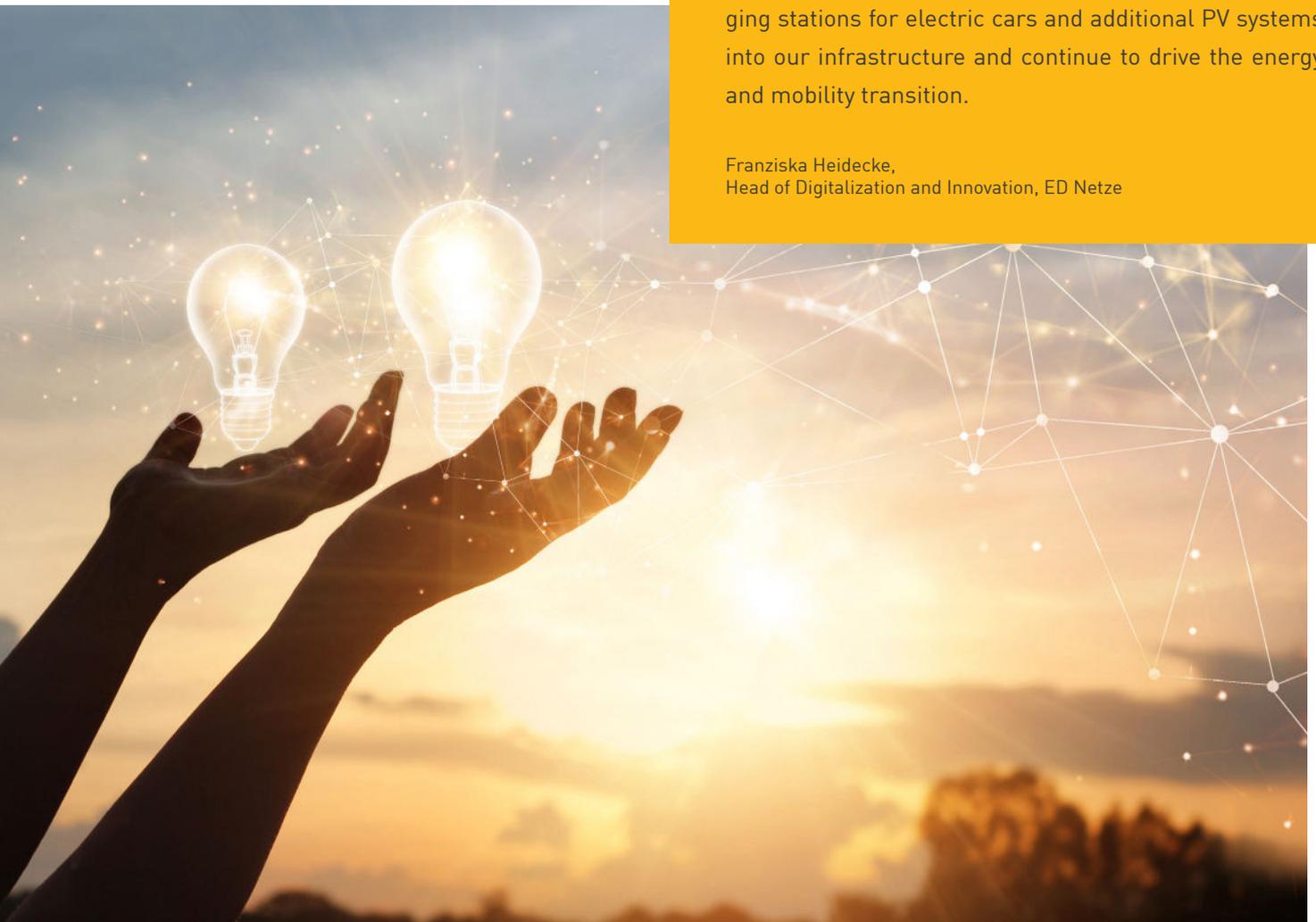
SMIGHT Grid2 addresses this need and uses patented sensors and IoT technology to measure the current and voltage at local transformer stations and cable distribution cabinets. Grid operators can thus determine with geographic precision over a wide area and in real time where electricity grids are reaching their capacity limits. Based on this knowledge, the necessary grid expansion can be efficiently planned and the grid managed as required. SMIGHT Grid2 thus provides the basis for guaranteeing optimal grid load and a successful energy transition.

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SMIGHT Grid2 shows us where power grids are reaching the limits of their capacity.

The obtained data allows us to expand specific sections of our grid in order to optimally integrate further charging stations for electric cars and additional PV systems into our infrastructure and continue to drive the energy and mobility transition.

Franziska Heidecke,
Head of Digitalization and Innovation, ED Netze



ALL PROCESSES COVERED WITH SMIGHT GRID2



#1 **Sensors** record the effective feeder-specific value of the current and the flow direction once a minute for all four phases. The measurements are taken synchronously across all points within the grid. Installation is possible in local transformer stations and cable distribution cabinets with no need for a separate power supply.

#2 In addition to the current values, a **gateway** is used to measure the single-phase busbar voltage. The data is read every 15 minutes and securely transmitted via the mobile communications network to the SMIGHT IQ IoT platform. SMIGHT also constantly performs functional monitoring and software update tasks.

#3 The **SMIGHT IQ Cloud** stores the data in compliance with data protection regulations and displays the current and voltage curves in graphic form on a web platform. Deviations and threshold violations are identified. Data can be transmitted via an interface to applications used for performing grid calculations as well as other systems.

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„Measurements in the low-voltage grid are rather rare and there can be a few hidden stumbling blocks. **We can successfully circumvent them with SMIGHT Grid.** We were impressed with the fast and space-saving installation of the hardware and the robust data recording and transmission.“

Dr. Arvid Blume,
Commercial Managing Director, Stuttgart Netze

THE ADVANTAGES OF SMIGHT GRID2



PATENTED POWER GRID SENSOR TECHNOLOGY

The sensor technology developed in-house can be quickly and easily integrated into existing infrastructure. One SMIGHT Grid2 sensor is used for each feeder. The current's effective value is determined by means of a four-phase recording taken from the high-frequency sampling of the flow. In conjunction with the voltage synchronously measured in the SMIGHT Grid2 gateway, the load flow direction can also be identified.



PLUG & PLAY

The installation of the hardware in a local transformer station can be completed in less than 60 minutes by your company's own staff while operations continue. Support is available to the technician in the form of a specially developed app. This makes the system particularly suitable for use across a wide area.

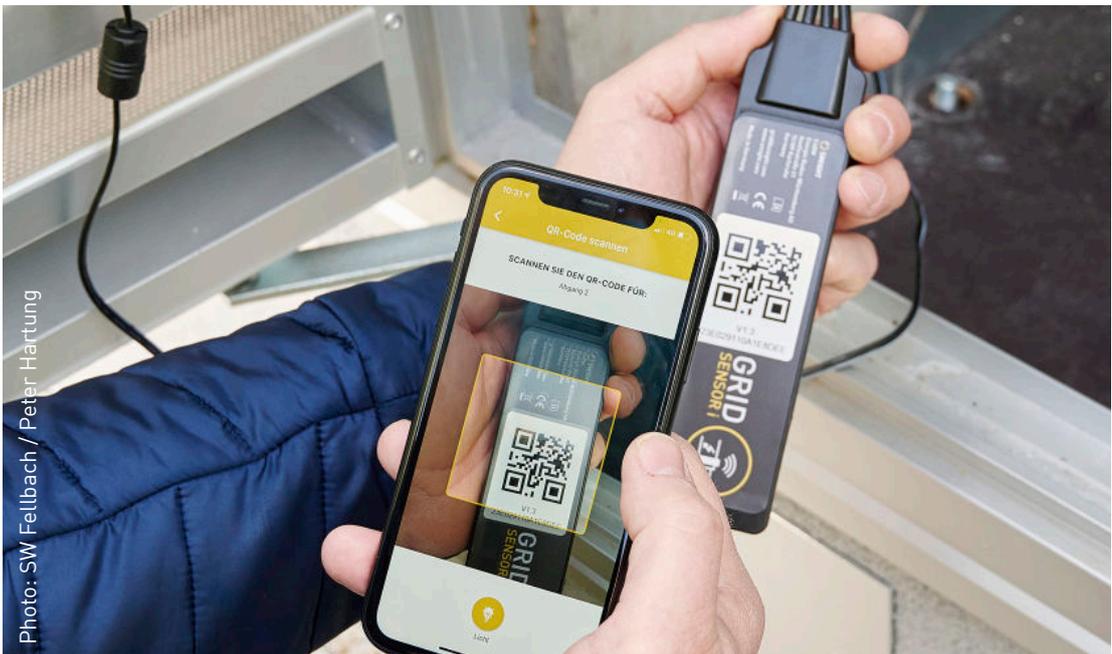


Photo: SW Fellbach / Peter Hartung



DATA MANAGEMENT

With the SMIGHT Grid2 gateway, the current and voltage curves are transmitted securely and continuously via the mobile communications network. We secure the data on our SMIGHT IQ IoT platform, which is hosted in Germany, and make it available to you for immediate use. You can view and evaluate the data online via a password-protected web portal. We notify you by e-mail if your set threshold values are exceeded. Evaluation modules can usefully interpret the measured values and generate statements on the load situation at transformer level or feed-in behavior, for example.



INTEGRATION AND ANALYSIS

It is really easy to connect elements such as grid calculation tools using a programmable standard interface. This means that the data can be used as a basis for improved grid models and simulations, usually without any IT complexity. Our experts look at the data together with you to generate direct added value and determine possible operational uses.



ALL FROM ONE SINGLE SOURCE

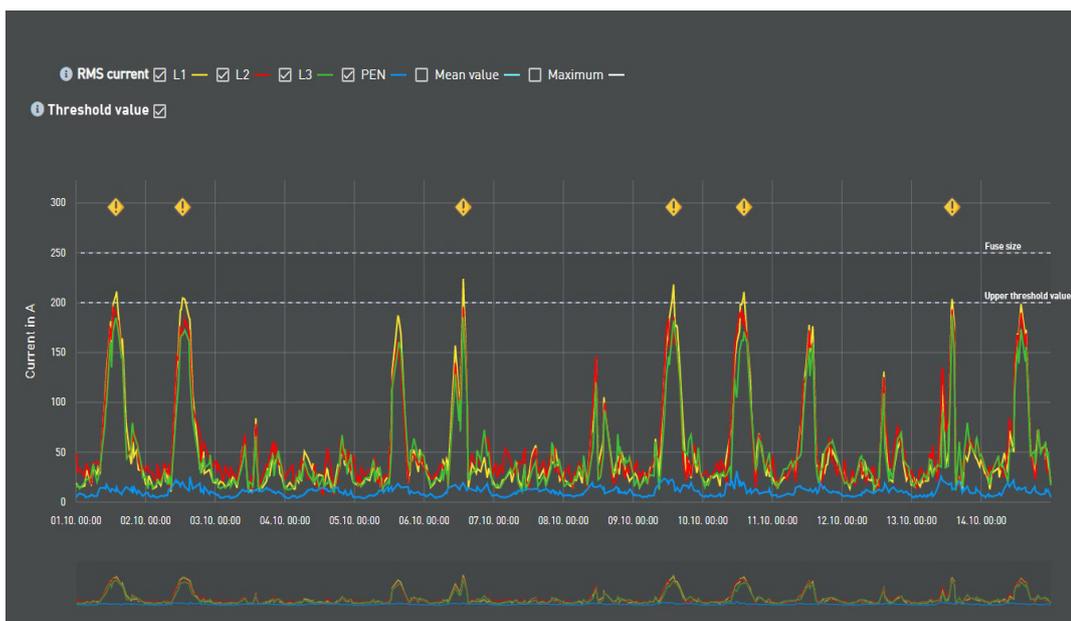
SMIGHT Grid2 helps you on the way toward digital grid operations. From the sensor technology and IoT platform to data visualization, you get a comprehensive solution from one single source and benefit from the experience gained from projects with other German grid operators. We also keep an eye on your hardware using intelligent monitoring. Our proficient service team holds training courses for your employees if required and is on hand to offer support with all process steps.

TRANSPARENCY CREATES DIRECT ADDED VALUE

SMIGHT Grid2 gives you quick and easy insights into the load history and flow direction of individual feeders. You can identify anomalies and their frequency. It equally helps you to understand the specific impact of electric vehicle charging and PV feed-in, for example. Take advantage of these insights for your operational processes and strategic grid planning:

- Base strategic grid planning on real-time data
- Better prioritize the renewal of assets
- Handle load management with precision
- Process grid connection inquiries more quickly
- Locate cable breaks and faults more quickly
- Back up operational decisions with data

DATA VIEW: THRESHOLD VIOLATION



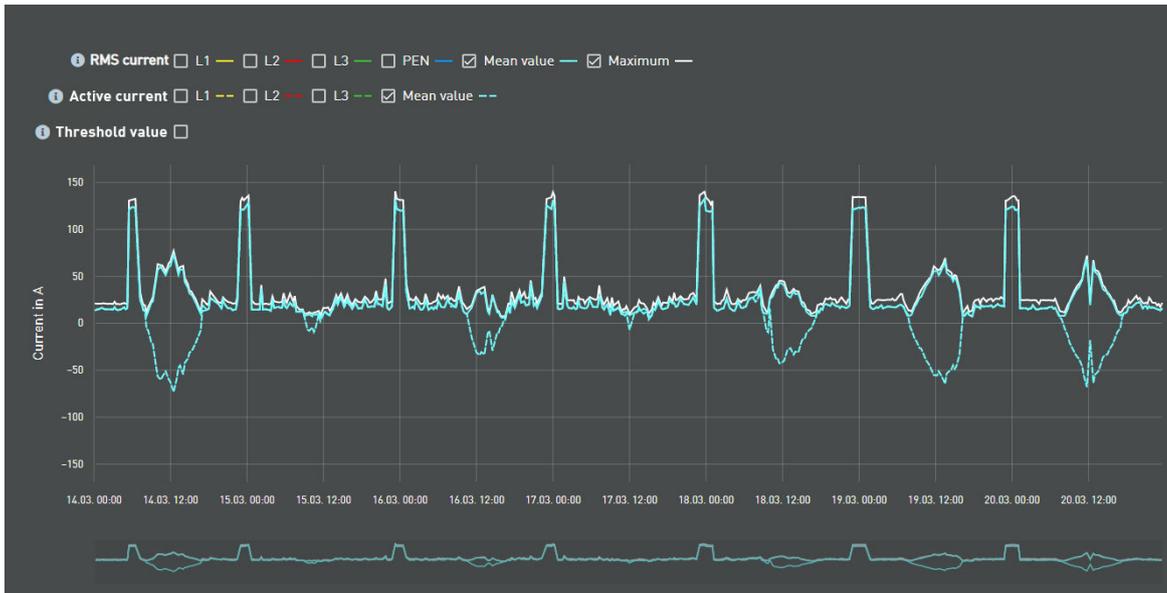
SMIGHT Grid2 allows you to identify anomalies in the low-voltage grid. We inform you of any threshold violations via an e-mail alert.

The number of electric cars is set to increase. As a leading grid operator, our job is to stay one step ahead of this development and predict where we will have to take measures to expand our grid and make it more intelligent. SMIGHT offers us the most efficient way of recording relevant grid data.

SMIGHT offers us the most efficient way of recording relevant grid data.

Dr. Hendrik Adolphi,
Leiter Head of Technical Facility Management, Netze BW GmbH

DATA VIEW: PHOTOVOLTAIC FEED-IN

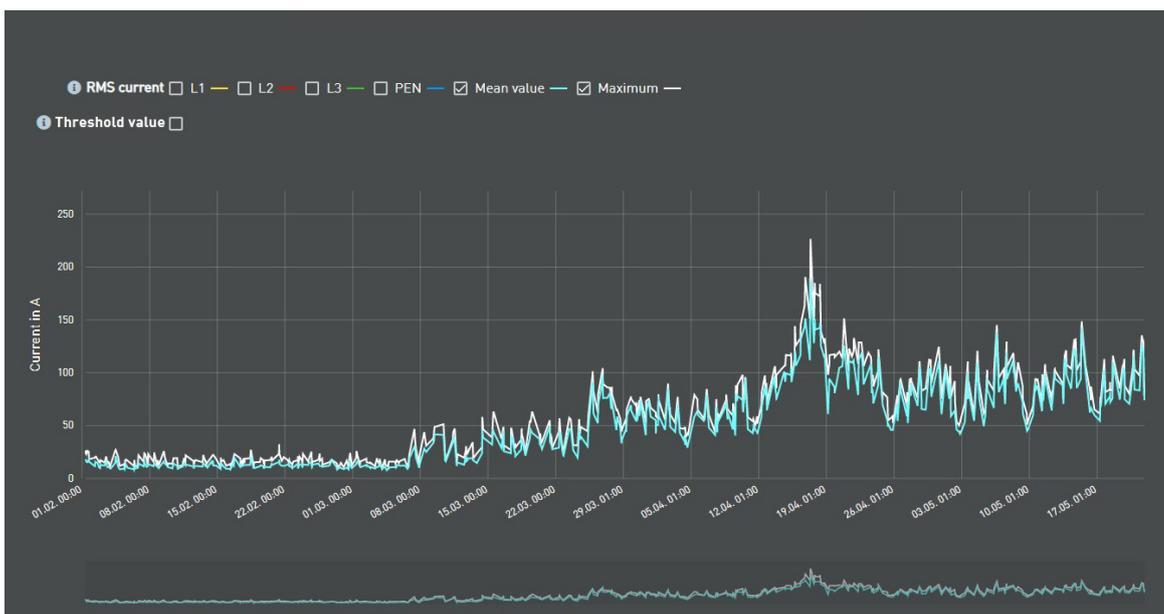


The effects of feeders become visible by recording the load flow direction of each phase. Grid status forecasts can be improved using the live data.



Would you like to find out for yourself just how intuitive data visualization and analysis can be with SMIGHT Grid2? Then take a look at our SMIGHT IQ demo: <https://demo.smight-mgt.de>

DATA VIEW: LOAD HISTORY



Using SMIGHT Grid2 allows you to identify long-term changes in the current load and understand the effects of PV feed-in and e-mobility.

SUCCESSES & EXPERIENCE

GRIDS WITH SAVVY – OUR REFERENCES

SMIGHT Grid2 was developed in conjunction with Netze BW GmbH and is now successfully used by more than 30 grid operators in Germany.



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We need more brains instead of more diggers to better understand our grid and gear up for the future. More brains only come with digital solutions – like SMIGHT Grid.

SMIGHT Grid allows us to see what is happening in our grid and react accordingly.

Gerhard Ammon,
Managing Director, Stadtwerke Fellbach GmbH



If you would also like to digitalize your grid operations and find out more about SMIGHT Grid2, then write to us: info@smight.com.

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