Newsletter

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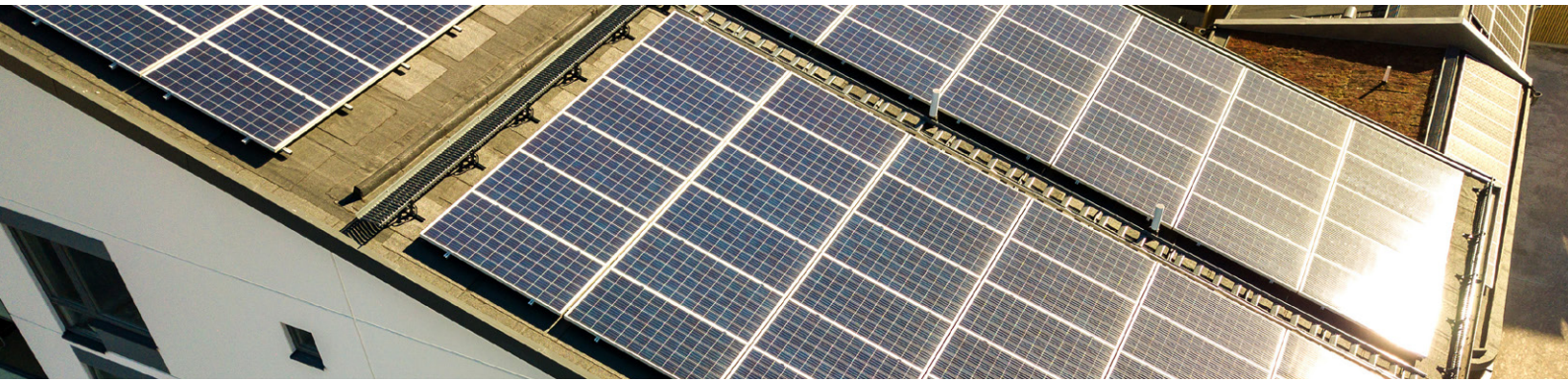


Prerequisites for a strong year

Robert Olofsson
CEO Metrum

2020 was a year with major trials and changed plans for us all. For Metrum, it has been a tremendous advantage that our Swedish domestic market is also our biggest market. In addition, our largest customer sector consists of electrical distribution utilities (TSOs/DSOs), where revenues have been unaffected by the pandemic and where investments and development projects have largely been carried out according to plan. We have delivered products and solutions to customers in accordance with our sales budget, which is very pleasing in consideration to the current circumstances.

A number of our major planned international projects were carried out in the first quarter of 2020, such as the strategically important undertaking from one of India's largest electrical distribution companies Adani Electricity. Regarding the delayed international projects, we can now see that most will be able to be implemented in early 2021. This means that we have high hopes for a really good year.

For us at Metrum, the external circumstances in 2020 provided an opportunity to focus even more clearly on the development and completion of several new products. This applies both to new measuring instruments as well as new applications, and we are looking forward to presenting several new solutions.

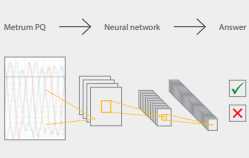
First out was our new stationary measurement instrument for low voltage grids and substations, Metrum SC FR, which we launched in January. The instrument is welcomed by the industry, which is experiencing major challenges linked to the rapid expansion of solar cell installations and electric car chargers, which place new demands on local power grids.

Recently, we have also focused on the further development of automated analysis services where both pattern recognition and neural networks are creating entirely new opportunities, as described in more detail in this newsletter.

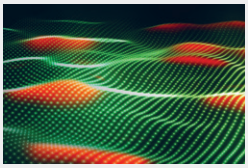
We hope for a strong 2021, but above all that you all can stay healthy, which is most important of all.

In this newsletter you will find ...

New substation analyzer for low voltage grids



AI solution for analysis of disturbances



Metrum R&D with focus on AI

Successful installations in Bolivia

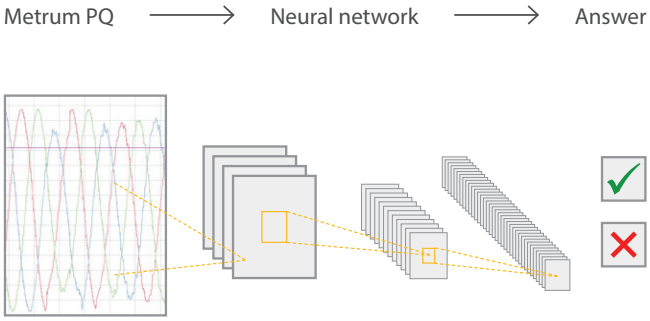
Strategic investment in Australia

New substation analyzer for proactive control of low voltage grids

Low voltage grids are being increasingly challenged by an expansive installation of solar cell plants and power outlets in local grids as a result of electric car charging. This is why Metrum has developed and adapted a new substation analyzer for low voltage grids – Metrum SC FR.

The new substation analyzer meets all measurement needs in low voltage grids and includes both electricity quality measurement and reporting in compliance with international voltage grid codes like EN 50 160, as well as new measurement algorithms for advanced fault detection with the ability to detect incipient and intermittent errors. Metrum SC FR is installed as a standalone instrument on existing instrument panels but is also offered encapsulated with battery backup.

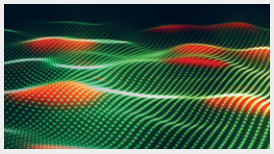
AI solution helps Metrum customers analyze and prevent grid disturbances



Metrum is currently developing a new solution in Metrum's PQ system for quickly identifying registered faults. The new classification system is based on neural networks and deep learning, and unlike previous AI systems, several deep layers of artificial neurons are used that successively push information back and forth. The network can assess which attributes of a disturbance are relevant and then present accurate analyses.

Using recorded PQ data from systems around the world, Metrum's new AI solution has been trained to quickly and easily present likely fault types to the user. An evaluation phase is currently underway with the system being tested at a Swedish electrical distribution company.

Sebastian Östnell
AI developer at Metrum



Metrum R&D with focus on AI

Metrum has in recent years built up expertise and created solutions in machine learning. The development of a general AI platform is now underway to strengthen Metrum's portfolio and to increase value for customers.

"We are focusing primarily on building up functions for identifying faults in power grids and making recommendations for operators," says Sebastian Östnell, who is responsible for Metrum R&D and heads AI development. "Different types of faults produce different graphical representations and we are training our system based on data from past events."

Metrum's AI initiative is initially based on the needs and challenges of the power grids but will be broadened in the future to embrace several industries.

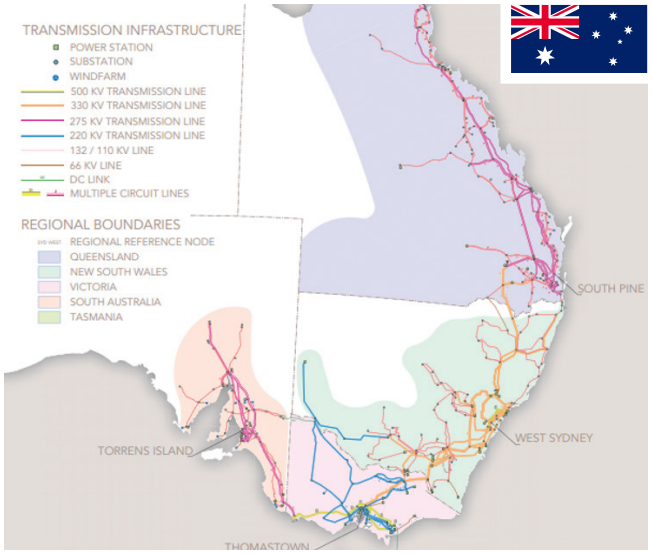
"The basic problems with power quality are the same regardless of industry and we are trying to be responsive to what customers are asking for in terms of applications and adaptations," says Sebastian Östnell. "It's an exciting development where we are creating solutions that have tremendous potential to create value for our customers."

SERVICIOS ELECTRICOS POTOSI S.A.

Successful installations in Bolivia

In 2020, Metrum installed electricity quality systems in several substations for the Bolivian electrical distribution company SEPSA. The systems help SEPSA increase the reliability of its deliveries, increase efficiency in operation and maintenance, and reduce power quality problems. The Swedish state investment company Swedfund has co-financed the project in which Metrum has trained a local development partner, EP&E, as well as SEPSA.

SEPSA is responsible for the distribution of electrical power within Potosí, one of Bolivia's nine departments with just over 800,000 inhabitants. The electricity grid is 8,500 kilometers in length.



Strategic investment in Australia

Through partner agreements with the distributor KingHill Pty Ltd and the consulting firm K-Bik Power for technical support, Metrum is establishing a long-term presence in the Australian market. Metrum can now provide a local presence with high technical expertise and understanding of customers' operations and conditions.

There are major similarities between the Swedish and Australian power grids, and Metrum's insights and successful projects can therefore contribute to smarter solutions for Australian customers. At the same time, new lessons learned from the collaborative projects in Australia can be applied to continuing efforts to provide customer benefits for Metrum's Swedish customers.

Join us @ Metrum Academy

We welcome both existing customers and other interested parties to participate in our very popular basic training in power quality that we offer in collaboration with University of Borås.

The course instructor is Senior Lecturer, Peter Axelberg and the syllabus covers theory, practical measurements and laboratory work, such as calculating various loads and sources of faults associated with power quality.

CONTROL THE FUTURE WITH BETTER GRID KNOWLEDGE

With AI we can analyse large volumes of data, opening up limitless opportunities. However, it is only when we have a tool that is programmed for a specific task that we can effectively analyse the information and reach great results.

PQ4CAST

TREND ANALYSIS GIVES THE COMPETITIVE EDGE

Metrum is now launching the next generation measurement system for efficient monitoring of energy and power quality using pattern recognition and machine learning. By using the very latest technical advances, PQ4cast is able to predict the forthcoming status of the electrical grid.

With a forecast you are able to follow how voltage, current and power are expected to change in the near future. This gives you cost-saving opportunities since you can act before any faults occur.

PQ4cast is installed in your existing Power Quality Monitoring System (PQMS) from Metrum.

MEASUREMENTS IN AN INTUITIVE INTERFACE

PQ4cast registers multiple parameters to ensure that electricity is supplied with good quality. The measurement readings are provided in an intuitive interface, allowing you to monitor the forecast in real time and study potential changes as they arise, hour by hour.

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