Cardiff, September 7, 2017

Software for the digital energy industry:

COPA-DATA expands its offering for utilities and grid operators

Since the very start of its development, the zenon software system by international automation manufacturer, COPA-DATA, has had a clear focus on meeting requirements in the energy sector. The software controls and monitors equipment for energy distribution and the generation of electricity from renewable energy sources. Offering the operators of energy facilities and grids a powerful package of customised functions, COPA-DATA is providing the tools needed to meet the very latest requirements in the energy sector.

Historically, COPA-DATA has always been closely linked with the energy industry. In the early 1990s, energy supply companies were among the first users of zenon software. Since then, the energy sector has been in a period of constant change, with developments moving on apace in the last five years in particular.

Digitisation is forging ahead, networked systems and distributed equipment are becoming increasingly common, and both suppliers and their customers are, in parallel, feeding power into the ever-more intelligent networks, or smart grids, as they have become known. In addition, electromobility is requiring more power on demand, and methods of storing energy – ideally generated on the basis of renewable energy sources such as sunlight, wind, or hydropower – for use at a later point in time are the order of the day. These and similar developments are creating a demand for new systems and technologies that are able to meet changing requirements.

A single system for many different applications

With its zenon software, COPA-DATA is offering both its private customers and those in the public energy and infrastructure sector a modern system that is able to support many different areas of application. The solution on offer supports the automation of substations, hydropower plants, and wind farms. Its focus is on monitoring and optimising electricity grids, interconnecting energy storage systems, and controlling equipment for the generation and distribution of renewable energy.

zenon is frequently implemented in substation automation. zenon technologies are used for on-site operation (HMI), at control center level (SCADA), and as gateways. COPA-DATA is also developing proprietary communication stacks for important international standards, including IEC 61850 (Edition 2), IEC 60870, IEC 61400-25, DNP 3, Modbus Energy, and ICCP. This enables quick expansion and the optimal maintenance of drivers. zenon's communication abilities ensure excellent connectivity in heterogeneous equipment and compatibility for use in smart grids. In addition, zenon offers many functions for the infrastructure of smart cities. It is possible to monitor and control tunnel facilities, water and waste-water management, as well as public transport and its power supply.

The very latest zenon Energy Edition product enhancements

Easy configuration, testing, and execution of command sequences

The **Command Sequencer** is a new module that has been integrated into zenon to facilitate the easy configuration, testing, and sending of command sequences. In so doing it increases the efficiency of operators and, as a result, makes supply more secure. The command sequences for the automation of substations are configured in a user-friendly editor. The individual commands in a sequence are simply arranged one after another. Operators can use the module intuitively with no need for programming knowledge. The system can be "taught" certain command sequences. It is also possible to perform testing in a simulated environment and changes can be made directly. PLC programming is not necessary. This ensures accuracy, efficiency, and flexibility.

Fully traceable processes

The **Process Recorder** module is also new. It records process data in full and can then make it available on request in the process visualisation at a later point in time. Past processes can be played back, forwarded or reversed step by step, or stopped, as often as needed. The findings gleaned in relation to possible causes of errors can be used to increase effectiveness and quality. The improved traceability of complex processes in electricity grids or substations supports grid operators in maintaining critical infrastructure reliably.

Quick location of statuses and errors

zenon supports a new option for combining data from geoinformation systems (GIS) and zenon visualisation. With the **GIS editor and GIS control**, users can display electricity grids in the zenon visualisation in geographical mapping material. Current statuses, such as alarms, are shown on the map directly. Users can thus localise certain states and events more precisely and handle alarms more efficiently.

Another new feature in zenon is the **impedance-based fault locating**. Using the impedance measured (alternating current resistance), it is possible to localize errors in the grid with great precision. The employees at energy supply companies can thus react quickly and with focus, thereby significantly reducing power outages.

A comprehensive overview of the possible applications of zenon in the energy sector is available on the COPA-DATA website at [www.copadata.com/energy](http://www.copadata.com/energy).

Caption:

With zenon Energy Edition, COPA-DATA is offering a software system for utilities and grid operators that will equip them to meet the specific requirements of a smart digital energy industry.

On COPA-DATA

COPA-DATA is the technological leader for ergonomic and highly dynamic process solutions. The company, founded in 1987, develops the software zenon for HMI/SCADA, Dynamic Production Reporting and integrated PLC systems at its headquarters in Austria. zenon is sold through its own offices in Europe, North America and Asia, as well as partners and distributors throughout the world. Customers benefit from local contact persons and local support thanks to a decentralised corporate structure. As an independent company, COPA-DATA can act quickly and flexibly, continues to set new standards in functionality and ease of use and leads the market trends. Over 100,000 installed systems in more than 90 countries provide companies in the Food & Beverage, Energy & Infrastructure, Automotive and Pharmaceutical sectors with new scope for efficient automation.

On zenon

zenon is a software system from COPA-DATA for industrial automation and the energy industry. Machines and equipment are controlled, monitored and optimized. zenon’s particular strength is open and reliable communication in heterogeneous production facilities. Open interfaces and over 300 native drivers and communication protocols support the horizontal and vertical integration. This allows for continuous implementation of the Industrial IoT and the Smart Factory. Projects with zenon are highly scalable.zenon is ergonomic, both for the engineer and for the end user. The engineering environment is flexible and can be used for a wide range of applications. The principle of “setting parameters instead of programming” helps engineers to configure projects quickly and without errors. Complex functions for comprehensive projects are supplied out-of-the-box to create intuitive and robust applications. Users can thereby contribute to increased flexibility and efficiency with zenon.

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