zenon
by COPA-DATA

INDUSTRY SOLUTIONS

zenon

THE SOFTWARE PLATFORM DESIGNED
FOR AGILE TRANSFORMATION
IN FOOD & BEVERAGE

Our Mission

"Enabling everyone who works with industrial equipment or deals with infrastructure to complete their tasks easily and efficiently. With great software that eats complexity for breakfast."

Transforming the food & beverage industry – there has to be a better way!

Innovation. Digitalization. Sustainability. These factors are driving transformation today in the food and beverage industry. To be competitive on a long-term basis, innovation at the process and product levels is critical, as well as across the business at large and to find new ways to reach consumers. Digitalization offers previously unparalleled opportunities to modernize manufacturing processes and make them more creative and efficient. A wide range of systems are being integrated. Users are accessing systems and equipment remotely. As a result, the need for data-driven manufacturing intelligence grows continually. The third ingredient in the transformation of the food and beverage industry is sustainability. This issue is certainly not new for many companies, but it is becoming increasingly important in light of climate change. Carbon-neutral production is winning over more and more supporters in the industry. Compliance with local and international laws is also critical. Companies must ensure that their products meet the highest quality standards. It is essential to maintain an overview of operations at all times and to be flexible and creative while continually improving.

At COPA-DATA, it is our mission to make your life easier and support you in your agile development activities during these dynamic times. The spectrum of software technologies available to you with the zenon Software Platform ensures that you benefit from a fully integrated solution that has been designed to help you to meet all your automation and production requirements. With the integrated and configurable components available out of the box in zenon, we can help you implement a range of sustainable solutions for your company. Thanks to its ongoing compatibility with older zenon versions, the software platform is a future-proof solution that is easy to maintain. In the long term, you will benefit directly from greater flexibility and low operating costs. This makes transformation less challenging for everyone on your team. While you are completely free to design the transformation your business needs, zenon accompanies you every step of the way and helps you make your vision a reality.
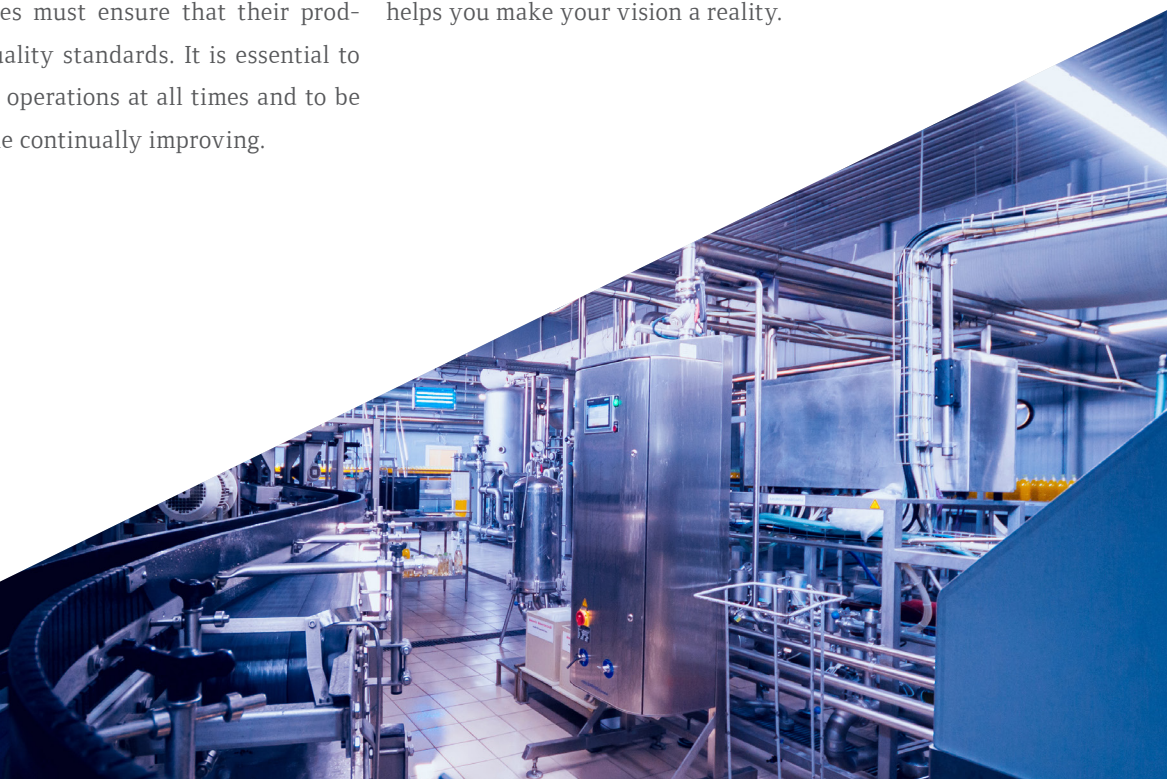
zenon supports you in these areas

From a single production facility to an entire enterprise, zenon makes your life easier with state-of-the-art solutions. The software platform helps you to meet your unique requirements in a wide variety of application areas that can easily be combined and expanded.

PROCESS AUTOMATION

With zenon, you can manage all the processes in your company, visualize the system, and capture vital production data. A variety of features gives more control and flexibility to your processes. This includes, for example, state-of-the-art recipe management or visualization using HTML5. Thanks to the graphical user interface, operation is intuitive, and recipes can be easily created, updated, and launched without programming. Check the current status of a process at any time during operation. Batch documentation and reports can be accessed at the push of a button, and batch release reports are possible immediately after completion. This ensures that every batch goes as planned. You gain valuable insights about your equipment and can use this information to improve workflows. Experience the compatibility with a large number of production systems so that you are networked optimally, even in a heterogeneous system landscape. zenon consistently supports the separation of system and process controls, thus ensuring ISA-88 compliance.

HMI

A powerful human machine interface (HMI) provides major benefits in many different areas of the food and beverage industry. zenon makes the production environment more efficient and facilitates production within the framework of relevant regulations. User interface displays can be adjusted to meet different user requirements during operation. Languages, units of measurement, and color palettes can be configured individually for each user. Gestures familiar from the smartphone, such as zooming or scrolling, are also available in zenon, so that you can operate machines and systems intuitively and ergonomically, even without a keyboard or mouse. Thanks to modern HTML5 visualization, you can also have a full overview of your

system on mobile devices. The software platform includes a PLC software that can be run both autonomously and integrated in zenon Service Engine.

LINE MANAGEMENT

Typically, filling and packaging lines are heterogeneous and consist of machines, equipment and components from different manufacturers with different years of construction. Thanks to the connectivity of zenon, you can integrate all of these components without a hitch. You benefit from zenon's scalability and flexibility and can implement your line management system without restrictions. If necessary, zenon can be expanded to a cloud application. Data can be accessed from different locations, no matter how far apart they are. The production team can see the status of the current order, alarms and events in real time and can take steps promptly if there is a threat of complications. zenon can also handle large amounts of data: information about energy consumption, alarms, events, etc. is collected and archived. Thanks to the integrated reporting tools, this data can provide you with maximum added value.
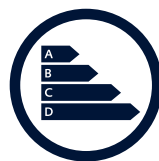
ENERGY DATA MANAGEMENT

Now, more than ever, the careful use of energy and raw materials is a crucial element in a manufacturing system. Thanks to zenon's high level of connectivity, virtually every data source can be connected, whether measuring devices, PLC systems, older or newer components, or software applications from third-party providers. Intuitive modules and user-friendly design help you to integrate equipment, add new users, or quickly carry out energy consumption calculations. Because cumulative consumption figures for the various energy sources alone can often be hard work to interpret, the software platform provides a number of analytical options out of the box. These

include Sankey diagrams, Pareto graphs, Gantt charts, heat maps and more – all designed to help you meet ISO 50001 requirements.

UTILITY SYSTEM MANAGEMENT

In production facilities for the food and beverage industry, a number of auxiliary systems and units are required. These play a major role when looking at equipment from a microeconomic perspective. Thanks to its many native interfaces, zenon can incorporate a wide variety of technologies and software standards in a central system. As a result, it isn't only pure production information that can be captured and integrated in the monitoring process. Data from compressors, coolers, heating systems, systems for water and wastewater treatment, power supply and much more can be captured and integrated too. You also benefit from integrated functions such as top-down views, alarm and event lists, trends, displays of key performance indicators and much more. Your team receives this information in real time and based on their roles. This means that they can respond quickly in the event of an alarm – wherever they are. This enables you to improve uptime, reduce maintenance and material costs, and ensure optimal consumption of resources.

BUILDING AUTOMATION

The potential applications of zenon go beyond the production environment: zenon can help your buildings be smarter and detect problems early on – for example, with air conditioning in production or storage rooms. With zenon you can automate the brightness in rooms, depending on the amount of sunlight, or control it based on room occupancy plans. Improving the lighting control in rooms can help you to reduce your energy costs. zenon continually monitors the entire building infrastructure in real time and enables you to provide the best possible working environment for your personnel. As a result, the software platform not only benefits conventional production processes but also makes office activities more convenient and greener.

QUALITY MANAGEMENT

In food and beverage manufacturing, uncompromising product quality is essential. With comprehensive recipe management and batch control in compliance with ISA-88, zenon enables you to optimally manage production quality. Define recipes and processes and ensure their proper execution with zenon. With a wide range of access authorizations, zenon ensures that every user receives exactly the information they need, based on their roles and in real time – on a PC, industrial control panel, or mobile device. Analyses and reports on the batch are available immediately after production. zenon contains numerous ready-made reports for this purpose, including reports on statistical process control (SPC) and alarm evaluations. All important data is stored in zenon Archive Server.

PLANT INFORMATION MANAGEMENT

In the past, the combination of paper-based and digital traceability led to difficulties. Manual entries proved to be tedious, slow and prone to error. Today, zenon supports you in the digitalization, centralization, analysis and organization of your data. As a result, the software platform helps you to prevent errors and increase your operating profit. With zenon, all important information can be extracted and processed, even in heterogeneous production landscapes, which developed over time. With standardized data acquisition, state-of-the-art dashboards, extensive alarm systems, as well as comprehensive analyses and reports, zenon generates valuable insights from all the data captured by your equipment. The high scalability of zenon ensures that all processes run smoothly, even as your company grows. New systems, sensors and components can be added easily.

zenon

Designed to make your life easier.

zenon is a software platform that makes it easy to engineer and automate operations for manufacturing and infrastructure equipment. Whether working in manufacturing or in the energy industry, zenon can help you achieve and maintain your operational objectives.

COMPREHENSIVE SOFTWARE FOR MANUFACTURING AND ENERGY

zenon ensures that equipment runs reliably, flexibly, and efficiently. Decision-makers, engineers and operators in manufacturing companies and in energy distribution use the capabilities of this comprehensive software platform to connect all relevant areas – from project creation to maintenance. The result is a notable increase in overall equipment effectiveness.

EMPOWERING PEOPLE

Using zenon, all users – from production through to management – can create synergies and make a sustainable impact on business in a measurable and positive way.

ENABLING DIGITAL TRANSFORMATION

The zenon Software Platform provides one integrated environment that combines data recording, machine operation, and business intelligence. This helps businesses to maintain a competitive edge throughout their digital transformation.

PROPERTIES

▶ **Scalability**
zenon provides an optimal, seamless scalability from small to enterprise-wide applications.

▶ **Robustness**
zenon runs robustly and provides the highest system availability and operating reliability.

▶ **Security**
zenon provides comprehensive security features and can be integrated seamlessly in holistic security concepts.

▶ **Performance**
Ever-increasing networking is resulting in an explosion of data. zenon helps you meet this challenge with optimal performance.

▶ **Flexibility**
Software must support changing business processes that are becoming more agile. zenon can help you flexibly scale up and adapt your solution to meet these demands.

▶ **Openness**
As an open platform, zenon supports easy integration across the value chain.

▶ **Validation**
For highly regulated industries, zenon enables users to perform validation efficiently with a maximum of flexibility while meeting the regulatory regime.

▶ **Ergonomics**
zenon provides the best possible ergonomics for people interacting with technology in digital processes.

▶ **Lifecycle management**
zenon ensures long-term maintainability, adaptability and updatability over the entire lifecycle of your equipment.

▶ **Interdisciplinarity**
zenon leverages synergies across different disciplines.

Universal Access and Operation

Rights Management

Distributed Intelligence and Networking

Data Modelling and Data Management

Universal Communication

Visualization and Control

Analytics and Reporting

Device and Asset Management

Scheduling

Simulation / Logging and Digital Forensics

Application Engineering and Maintenance

Data Acquisition

and Recording

Situational Awareness

Human-Machine Interaction

Workflow Management

Control of Machines and Plants

zenon Software Platform

All the ingredients for your individual solution

As part of your digital transformation, you can pursue a small pilot project or a larger solution for your facilities, regardless of whether you are implementing a new system or expanding existing systems. With zenon, you benefit from a modular design. Tailor-made applications provide you with greater flexibility and efficiency. With its connectivity and transparency, zenon brings together different disciplines in one system and ensures a comprehensive and ergonomic environment – from equipment operator to CEO.

HARDWARE INDEPENDENCE AND THE POWER OF CONNECTIVITY

zenon manages to merge data effortlessly from heterogeneous production landscapes. Thanks to open interfaces and multiple communication protocols, the software platform seamlessly integrates existing and new machines and sensors. The platform has over 300 native drivers and communication protocols. zenon is able to act as a data supplier, e.g., via OPC DA server, OPC UA server, Modbus slave, SNMP server or SQL online. This enables end-to-end data integrity from the sensor to the ERP system and,

if necessary, to the cloud. This allows you to expand your capacity, improve the efficiency of existing systems, and bring additional flexibility to more applications..

SCALABLE SOFTWARE ARCHITECTURES

From stand-alone systems to an enterprise-wide project: zenon supports customized solutions to meet the needs of your partners and your company as it grows. With zenon, even the most complex network architectures can be configured easily and securely. The seamless redundancy in zenon, scalable with client-server technology,

permanently ensures maximum data consistency in your system. The zenon Service Grid is of particular importance. With the central Service Hub, it offers the option of securely networking systems across locations (without VPN). All information is clearly visualized with HTML5. It's up to you whether you want to save information to the cloud as well as the choice of provider, of course.

UNCOMPROMISING SECURITY STANDARDS

As a software platform in which the product development cycle meets IEC 62443 industrial security standards, zenon closes security gaps in every development phase – from design through implementation to the end of the product's life. zenon defines access rights on the basis of user roles and ensures that critical operations are only carried out by authorized users. In addition to zenon user administration, user authentication with Active Directory is also supported. Logins and access rights can be linked easily to Windows user authentication. Easily configurable authorization levels ensure that only those users who are authorized to do so can perform an operator action. By encrypting communication, zenon not only provides secure communication throughout the business but also ensures secure access from mobile communication devices.

A TAILORED USER EXPERIENCE

Improved manufacturing efficiency, overall greater system effectiveness, and optimized quality management are determined by the usability of the system. For this reason, zenon provides flexibility when it comes to customizing languages, units of measurement, and colors. This means that every project can be fine-tuned during operations to meet different user requirements. All personal settings are available immediately when you log in. With intuitive, user-friendly interfaces, zenon offers cross-location automation and bundled information for every single function. Using gestures familiar from mobile devices, operating personnel can navigate to find all the information they need. By zooming in and out, thanks to zenon Worldview

functionality, the entire production system – from sensor to sites and including the energy supply – is displayed at the desired level of detail. Details, such as the dynamic visualization of liquid flows, enable you to keep an overview at all times. Two-handed operation further supports machine operation when making safety-related entries.

STATE-OF-THE-ART AUTOMATION AND FLEXIBLE OPERATION

Developed on the basis of the ISA-88 standard, the workflow for a batch recipe runs separately from the technology function in the system. This provides maximum flexibility and reduces the validation effort to a minimum. In addition, zenon supports continuous improvement, increases efficiency, and helps to ensure product quality. zenon also provides flexible and customizable recipe group management that can be used seamlessly in a variety of production landscapes. Tasks such as preparing, running and updating recipes are connected to an integrated user administration system. Versioning of recipes ensures recipes are easy to find – and changes can be tracked clearly. zenon enables users to manage peak loads, in order to keep consumption below defined limit values, even during peak times. This helps you to produce cost efficiently. Based on a model of energy producers and consumers, the software platform continuously calculates consumption forecasts. In the event of critical readings, zenon can provide timely recommendations for managing units manually or automatically.

A FULL OVERVIEW BASED ON REAL-TIME INFORMATION

zenon visualizes processes in real time. The alarm management feature, which is critical for operational safety, is integrated automatically, and can be quickly configured and activated. The alarm message list (AML) displays and filters alarms and their status (e.g., active, active/acknowledged and inactive/unacknowledged). It also identifies and displays alarm areas so that on-site

zenon enables you to monitor the energy consumption of all process steps, improve the energy efficiency of your business, and meet the requirements of ISO 50001 certification.

employees have the detailed information they need to locate and resolve the issue. The chronological event list (CEL) logs operations automatically and in real time. It shows all systems and predefined messages and can filter information for analysis and reports. This list is saved in the system in binary format so that the data cannot be tampered with. All relevant KPIs are displayed clearly on customizable dashboards. Reliable trends provide an additional overview. zenon notifies and informs operating personnel and decision-makers regardless of their current location. The information required for the response is available via mobile access and web server, regardless of location.

DETAILED ANALYTICS AND REPORTING À LA CARTE

A wide range of analytical options can help you make informed decisions about your business. Reports available out of the box include Overall Equipment Effectiveness (OEE), consumption analysis, alarm evaluation, efficiency reports, and more. In addition to standard SPC reports for process capability analysis, other statistical reports feature trends, box plots and histograms. With graphical formats, such as Sankey diagrams and many other visualizations, you can keep a clear overview of the energy efficiency of your business. When saving and exporting data, zenon allows you to choose whether to store data centrally on your corporate servers, in the cloud, or locally on the machine.

The zenon Process Recorder archives actual process workflows and offers users the option of analyzing errors and problems retrospectively. It further extends the wide range of zenon tools such as Extended Trend, the Alarm Message List, or the Chronological Event List. You benefit from even more accurate troubleshooting.

Thanks to its powerful data acquisition functionality, zenon enables predictive maintenance of machines based on their usage. If loads are higher, maintenance periods are shortened. If loads are lower, maintenance activities can be postponed.

Quick, easy and ergonomic engineering

Automation engineers and service technicians face many challenges – whether they work directly with a manufacturing company, a system integrator, or an equipment manufacturer. Equipment and hardware from different suppliers have to be integrated. Security and stable operation are critical. Time pressures can also be high. zenon helps you meet these challenges effectively and efficiently.

▶ SETTING PARAMETERS INSTEAD OF PROGRAMMING

Engineering with zenon is based on the principle of "setting parameters instead of programming". This translates into faster implementation. Let's say, for example, a software engineer would have to write approximately 30,000 lines of code to create a redundant network. To get the same result in zenon, the engineer needs only a few clicks of the mouse. However, you retain the option of programming for extended functionality.

▶ OBJECT ORIENTATION AND MODULARIZATION

Smart Objects also provide a way to set up projects even faster and more efficiently. They consist, for example, of variables, drivers, symbols, as well as functions, reaction matrices and scripts. Smart Objects can be duplicated and customized at the push of a button. Centralized maintenance and easy instantiation also shorten engineering time. Additionally, zenon enables end-to-end production modularization in line with Module Type Package (MTP) technology.

▶ BUILT-IN ZENON SOFT LOGIC

The integrated IEC 61131-3 programming environment provides users with a homogeneous basis for sophisticated elements for control, mathematics, algorithms, and communication in the SCADA environment. This ensures PLC logic and data processing are firmly integrated in process and equipment control activities.

▶ EFFICIENT ENGINEERING: COST-SAVING AND ERROR-FREE

The zenon software platform provides a wide range of options designed to simplify configuration of automation applications. All tasks can be carried out easily in one single environment (zenon Engineering Studio). This also applies for connections to ERP systems. Meanwhile, multiple users can work on the same project at the same time – without getting in each other's way. The project history and the project comparison features ensure full traceability. Customizable wizards that come with the application support automated engineering and handle a large number of standardized and recurring tasks in the project creation process.

▶ UNLIMITED SCALABILITY FOR YOUR BUSINESS

zenon gives you the freedom to decide what you want to implement and when you want to do it – at every step of the project. With zenon, you can begin with a successful "greenfield" implementation, expand a "brownfield" installation, or grow your project as your business continues to develop. There is no system downtime during upgrades or maintenance activities. Updates can be imported cost-effectively, and projects remain compatible across multiple product iterations with zenon.

Agile implementation of transformation

WITH THE ZENON SOFTWARE PLATFORM, YOU BENEFIT FROM THE FOLLOWING:

▶ **a turnkey platform** designed to help you meet even the most complex challenges

▶ **an innovative and reliable foundation** for continuous improvement

▶ **a short learning curve** in order to directly use the latest software technologies

▶ **freedom** to put together project teams with all the necessary skills

▶ **cost-effective flexibility** when adapting applications to new requirements

THIS IS HOW ZENON SUPPORTS YOUR AGILE TRANSFORMATION

Your Vision

Proven Return on Investment (ROI) in every agile iteration

Start now!

High Flexibility, Reduced Total Cost of Ownership (TCO) and consistent implementation along with the transformation journey.

Maximized impact of your transformation journey!

Customers worldwide are already benefiting from zenon

As an independent software manufacturer, COPA-DATA provides local sales and support through its subsidiaries and distributors in more than 50 countries. Over 5,000 companies worldwide are already using zenon. In more than 200,000 installations, zenon helps our customers to make their lives easier. No two projects are alike, because the focus is always on users and your own unique requirements.

COPA-DATA is actively involved in numerous industry-leading networks and associations. Together with other organizations worldwide, we are shaping the future of the manufacturing industry and the public sector.

Under the motto "Growing together", the COPA-DATA Partner Community with system integrators, OEMs, machine builders, and educational and research institutions around the world comes together to drive innovation.

Companies that trust in zenon:

ZENON

▶ *Adelholzener*
▶ *ABInBev*
▶ *Becherovka*
▶ *Carlsberg*
▶ *Heineken*
▶ *Iglo*
▶ *KHS*
▶ *Mondelez*
▶ *Suntory*
▶ *and many more*

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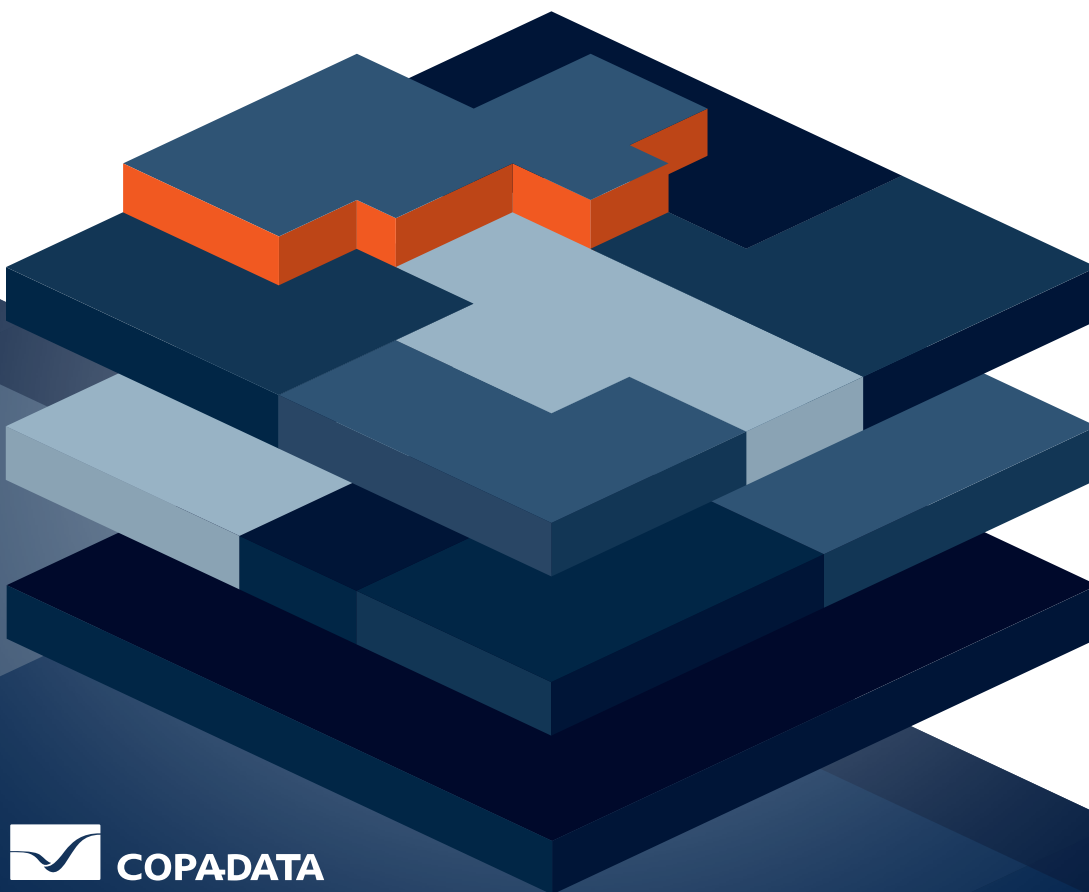
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