

# SAUTER FACTS

The magazine for SAUTER customers

## **modulo 6**

The age of digitalisation

## **Room operation „to go”**

With „Mobile Building Services”

## **Augmented Reality**

Commonplace in Geneva

## **Bavaria Towers**

Munich's state-of-the-art real estate ensemble

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## Dear Customers and Business Partners, Dear Readers,

"There's no such thing as an intelligent building, but at most an intelligently planned and sustainably operated one." Martin Becker ought to know. The professor for MCR technology, building automation and energy management at Biberach University of Applied Sciences has been committed to the education of new skilled workers for 20 years. This expert believes that digitalisation requires new training and further education options for young people. To find out exactly what he means, please see the interview with Martin Becker on page 14.

And with that we're already exploring the topic of digitalisation, which is a focus of this entire issue of SAUTER Facts. The challenge for us is to offer our customers real progress. In this issue we present you with a number of such applications.

Building automation of the future needs seamless embedding in the "Internet of Things" (IoT) and compatibility with existing installations. At the same time, systems must be easy to operate. Fast automation stations

that can handle huge data quantities are the key. The new SAUTER modulo 6 system generation is able to do this. Read the article on page 4 to find out how this works.

The new app for SAUTER's Cloud "Mobile Building Services" is a prime example of cloud services making people's lives easier and reducing costs. This app enables very simple control and automation of lighting, heating and sunshading in one's home via a mobile phone. From professional building automation to the "smart home" – the SAUTER app makes it possible. Find out more on page 10.

And, as always, we tell you about selected projects where SAUTER's strengths play a leading role. Just one example: in the new QUARTET business centre in Geneva. Here the facility management is working for the first time with an augmented reality app that visualises real time data on mobile phones and tablets. A very promising pilot project indeed!

The SAUTER Vision Center in Munich's Bavaria Towers uses the weather forecast to regulate the inner temperature. This allows sudden weather changes to be anticipated. Further exceptional projects to read about in this issue of Facts: the refurbishment of St. Jakobshalle in Basel, climate control in two listed churches in St. Petersburg, Al Habtoor City in Dubai with its spectacular water theatre and the new SHIFT office complex in Paris.

I wish you a stimulating read!

A handwritten signature in black ink, appearing to read "W. Karlen", written in a cursive style.

Regards, Werner Karlen

# Into the age of digitalisation with modulo 6

Practical experience gathered over the last 10 years from an impressive number of projects has resulted in important findings for the development of a new system generation: Building automation of the future demands more processor performance, far larger data volumes and, at the same time, easy operability. The system is also to be seamlessly embedded in the Internet of Things (IoT) and use the latest cloud technologies. As a consequence of opening up to the world of IoT, the system additionally needs protection from cyber attacks. In a time of short-lived technological trends, our customers nevertheless require system components that have an availability of at least 10 years. They also expect their investment in SAUTER technologies to be protected: This means cost-effective refurbishment of existing systems and the greatest possible efficiency during commissioning, without interruption to ongoing operations. We have accepted all of these challenges, and are building a bridge between tried and tested building technology and the latest trends in digitalisation with the new SAUTER modulo 6 system generation!

## Simple and intuitive operation on all levels

During the development of modulo 6 we paid particular attention to providing a high level of user-friendliness. SAUTER modulo 6 can be operated intuitively. modulo 6 connects via Bluetooth to a smartphone or tablet. An app with a clear layout enables access to measured values, control values and system parameters, and features the very practical option of performing set up and wiring tests even before a program has been loaded. The app also skilfully takes care of complex tasks, such as configuring network parameters, defining user roles, loading encryption certificates and performing data backups and restores.

As an alternative to smartphone operation, modulo 6 also has a local operating unit (LOI) with a high-resolution graphical colour display. The LOI can be attached to any I/O module and immediately displays all relevant data for the respective module in real time. The small device is menu-driven and can be operated using 4 buttons. The I/O signals are displayed graphically and numerically and the small display is even capable of depicting the chronological sequence of analogue and digital signals in real time. Also, important for startup and emergency situations: The LOI offers manual override operation de-coupled from the automation station in accordance with EN ISO 16484-2. With the optional power injector, the I/O modules are also independent from the automation station's power supply.

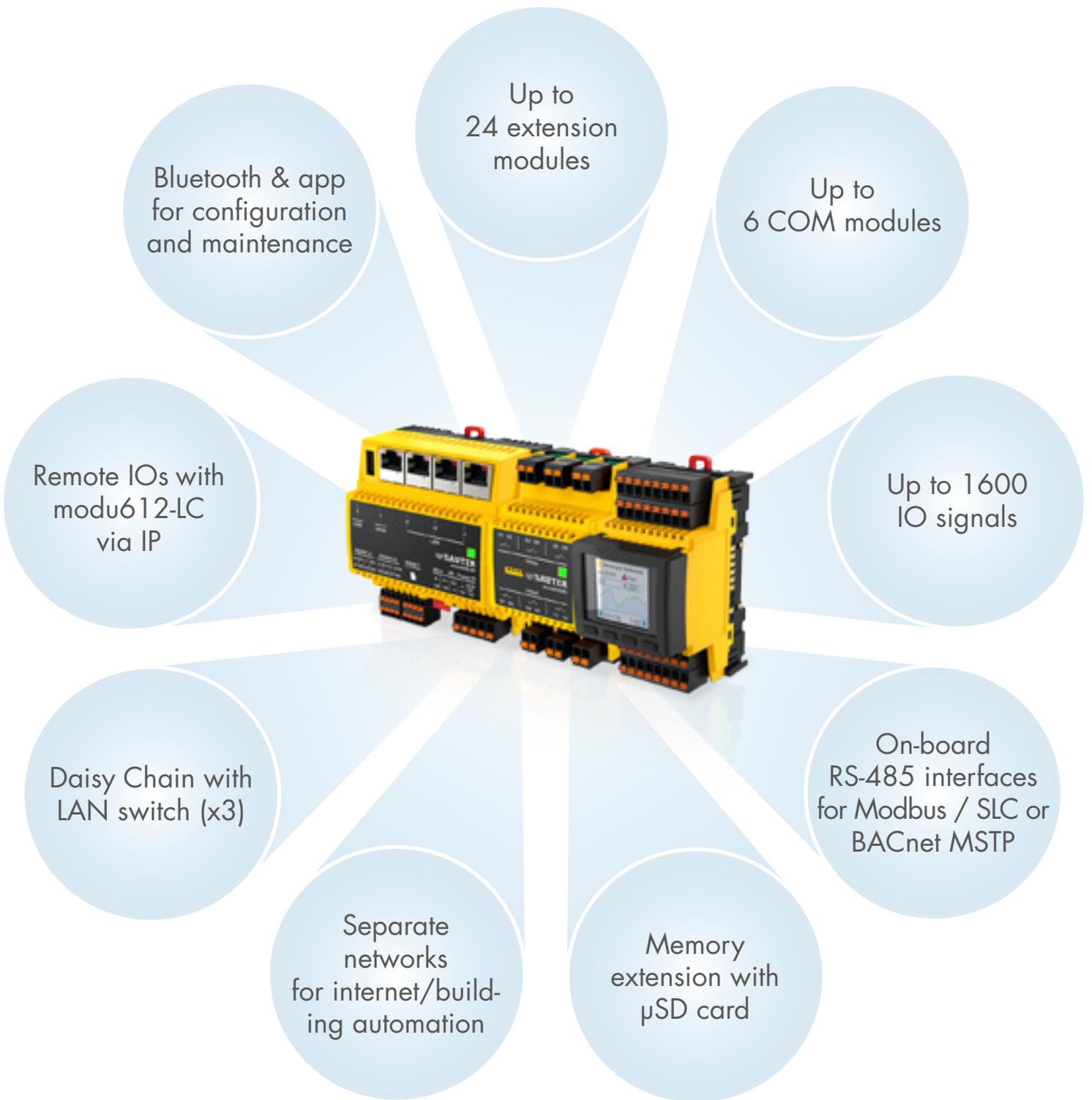
The automation station offers even easier operation thanks to its embedded moduWeb Unity HTML5 web server. The moduWeb Unity's graphic user interface enables the display of and interaction with

entire buildings, zones, individual spaces and technological systems. With the moduWeb Unity's scope of functions, in many instances a separate server-based building management system becomes unnecessary. The structured display of BACnet objects, the self-explanatory graphic calendar, time programmes and trend logs allow building technicians to perform their daily tasks interactively.

The latest version of SAUTER Vision Center (SVC) rounds off the excellent user-friendliness on the management level. Not only does SVC integrate modulo 6, it also visualises and controls the installations of the predecessor systems, modulo 5 and EY3600. Already-installed systems can be continuously and inexpensively expanded with new modulo 6 components and be replaced in stages. At the same time, the performance of SVC has been significantly developed: Distributed databases process more than 100,000 data objects with very high throughput rates. The "Scenario Manager" in SVC reduces the time required for building operation by summarising several switching commands into one scenario at the click of a button and running these using a freely programmable time programme. The maintenance module in SVC optimises system maintenance, helps with the organisation of assets and open maintenance issues, and quickly detects weak points or failure threats. With the assistance of individually configurable cockpits and dashboards, the status of the entire building technology can be seen at a glance.

## IoT and the cloud – communication without barriers

SAUTER modulo 6 knows the specialised communication protocols of the systems for heating, ventilation, air conditioning, lighting, energy and resource measurement (BACnet/IP, Modbus, KNX, DALI, M-Bus etc.). SAUTER Engineering Tool CASE 4.0 integrates all kinds of bus systems in one stable and secure overall system. modulo 6 expands these internationally accepted best practices with a higher communication layer for the IoT and it breaks with traditional thinking in terms of separate technical building systems, because the new world of the IoT demands communication without barriers. SAUTER



modu6 networks with the cloud and the IoT just as naturally and securely as with the existing systems for heating, ventilation, and air conditioning. This means that, on request, the modu6 automation station communicates simultaneously with the traditional BACnet building network and the IoT via the MQTT protocol, using an encrypted and protected connection.

SAUTER Cloud services take over the role of a traditional management system. The future building operator calls up the services of the management system from the cloud as required. However, they only

pay for the functions and data that they actually need. Therefore, a local building server can be done without, if desired. Subsequently, the costs for local data centres and their operation no longer apply.

Further information about this article:

This enables new strategies for the efficient use of buildings: Optimisation of the operation via analysis of building data in the cloud, cost reduction by using cloud services as well as information about the current level of usage for actuators and valves with predictive information about the expected serviceable life. In short: modulo 6 speaks the language of the most efficient buildings of the future!

### Cyber security by design

As buildings are being connected to the Internet of Things and the cloud, the security of systems and networks is becoming a major challenge. SAUTER modulo 6 has had this protection built in from the outset. The automation station offers a network interface that is completely separated from the building network and thus creates a type of firewall between the IoT and the building network. The encryption, authentication and access security are guaranteed by proven security technologies. modulo 6 is also equipped for the BACnet SC (BACnet Secure Connect) security standard.

SAUTER has defined the modulo 6 security concept in detail within the scope of the new international standard for Cyber Security for Industrial Automation, IEC 62443. The modulo 6 security levels achieved for network and system components have been derived from this in accordance with the standard. This structured definition of the security levels makes it possible to specify additional targeted measures for systems that are particularly worth protecting.

### Cost-effective refurbishment in budget-friendly stages

Despite state-of-the-art technology, buildings have life cycles of several decades. Using modulo 6 protects our customers' investments by enabling the smooth refurbishment of existing systems. Existing systems can be updated in budget-friendly stages without any interruptions. One very important special feature: Already developed control and regulation programs from the SAUTER modulo 5 system generation can be reused. As required, even multiple modulo 5 and modulo 6 programs can run on one station in parallel with a wide

- › Processing of large data quantities within the smallest dimensions
- › Big memory capacity for historical data recording over several years
- › High processing and response speeds

**Performance**



- › Integrated moduWeb Unity web server for operation
- › On smartphone via Bluetooth for commissioning and maintenance
- › "LOI" local operating unit with high-definition, graphical colour display for manual override operation (EN ISO 16484-2) independently of the automation station

**User-friendliness**



- › Extended integration options with established BACnet (open standard protocol)
- › Integration of third-party devices and systems with the Modbus field bus, M-Bus, KNX, DALI and SMI unifies the heating, ventilation, air-conditioning and electrical supply systems to create one stable and reliable overall system

**Integration**



- › Integration of IoTs with MQTT
- › Data backup via MQTT in the cloud
- › Cloud services for control, operation and engineering
- › Optimisation of operation via analysis of consumption and usage date

**IoT and cloud**



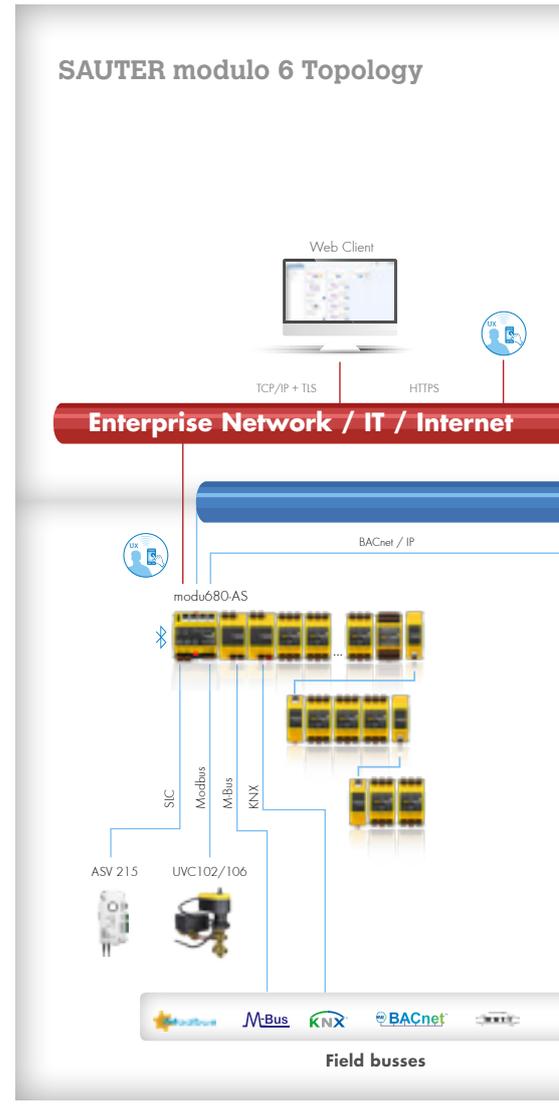
- › Integrated network separation of Internet and building technology
- › VWeb server with encrypted communication
- › BACnet SC-capable
- › Integrated user authentication
- › Traceability of all user interventions thanks to audit trail

**Security**



- › Backwards compatible with modulo 5
- › Long availability
- › Enables the refurbishment of existing systems in budget-friendly stages

**Investment protection**

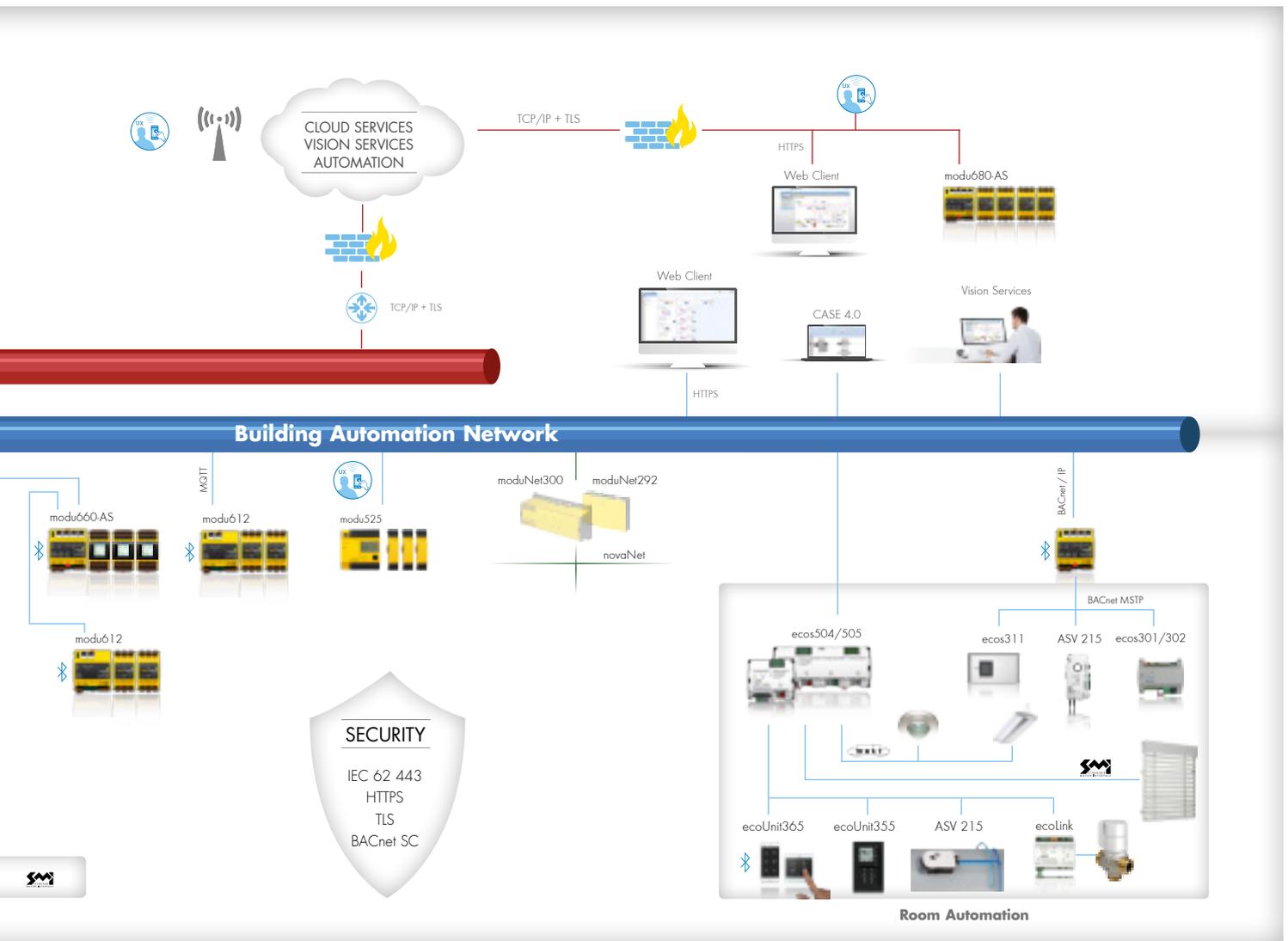



variety of process cycles. modulo 6 is thus largely backwards compatible in terms of programs and networks, integrates its own and third-party installations and also offers the link to the era of the cloud and IoT – all this without neglecting the necessary security!

### Consolidation and high performance

Building technology in the age of the Internet of Things requires ultra-fast communication with an abundance of networked devices. The volumes of data to be processed have grown almost exponentially in recent years. The consolidation of production, office and residential space calls for increasingly smaller devices. The new generation of SAUTER automation stations are designed for these challenges: modulo 6 offers previously unequalled levels of performance in terms of data points, memory space and processing speed – all this in a highly compact space. A single automation station can process up to 1,600 sensor and actuator signals. The number of required BACnet objects per automation station can thereby grow to well over

3,000. Nevertheless, the modular system design enables the provision of customised performance for the most varied requirements at optimised overall costs. From simple heating and ventilation control right up to networked building clusters. Our customers, and not the system, set the limits.



# We have interviewed the managing directors of SAUTER Germany, Switzerland, Netherlands, Austria, U.K. and France:

1. What SAUTER modulo 6 innovation are you most excited about?
2. What do your customers expect from the Internet of Things?
3. What is a major challenge for building automation and how can your customers better overcome this in future using SAUTER modulo 6?

Prudence SOTO / Managing Director / SAUTER France

1.) I am especially excited about the cloud functionality combined with the high security level, precisely in tune with what is required and expected of buildings today. With this we will be able to satisfy our customers' new security requirements in the age of smart buildings and smart cities.

2.) We are experiencing an 'explosion of services' offered by new actors in the IoT area. Through the networking of sensors and other devices, data can now be processed in real time. Building managers are very open to IoT solutions, and these are finally creating opportunities for them to transmit information to their users, offer them new services and increase their awareness of energy savings by using special sensors.

3.) One of the greatest challenges is the cooperation between the construction industry and the IT sector. If this cooperation is successful, the various actors in the construction industry will benefit from having the best support possible:

- Planning offices whose task it is to work on technical specifications that comply with the new requirements of project developers (e.g. smartphone applications etc.).
- Installation technicians who can be expected to provide suggestions for a BMS/smart building system in accordance with the particular technical specifications.
- Operators who must ensure the sustainability of the installation and will provide suggestions for developing the new, in-demand services.

Current technological developments are providing the industry with an enormous boost. The entire supply chain has to develop skills to satisfy the demands of this market.

SAUTER has positioned itself well for these changes. The modulo 6 range has the power and technology needed for integrating into the world of cloud solutions and IoT. modulo 6 also satisfies the requirements of cybersecurity and has been developed in accordance with the IEC 62443 standard.

Bernhard Inniger / Managing Director / SAUTER Schweiz

1.) I regard the seamless integration of classic building automation (IoT) to be the most important innovation. This transformation from being just a buzzword into reality. It will enable intelligent models in future.

2.) The Internet of Things must essentially offer customers the opportunity to rate this benefit if they are able to interpret the recorded data and decide on future measures or investments and, as a result, save costs.

3.) Rapid technological development runs counter to the stability of building automation systems. While replacing an office PC or tablet is a matter of course for our customers, the same equipment is expected to last for the life of building automation systems. modulo 6 fulfils this dual remit of stability and flexibility. The importance of standard PC components in systems is therefore easier to replace. Backwards compatibility provides further advantages for existing customers. The new systems are simpler and more cost-effective.

John Zwaan / Managing Director / SAUTER Nederland  
SAUTER continues his role as trendsetter. With modulo 5 SAUTER introduced as one of the first Bacnet/IP DDC stations on the market modulo 6 will bring us the connection and integration with IoT

- 1.) The perfect marriage between IIoT and Building Automation
- 2.) They expect it to work for them in an uncomplicated way and have a positive contribution to their day-to-day business
- 3.) Integrating an open protocol like BACnet into the IT environment where security aspects are of extreme importance. With the adoption of IT standard MQTT and BACnet/SC (Secure Connect) with support for security certificates at the highest industry levels (TLS 1.2) will modulo 6 be a secure and save investment for now and the future.

Mark Clinch / Managing Director / SAUTER U.K.

Connectivity, modulo 6 will reinforce SAUTER's strong open system credentials. In addition to the array of industry protocols included will be the inclusion of MQTT. This openness allows us to interact with the wider building automation market. Sharing data with third party devices provides great benefits to our customers. Modulo 6 can cost effectively utilise huge amounts of data from other systems, to ensure a high quality environment is delivered.

The number of devices connected to the Internet of Things (IoT) is forecast to triple between 2015 and 2020 to around 30 billion. People are engaged with this technology in their home environments. Therefore it is clear that they will demand the same level of connectivity to devices at work as they have at home. They will also expect the same level of security utilising simple tools, such as their smart phones or tablets, with which they are familiar.

In the past decade building automation systems have become more open and transparent, but also the challenge of ensuring that customer data is secure from cyber threats. This challenge has been a central pillar in the development of modulo 6. We are confident that modulo 6 meets the latest standards for data security, encryption and access control. This will provide our customers with the confidence that they can rely on the system securely.

Jürgen Kromp / Managing Director / SAUTER Österreich

- 1.) The solution with BACnet/SC sets a clear standard in terms of security. And the integration of IoT with MQTT allows automation solutions to be adapted perfectly for our customers.
- 2.) The user comfort improves exponentially. An exciting example of more user-friendly operation options is the increasing prevalence of voice entries.
- 3.) Among the greatest challenges for our customers are operating and refurbishing with short downtimes. With modulo 6 we are offering a decisive development: The operational know-how that has been part of the modulo 5 automation station software since 2008 can remain in use in the new generation. This continuity in the migration of systems is a clear advantage for our customers.

W. Oetlinger / Managing Director / SAUTER Deutschland

- 1.) Cloud-capability and access to the IoT provide opportunities in building automation, some of which we hardly even dare think about right now. Also impressive is the whole spectrum of cyber security. What I am particularly enthusiastic about is the high-resolution colour display for operating the I/O modules locally. And another exciting option is being able to access the automation stations via an app and Bluetooth.
- 2.) Start-ups with IoT solutions are constantly launching new ideas on the market. Modulo 6 allows us to respond rapidly to trends that are taking off and quickly push pioneering ideas in current building projects. The industry is getting smarter and continuously developing new sensors and actuators. We can integrate these via IoT and use them for our solutions.
- 3.) Buildings are becoming more sophisticated. The technology installed in them must be integrated to the highest degree, enabling properties to be operated at maximum efficiency. The solution, meanwhile, must remain user- and operator-friendly. Artificial intelligence and its intelligent algorithms will also influence this area, along with big data and analytics. This requires computer power and the relevant experience. SAUTER's employees and the new modulo 6 system generation have the answers to meet this challenge.

# Room operation to go

The new app from SAUTER places operation of air-conditioning, lighting and sunshading in the hands of apartment residents. Each iOS or Android user can regulate and monitor their own comfort zone – from the next room or while on the go

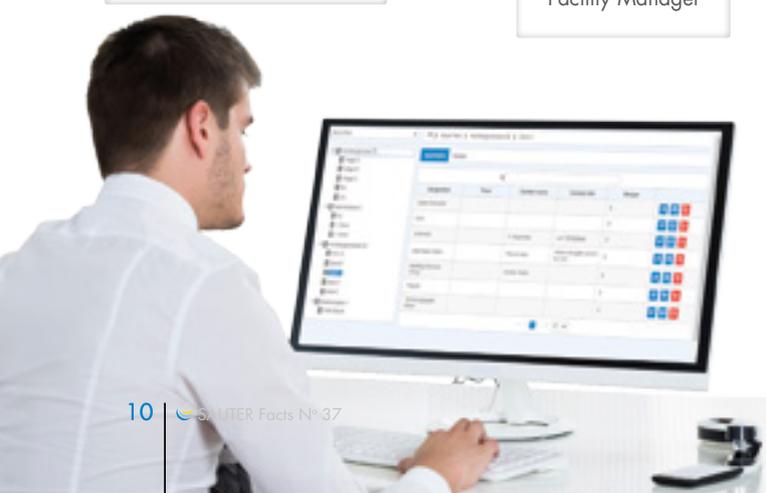
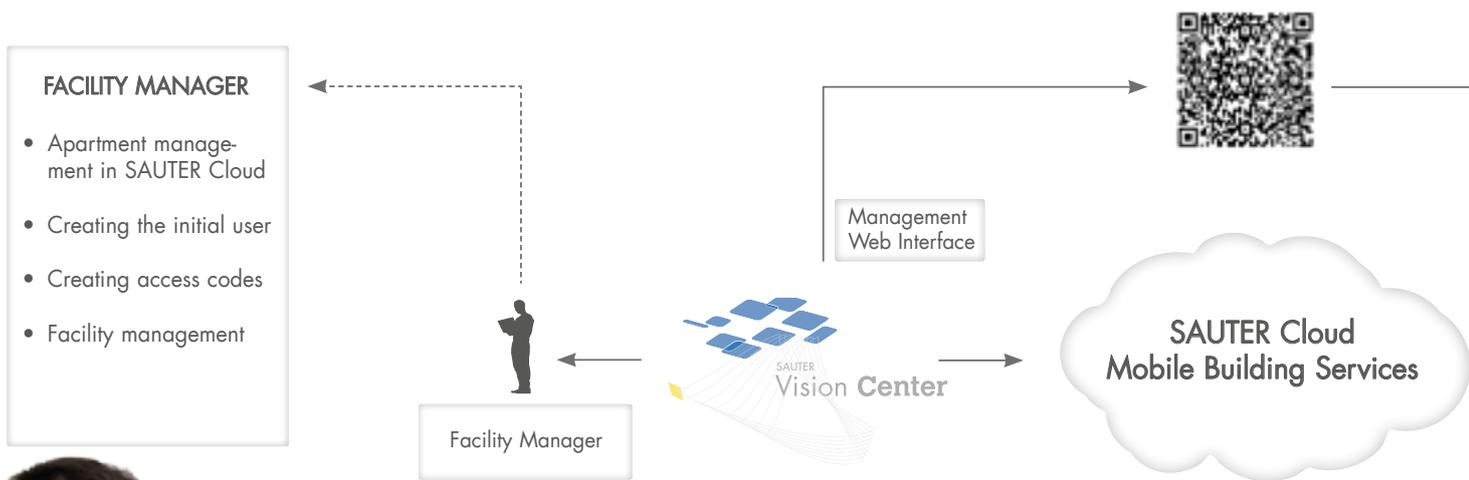
Anyone moving into an apartment full of high-tech devices will also want Internet Age room operation. Many people are used to conveniently organising their purchases, mobility or finances via an app. They therefore also expect this ease of control for room temperature, lighting and window blinds in their home.

However, the benefits of such a solution extend far beyond mere convenience for residents. When they're absent, for example, the apartment can be put into reduced-level mode remotely. This building automation function, providing demand-led control of the energy supply, helps buildings conform to energy efficiency class A of standard EN 15232.

## Ready immediately with an app and QR code

Smartphones and tablets are now trusted personal operating centres. And this even applies to room automation. These devices must feature configuration-free connection with the resident's exact apartment. There must be effective prevention of access to other apartments. So what's the solution? A QR code.

This QR code is created individually for each resident, granting them access to the functions in their apartment. After installing the SAUTER room operation app on their Apple or Android device, they scan the code once with the integrated camera. They are now identified uniquely. "Plug and play" for residents, so to speak.



### Total background control

Before a registered user can log in, the facility or property manager of the premises creates a main key as a QR code for each apartment. This is known as the master key. The tenant scans this master key with their private smartphone and immediately gains access to their home. Privileged access to the apartment controls means that they can produce more individual keys for co-tenants. They are also able to adjust the operation rights for these users at any time.

If there is a change of owner or tenant, the facility manager blocks the access rights of the previous resident. In the same step the manager uses a QR code to create new rights for the incoming resident. The solution ensures that the outgoing tenant loses access and their usage data is denied to the new tenant.

### Management integrated in SAUTER Vision Center

Room operation with the new SAUTER app is authenticated and controlled via the SAUTER Cloud. The cloud creates secure access for operating the apartment's lighting, window blinds and room climate

for every authorised user of the app. The cloud also automatically shares the room-specific configuration with the app. This means that the user can see which functions in the apartment can be controlled.

The SAUTER Cloud connects each app user directly to the local room automation system (SAUTER ecos 5) – whether they're on the go or at home. The SAUTER Vision Center operating and visualisation solution manages the interaction between SAUTER ecos 5 and the room operation app. Here it plays the key role. The leading building management system from SAUTER uses the cloud to supply the data required in the app in real time.

Management dashboards in SAUTER Vision Center also enable the facility or property manager to control the entire automation system for maintenance, troubleshooting and notifications. The apartments connected to the SAUTER Cloud are likewise taken care of in SAUTER Vision Center.

The SAUTER room operation app supports devices with iOS version 8.0 and Android version 4.4 and higher. The user interface is available in German, English and French.



Further information about this article:



# Quality is not a snapshot

SAUTER aspires to measure its products and services unconditionally by Swiss quality standards. Its quality management – developed continuously since being introduced – has safeguarded this value. Certifications offer customers greater certainty and environmental accounting represents a key yardstick when comparing providers directly.

Henry Ford could have been referring to building automation when he stated: “Quality means doing it right when no one is looking.” For building automation in particular, plenty happens behind the scenes. An insight, however, that any facility manager would probably confirm is: Quality is generally noticed immediately when it is missing.

Nevertheless, companies differ markedly in how they address the complex challenges of quality management (QM). This applies to both building operators and providers of automation solutions. When trying to see the bigger picture, common standards are quickly encountered – for instance those of the International Organization for Standardization, or ISO for short. SAUTER has been consistently applying them since the early 1990s.

## Continued engagement

SAUTER introduced the first QM system conforming to ISO 9001 back in 1991, with the Basel location obtaining certification in 1993. SAUTER’s German subsidiary followed suit in 1995. The ISO 9001 International project was subsequently launched and SAUTER swiftly promoted certification of further companies in the group.

In 2004, environmental management according to ISO 14001 and occupational health and safety management to ISO 18001 were integrated in the QM system. Successful certifications with the new standards – ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 – also followed in September 2018, including at the new SAUTER site in Freiburg. These were further remarkable milestones in a success story spanning more than 25 years. And with SAUTER’s constant refinement of its QM system, it has now reached an extremely high maturity level.

## Standards guaranteeing certainty and comparability

Continuously improving and optimising each service is an on-going task for SAUTER. As an integrated management system, QM ensures that processes are controlled. Certificates and awards give customers a means of making direct comparisons and easily verifiable certainty. The knowledge and expertise shared within the company is gathered by the system, to be used to the benefit of all activities.

The advantages are plain to see. Customers can be sure of the same level of quality for products, services and expertise, in addition to environmental protection and occupational health and safety – no matter the time and nor branch.

## A trailblazer in environmental accounting

As a company operating internationally, SAUTER seeks to produce long-term added value for customers, employees, shareholders and business partners alike. The quality standards consistently pursued since its foundation are born of this responsibility and the company mission: SAUTER’s energy-efficient solutions shall create the sustainable environments of the future.

When considering a building’s entire life cycle, one must look at not only its construction costs but also its operational expenses. Intelligent products such as SAUTER Vision Center allow these to be reduced significantly while conserving resources at the same time. However, the manner in which these products are developed and manufactured need also to be factored in.

SAUTER performs careful environmental accounting for its products. The effects, during their life cycle, of all relevant material and energy flows on the environment are thus recorded. This enables customers to compare products by environmental criteria. SAUTER was indeed one of the first providers to make this option available.

## “Standard” but still “with flair”

As the example of SAUTER clearly demonstrates, tying itself to QM systems and standards in no way means that a company must reinvent itself as a mass producer. SAUTER’s innovativeness and flexibility exist in large part because quality is an integral element of all projects right from the off. The solutions for St. Jakobshalle in Basel, the Bavaria Towers in Munich and the La Perle theatre in Dubai – described in more detail in this magazine issue – are outstanding examples of this.

Certified procedures and processes create reliability, yet ultimately the people involved are crucial to the quality of overall solutions developed individually. That's why daily, personal contact between employees, customers and partners remains very important at SAUTER. These informal "daily quality audits" are a constant driver for expanding expertise. They also improve everyday business activities continually. This results in more dependable solutions with higher investment security – completely in tune with SAUTER's 100-year-plus tradition.

### Quality, environment and occupational safety

#### Quality management EN ISO 9001:2015

Quality management applies to the entire SAUTER Group.

#### Environmental management EN ISO 14001:2015

- Environmental protection characterises all processes.
- In development and production, environmentally friendly behaviour leads to an improvement in environmental performance.

#### Management for safety and health at work EN ISO 45001:2018

Occupational safety and health protection: Our employees can rely on it.



# “Digitalisation will have an impact on all our everyday, professional and societal processes that we can’t even begin to imagine.”

In this interview with SAUTER Facts, Prof. Dr.-Ing. Martin Becker from the Institute for Building and Energy Systems at Biberach University of Applied Sciences expresses his views on topics such as the differences between energy effectiveness and energy efficiency, the interaction of smart buildings, smart cities and smart regions as well as new requirements for the training and further education of the specialists of tomorrow.



**The challenges of climate change, energy efficiency and reducing CO<sub>2</sub> footprints have characterised the field of building automation for many years. There has been a distinct learning curve regarding energy efficiency. What are the future possibilities?**

Energy efficiency will continue to be an indispensable pillar for achieving the goals of transforming energy systems and sustainable construction. However, its big sister – energy effectiveness – should be given far more attention. In practice, both of these terms are often used as synonyms, but they actually mean different things. The guiding principle should be: first energy effectiveness, then energy efficiency. Effectiveness demonstrably means that the correct things have been done, i.e. things have been planned and built correctly. Efficiency comes after this, i.e. the correct things are also correctly (efficiently) operated. Effectiveness means, for example, thinking and acting more in terms of overall systems. Components and devices are to be appropriately integrated as sub-systems in a finely-tuned overall building and energy concept. Typical examples of this are integrated heating and cooling concepts or integrated energy systems, with e.g. geothermal energy, heat pump systems and concrete core activation. These are to be automated as overall systems and operated as optimally as possible. In this context, I would also make reference to the system automation that builds on the automation of the individual components and individual systems and integrates these into an overall system.

## **Is there a panacea for achieving energy effectiveness and energy efficiency and ultimately reducing our CO<sub>2</sub> footprint?**

There is most certainly no panacea for this. In my opinion, within our sector – the construction industry – there is still a lack of expertise and applied knowledge in many cases, which can be remedied by the possibilities that contemporary automation and information technology have to offer. Energy efficiency in building operation depends on automated system and energy monitoring, for instance. Using this, operators can quickly detect the efficiency potential in current operations and continuously develop this on a permanent basis, pursuing the concept of a closed energy management cycle. This must already be implemented as a product brief in a building’s requirements planning as an additional planning framework for all specialists.

## **Without massive efficiency gains in the building sector, the overall project of energy transition will not be successful. What challenges do we face?**

Unfortunately, in many of today’s building projects the same basic dilemma continues to dominate: that building costs and operating costs are viewed separately. The treatment of life cycle costs as expanded profitability

considerations must be taken into account more during planning – also through legal regulations if necessary. In this scenario, the operating costs occurring over the many years that the building is in operation would be better integrated in the planning stage. There have already been signs of this happening in practice. For example, building projects for the state of Baden-Württemberg that exceed a certain investment budget are required to introduce technical monitoring for quality assurance and energy optimisation. This monitoring deploys AMEV recommendations and VDI 6041 as guidelines. A technical basis for the continued recording and automated assessment of relevant energy flows is, for example, the definition of technical requirements for suitable metering concepts, MCR technology and automated software tools. Starting in 2019, Biberach University of Applied Sciences is planning to participate in a three-year pilot project as part of accompanying scientific research.

**The greatest potential for conserving resources and reducing energy costs lies in the efficient use of energy. Where are future solutions going to be found?**

In general, we have to think in a much more holistic way about sustainable material and resource management in cycles that are as closed as possible, completely in tune with the cradle to grave concept. The topic of energy management and energy efficiency

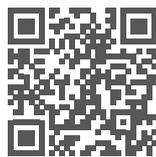
is an important component, yet there are many other material flows and cycles that must be considered. This not only concerns individual buildings, but particularly the interaction of several buildings in a larger district such as a campus, industrial zone or industrial park, residential district or city neighbourhood, right up to overarching municipal and city concepts. In parallel with urban development concepts (smart cities), new cooperative concepts uniting townships and urban centres (smart regions) are becoming increasingly important for an efficient, resource-saving and at the same time socially acceptable usage of space in rural areas. It is precisely here that the topic of mobility presents a great challenge, which must be appropriately linked and harmonised with the topics of energy and climate conservation and quality of life.

**Technologies such as renewable energies, control strategies and digitalisation are expected to offer solutions here. What influence does digitalisation have on planning and construction?**

Digitalisation will have an impact on all our everyday, professional and societal processes that we can't even begin to imagine. We are also experiencing the parallel transformation of transitioning to a digitalised society. As a result of this, entirely new business models are emerging in building

and energy technology, which are based on traditional building and energy technology and are closely linked to cloud-based services and service concepts. In my view, it is worth looking beyond this to the topic of Industry 4.0, with its connected new system solutions and new business models that are based on cyber-physical systems (CPS). The current rapidly developing areas of virtual reality/augmented reality (VR/AR) will also significantly change today's planning, building and operation processes and workflows. I am thinking in particular of improved start-up, maintenance and service concepts that are closely connected to the development of new hardware and software solutions, such as in the area of enhanced sensor and actuator technologies. In my opinion, there will be more planning and building of digital turnkey and modular systems in construction and building technology due to the intensified move towards BIM methodology. Building and plant systems will arrive at the construction site as modular, prefabricated construction kits, will be assembled into systems on site and increasingly be put into operation in an automated manner. This trend is already clear for many plant systems such as refrigerators, heat pumps, cogeneration plants, ventilation technology compact units with integrated MCR technology and communication interfaces, and it will also be significantly expanded in the coming years to the planning and prefabrication of heating

Further information about this article:



and HVAC installations. The responsibilities of traditional building automation planners and implementers will increasingly move to system planners and system integrators. The previously suggested new business fields for building operation will build on this.

**What should be given special attention here?**

For these new developments and modified business processes there will be a need for targeted further education programmes, as well as a particular need for newly- and differently-qualified young people. From my perspective, there is a huge challenge facing the training and further education of the next generation. Here it is a case of the required skill profiles being jointly developed in the appropriate circles and committees, and being promptly introduced into future-oriented training and further education programmes.

**What can building intelligence still revolutionise?**

The question is, what do we mean by the term building intelligence? In my view, there is no such thing as an intelligent building, but rather at most an intelligently planned, built and sustainably operated building. The specified requirements of the building contractor or investor are to be satisfied as autonomously as possible with the highest quality possible. For me this is the reason, and at the same time the challenge, for the use of suitable automation and information technology. I associate this with the term 'smart building', which I prefer to the terms intelligent building or building intelligence.

**What megatrends will there be?**

This is of course like gazing into a crystal ball. I am convinced that digitalisation as a cross-sectional topic in our society and our economic system – and also in our scientific

system – will continue to be very influential in the coming years. On the other hand, digitalisation shouldn't be an end in itself but should ultimately be used for the well-being of people and in the service of humanity. It would be desirable if the goals of sustainable development, such as those formulated by the United Nations in Agenda 2030, were taken more seriously in this regard. In addition to the topics already discussed, such as climate protection, energy transition, sustainable cities and townships and high-quality education, topics such as health and well-being, sustainable consumption and production, as well as new partnerships for achieving these goals, are also listed here as objectives. Whether these will really be pursued seriously on a large scale or only tested and practised in individual instances, as has previously been the case, is something the future will reveal. It would be desirable for us if these sustainable development goals were also developed as a megatrend.



\*...Political targets of the United Nations (UN) to ensure sustainable development on economic, social and ecological levels. The targets were drawn up based on the development process of the Millennium Development Goals (MDGs) and became effective on January 1, 2016, for a period of 15 years (up to 2030). Source: Wikipedia

# Augmented Reality commonplace in Geneva

QUARTET, a lively centre for trade and industry, is being developed on the site of the former Hispano-Suiza factory. Here weapons and machine tools were once produced. Thanks to automation and management solutions from SAUTER – and the use of Augmented Reality – the buildings are being constructed to the latest standards, thereby meeting the most stringent requirements.



Located in the Charmilles district of Geneva, the site has had an eventful history but is now looking forward to a new chapter. There was once a racetrack here, before it later accommodated the Hispano-Suiza factory. Today the area is home to the QUARTET development – a showpiece project where trades, service providers and industrial enterprises can be found. Construction has been performed in phases, with tenants already moving into the first buildings in late 2017.

## Intelligent solution for a large area

The client sought an intelligent room automation solution, reliably controlling air-conditioning, ventilation and heating in 12 buildings over 47,000 square metres in total. Furthermore, the package had to feature compatibility with various communication protocols and collect data for comprehensive energy consumption displays.

The decision therefore went to EY-modulo – a modular SAUTER product family – and SAUTER Vision Center. This mix supports communication via BACnet/IP, Modbus and M-Bus and will allow third-party systems to be fully interconnected in future.

## Hand in hand: Augmented Reality and building automation

New technologies such as Augmented Reality are gaining importance for building automation too. A large project like QUARTET sees computer-assisted Augmented Reality developing new options with regard to maintenance and repairs.

The planning office Amstein+Walthert Genève got together with SAUTER and devised a Proof of Concept for operating the cooling system. The solution implemented includes the BIM revision model, the use of Augmented Reality and the integration of all systems into SAUTER Vision Center.

The Augmented Reality application is a mobile solution for tablets and smartphones. It combines BIM data with data from SAUTER Vision Center to provide a real-time visualisation. The link-up between SAUTER Vision Center and the Augmented Reality app is performed by the open REST API web services.

This app is an effective method of improving the service from the maintenance team. It locates exactly the equipment requiring maintenance and supplies all the technical information necessary for the task. There is a reduction in the operating costs and time needed for maintenance and repairs – proving that building automation and Augmented Reality is a highly effective combination.

Further information about this article (in French):



# SAUTER Vision Center on the world's largest trade fair grounds

On the road to our digital future there's no avoiding Deutsche Messe AG – whether for the Internet of Things, Industry 4.0 or Integrated Industry. Since last September, the trade fair company has used the latest web-based building management solution (SAUTER Vision Center) in 16 of the 24 exhibition halls, pursuing its own digital transformation.

Deutsche Messe AG has been an impressive success story over the last 70 years. Since organising the first export trade fair in 1947 it has become the biggest trade fair service provider in the world.

Today upwards of 1.5 million people visit HANNOVER MESSE and another 35 exhibitions on the world's largest trade fair site in Hanover. The state-of-the-art halls, created by renowned architects for the EXPO 2000 world fair, set the international standard.

For more than 30 years, Deutsche Messe has trusted SAUTER's pioneering technologies to create an optimum climate and ensure energy-efficient operation. With its excellent performance and reliability, the building automation specialist has repeatedly seen off strong competition. So much so, it recently implemented SAUTER Vision Center – the web-based building management solution – in 16 of the 24 trade fair halls.

## Intelligent solution for a huge expanse

For the renewal of the management level, Deutsche Messe was particularly keen on a platform-independent, web-based software solution. The modularity of SAUTER Vision Center means that it supports all current security standards. The intelligent solution was also dovetailed with the customer's existing IT infrastructure.

The updated building management software allows users to log in to the operating system and SAUTER Vision Center with the same user data. This is an additional plus for operators. The HTML5 standard provides facility managers with a convenient user interface on any PC, tablet or smartphone. All systems can therefore be run remotely and operations visualised.



### Optimum use of resources

Over the entire exhibition grounds, SAUTER Vision Center records and monitors vast information – upwards of 34,000 data points in more than 900 plant schematics – from systems of different generations. Facility managers can access the operating data of all equipment, regardless of location and time. If any parameters need adjusting, this can be performed remotely.

Thanks to SAUTER's innovative technology, the German trade fair operator can rest assured that the resources on its extensive premises are always managed carefully. SAUTER has therefore been true to the motto of Deutsche Messe in wishing to actively shape the future.

### Deutsche Messe AG

The trade fair company was founded in Hanover in 1947 on the site of a former aircraft plant. It has more than 58,000 square metres of outside space and 463,285 square metres of indoor area encompassing 24 halls and pavilions.



SAUTER highlights 

Further information about this article:



# Munich's state-of-the-art real estate ensemble to be the city's future portal in the east

Bavaria Towers is one of the most spectacular building projects in Munich in recent years. Each building is certified as sustainable and equipped with cutting-edge building automation from SAUTER – embedded in the superlative architecture of Spanish architects Nieto Sobejano Arquitectos from Madrid.

The Bavaria Towers development consists of four buildings and is the first major high-rise project to be approved in Munich for years. Three office towers and a hotel tower offer fantastic conditions for companies and guests, whose priorities are first-class infrastructure and comfort. Designed as Green Buildings, they form a harmonious ensemble that will enhance and reshape Munich's eastern edge.

## **Bavaria Towers ascending high**

Ranging from 46 to 83 metres in height, the high-rise development reaches for the Munich sky. It is therefore visible from some distance in the city and when approaching on the A94. Its curved forms and transparent facades bear the hallmark of the Nieto Sobejano Arquitectos office in Madrid, the winner of the architectural competition. Almost 400 million euros in total are being invested in the project. It has a rental area of 62,000 m<sup>2</sup> and will be the new eye-catcher in Munich's Bogenhausen district. This part of the city will soon be home to more interesting building projects, attractively combining living, leisure and work. Munich's east is modernising.

## **SAUTER product quality and dependability the key to success**

Along with striking architecture, the planning also earmarked user comfort, quality and energy efficiency. With its impressive solutions and reliable execution during the short construction phase, SAUTER won the approval of both building contractors for providing the building automation. Two of the buildings were put up by PORR Deutschland GmbH and the other two by Implenia Hochbau GmbH. Each building has individual energy and room concepts and so customised control strategies are used. These include weather forecast control, comprehensive consumption recording with energy management and the Green Building monitor. Technical solutions are rewarded with the high sustainability standard, verified in the building certification as per DGNB and LEED.

## **Comfortable, efficient network in the room**

The second-highest tower, known as the Blue Tower and 72 meters high, is particularly remarkable. The options offered by networked building automation are exploited to the full here, with a range of benefits for users. The new, innovative touch room operating unit – SAUTER ecoUnit365 – is the convenient user interface to the technology (human – machine). The flexibly adjustable equipment make it intuitive and easy to operate. A multi-sensor installed in the ceiling detects occupancy and brightness. The user therefore controls their own "command centre" conveniently and energy-efficiently throughout the working day. The state-of-the-art LED lighting is automatically regulated with constant brightness. Sunshading autonomously ensures reduced sunlight and eliminates glare. When the user is absent the systems switch to the economical set-back mode. No interventions are actually required unless the user wants to deviate from the standard program.

The demand-led system operation enables energy costs to be decreased. This is because the energy consumption of a building is determined by the operating time, room temperature and lighting specified by users in the rooms. But how can the savings made via demand-led, customised system operation be evaluated? The European EN15232:2012-09 standard (Energy performance of buildings - Impact of Building Automation, Controls and Building Management) enables this question to be answered. Cost savings made through room automation and central building management can also be estimated. In the case of the Blue Tower, the integral building automation improves the energy efficiency of the building from category C to B as per the standard. When compared to a control system that does not combine and optimally balance the different climate systems, sunshading and lighting, this leads to an estimated energy cost saving of 20 % – a considerable figure over the long usage phase of a building. But best of all, this happens completely automatically and unnoticed via sophisticated operating modes.



### Cutting-edge control technology ensuring interconnection

Technical solutions and management systems with intelligence are an essential component of the building operation. This is particularly the case for complex buildings with a high proportion of glass, and system technology with complicated interconnections. In the Blue Tower, SAUTER Vision Center also reduces the work needed to remodel the office space. When room divisions are being changed, only an adjustment within the air-conditioning software is necessary. Room segments are grouped into new rooms using the "Moving Wall" function. The adjustment can be made during operation with the air-conditioning thus immediately ready for use again. This saves time and money and a physical change to the hardware within the rental area is not required.

### Generating central energy using geothermal energy

In the Blue Tower the heating is provided through a 110 kW ground water heat pump and 650 kW district heating connection. The heat pump is used exclusively for heating the component activation. Long operating periods occur for warming the concrete ceilings. This type of base temperature regulation is achieved efficiently and sustainably via the very low temperature difference between the well water and heating supply. In the summer time the ground water directly cools the component activation through a heat exchanger. If the well water is not sufficient, the compression refrigeration machine, with a cooling output of 780 kW deployed for the rest of the building, is used. When using the ground water, the following should be considered: the energy balance between the input and the output from the ground must be compensated over the course of the year. This is continually monitored by the SAUTER energy management system and verified at the end of the year.

### Integral room automation and weather forecast providing a consistent room climate

In the Blue Tower the weather forecast is used to control the base temperature regulation. The effects of a temperature change are experienced in the room only 8 to 10 hours later with this system. The integration of the weather forecast therefore helps to condition this slow heating and cooling system almost seamlessly. During spring and autumn in particular, when the Föhn winds sometimes cause sudden weather changes in Munich, low-energy climate control in the building is needed. While users are present, quickly adjustable underfloor convectors respond to individual requirements. Room operating units give users direct control of the heating and cooling devices. Four climate zones are provided for each storey to enable a sufficient, precise fresh air supply. Variable VAV controllers create the air volume flow and close outside the usage period. This also considerably reduces energy costs.

### Energy management and building certification

Meters in the primary and secondary networks of the energy supply provide comprehensive consumption recording. This makes the building performance verifiable and enables further optimisations. This system, which is also used to establish the energy consumption for the LEED certification, ensures that all meters are continuously read and evaluated. The system operator is kept up to date via short, informative reports and alarms. Also integrated in the system is the 'well log' where the ground water is balanced for heating and cooling purposes. Users – be they energy technicians, amateur energy consultants or those with no particular technical interest – can check the Green Building monitor in the lobby to view the system operation and CO<sub>2</sub> footprint of the building. This will also provide information about correct use of the system technology – a positive motivation to avoid overriding the heating and cooling setpoints and causing increased consumption.

### Prime example of all-round expertise

SAUTER's overall solution adds to the uniqueness of the high-rise ensemble in the east of Munich. It also has an advantageous effect on user comfort, energy costs and sustainability. Furthermore, as of September 2018, SAUTER FM is now on board as the technical operator. Another success that confirms the strong performance of SAUTER. SAUTER FM is currently involved in the final building phase and, depending on how completion runs, will be briefed on the technology in the individual buildings. Thus, the start-up team is already working on the tenant pool and seamless transition to the operation phase. A demanding and exciting period for SAUTER FM too. Watch this space!

Further information  
about this article:



# From an aquatic theatre to lofty heights in Dubai

The Al Habtoor City development – featuring three hotels and three residential towers – is a reference project for the building automation specialist SAUTER. Its systems show off their full capabilities in both the desert climate and a spectacular aquatic theatre.

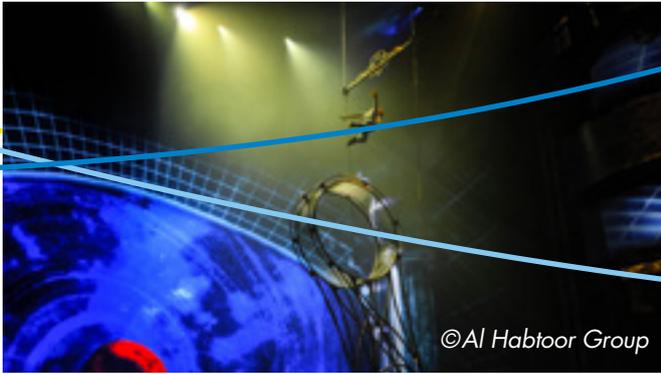
Few cities in the world could lay claim to having such a concentration of dazzling construction projects: Dubai, the fast-growing city in the emirate of the same name, is home to some of the world's most famous structures. When Al Habtoor City is completed in the coming year, yet another project will be setting new standards in hotel as well as residential construction. Visitors can already witness the impressive performance of the building technology with a trip to the La Perle aquatic theatre. Here, sophisticated effects put the heating, climate and ventilation technologies – including the control system – through their paces.

The ensemble of Art Deco buildings numbers three hotels and three Residential Collection towers. It is situated on Dubai Water Canal, just a few minutes' drive from the famous Jumeirah Beach. The three skyscrapers – the Noora Tower and Amna Tower, both with 73 floors, and Meera Tower with 52 floors – feature apartments with cutting-edge facilities and temperature-controlled environments. This level of comfort is also down to extensive use of SAUTER's building management systems.

## **Spectacular special FX**

SAUTER technology was chosen primarily because it offered an all-round solution for the three residential towers, La Perle theatre and the retrofit of two hotels in Al Habtoor City.





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In the La Perle aquatic theatre, the sensational mix of artistic performances are reflected – in every sense of the word – in part through the interaction of SAUTER’s systems with other systems. Impressive stunts and special effects which leave many spectators speechless.

There is a pool centre-stage in the round theatre which holds some two million litres of water. Performances include acrobatics, aerial acrobatics, diving and even motorcycle shows up on high. The entertainment is also enhanced through trying out various water effects.

**Controlled environment**

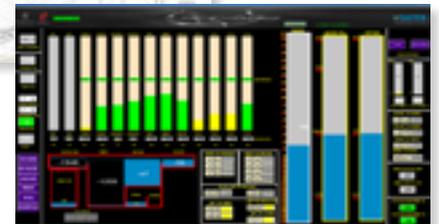
Water from the central pool floods the entire stage for a while up to 30 cm high before it must rapidly drain away again. Numerous

valves and pumps are employed, directly monitored by the SAUTER building management system. The water temperature and pH level are also regulated constantly. This ensures, in the complex network, a high water quality.

While five motorcycles race through a steel ball suspended far above the stage, the building technology controls the extraction system. This removes the harmful exhaust fumes from the theatre. SAUTER worked hand-in-hand with the La Perle team to achieve optimum interaction between the systems. Fast response times and pre-programmed scenarios enable show operators to create rain, thunderstorms and swirling ground fog. Astonishing effects that would be impossible, were it not for intelligent technology.



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Further information about this article:

# Game, set and match

The conversion and refurbishment of St. Jakobshalle, the largest event building in Basel, took three years to complete. The demanding project also included the renewal of SAUTER's building automation system.



Few other places in Basel stir so much emotion in the hearts of the city's residents and those of the surrounding area as St. Jakobshalle does. The arena was built between 1974 and 1976, and has welcomed countless sporting greats and stars from the world of pop and rock music since its construction. World and European championships and a wide variety of top-level sports tournaments are held there, as well as annual general meetings of global corporations. It also has the extensive use of SAUTER technology to thank for this, as this technology has proven itself time and time again over its many decades of on-site operation.

Recently there was a meeting of famous tennis stars at St. Jakobshalle at the ATP Swiss Indoors tournament in October 2018. International star Roger Federer successfully won the acclaimed tournament title, much to the delight of many spectators. A victory that was only made possible by the dedication of several companies working hand in hand to ensure the refurbishment was completed in time. This

included SAUTER, whose components and building automation system had already been integrated into the arena at the time of construction. As one of the companies involved right from the conception of St. Jakobshalle, SAUTER also participated in the modernisation of the largest event centre in the region.

## **Demanding interior**

The ravages of time had also left their mark on the distinctive concrete building, so after some 40 years it was high time to upgrade the long-serving arena. The Canton of Basel-City allocated over 110 million Swiss francs for the refurbishment of St. Jakobshalle – a necessary investment that is also intended to safeguard the location from its competitors. This is because Basel is expected to play host to even larger events in the future. Previously, only 9,000 people were permitted in the arena, now that number is 12,400. This also poses a challenge to the interior's technical equipment. This is due to the requirement that visitors should be able to enjoy comfortable

temperatures and a precisely-controlled climate in the arena, regardless of the season. A task which will be reliably performed by SAUTER's proposed solution.

The refurbishment project, which began in 2015, was carried out in three stages. The aim was to enable the venue to host events such as the Swiss Indoors, which is one of the most important events for St. Jakobshalle. Not only was reliable operation during the tennis tournament a key goal, the systems were also designed to be integrated with each other to the greatest extent possible.

#### **Almost all SAUTER field devices in play**

The modernisation itself was very elaborate. When glancing at the technical equipment in St. Jakobshalle, it becomes very clear that virtually all standard SAUTER field devices were deployed – from damper actuators and sensors, to valves and of course the SAUTER modu525 modular automation station, of which 50 units were installed. The replacement of 17 complete cabinets was another part of this demanding project. The previous system from the SAUTER EY-modulo 2 series made way to the SAUTER EY-modulo 5 and now satisfies all the requirements of an open, modular and cross-platform building management system.

After the successful Swiss Indoors 2018, one thing is certain. The next events at St. Jakobshalle can proceed as planned, including the next edition of the world's third-largest indoor tennis tournament. And regardless of which tennis star serves their way to victory in the next final in 2019: SAUTER will be close at hand.



Further information about this article (in German):



# The optimum SAUTER climate for two very different sisters

In the world-famous northern Russian city of Saint Petersburg, often referred to as “The Venice of the North”, visitors and sensitive art treasures benefit from SAUTER technology in Saint Isaac’s Cathedral and the Cathedral of the Resurrection of Christ.

The Cathedral of the Resurrection of Christ in Saint Petersburg has many names – it is also known as the Church on Spilled Blood, the Church of the Saviour and the Church of the Saviour on Spilled Blood. It is the second most famous building in Saint Petersburg after Saint Isaac’s Cathedral, in a city which is home to a wealth of magnificent buildings. But it is not only their radiance, shining far beyond the former city of tsars, which connects these two cultural monuments. A common denominator is also successful use of SAUTER technology based on modulo 5 automation stations – the company’s most powerful building management system to date.

In terms of architecture, the two cathedrals could hardly be more different. Yet both benefit from the precise climate control enabled by the SAUTER system. The smaller of the two sisters, the Cathedral of the Resurrection of Christ, is the sole major church building in the centre of Saint Petersburg. Italian or classical Western architecture was the norm in this city – founded in 1703 by Peter the Great – until the church’s construction in the late 19th century. This architecture, however, does not feature in this building. Instead, it was designed in the style of Moscow’s Saint Basil’s Cathedral and is now under the authority of the Ministry of Culture of the Russian Federation.

After approximately two years in the planning, a complete modernisation of the technical systems within the church began in September 2018. This work is expected to be completed by December 2019.

## Protection for art treasures

SAUTER modulo 5 automation stations ensure an optimum interior climate not only for the thousands of visitors but also for staff. In addition, they provide further controls, not least of the air curtain systems at the impressive church doors. This cutting-edge technology will allow the valuable mosaics, stone carvings and marble ornaments to be much better protected in the future. The improvement in energy efficiency is also a huge plus for the building.





While the church is set to receive its own building management technology, connection to a central management system is also planned. This existing central system is controlled with the SAUTER SCADA software from the client's main location of, which is situated on the famous Nevsky Prospect boulevard. It is, in fact, already the home of the central building management system for Saint Isaac's Cathedral.

### Exemplary work

The doors also opened up to SAUTER in Saint Petersburg because of its experience with historical buildings. In the case of the Cathedral of the Resurrection of Christ, it was SAUTER's success at Saint Isaac's Cathedral – the largest cathedral in Saint Petersburg with space for more than 10,000 people. The company received the commission for Saint Isaac's Cathedral in 2015, in part due to the highly effective use of SAUTER systems at Berlin Cathedral and, again in Berlin, on the Museum Island.

The scientific modelling by Saint Petersburg Polytechnic University of air currents in Saint Isaac's Cathedral demonstrates just how successfully this technology operates. This modelling formed a basis in the planning stage and was subsequently revisited after installation. Optimised installation points for the temperature and humidity sensors, and efficient regulation of the supply air volume (slightly overheated), means that a visit to this magnificent building will be a pleasure in future too – complete with its perfect climate.

SAUTER highlights 

Further information on this article (in German):



# A smart building on the outskirts of Paris

The SHIFT office complex is situated in both Paris and the commune of Issy-les-Moulineaux. This, however, is not the only special aspect of the building which is receiving cutting-edge technology courtesy of SAUTER. The headquarters of Nestlé France are moving into this new building.



Two addresses, a name that speaks for itself and modern architecture: This is what characterises the SHIFT complex, straddling both Paris and the adjacent commune of Issy-les-Moulineaux. A total overhaul of the technical features of these light-filled premises is currently taking place. SAUTER technology will also be on board, playing the key role in the building automation.

A building management system is being installed – SAUTER EY-modulo. It offers the benefits of innovative and optimised climate control. Furthermore, it is equipped with multifarious alarm functions and can be scaled without limitation. This is an open-design BACnet system allowing efficient integration of third-party devices and applications. The complex will also feature SAUTER Vision Center. This web-based building management solution (HTML5-standard) means that employees and visitors will get an even greater sense of comfort and well-being.

The decision was made in favour of SAUTER solutions, as they offer an interface to the smart building applications used in this innovative project. In addition to the control of light and heating comfort, a whole range of services available in the building can be used via a smartphone. With this flexible solution for smart buildings, SAUTER caters to the demand for a new way of working.

When approaching SHIFT – either from the Parisian side or from Issy-les-Moulineaux – the vertical white wings are visible immediately. This irregular architectural shell adorns the building, bringing the location to life. Transparency comes from the extensive glazed façade – natural light reflected off the slats and permeating the interior spaces.

## Pushing technical boundaries

SHIFT's interior architecture is modelled on an industrial style, combined with wood and warm colours. Inspired by the outer façade,



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the hall is invigorated by the same curved wave effect, taken up by the vertical wooden-slat wall panelling. The space opens up, stretching from floor to roof. A real eye-catcher, but not without challenges for the building technology.

SHIFT: 46,000 m<sup>2</sup> of office space over seven floors and accommodating 3,600 people. The renovations have set it well on the path to becoming a Smart Building – featuring energy efficiency with a modern touch. SHIFT has opted for geothermal energy in its goal to reduce energy consumption. SAUTER has played its part in this success story, thanks to its experience in building automation.

#### Versatile solution

The SAUTER EY-modulo-5-system family with ecos504 room automation station equates not only to providing comfort, it also optimises energy consumption through using precise controls.

The flexibility of the modular solution reaps great rewards. A presence function, window contact monitoring, demand-based ventilation, light and window blind control and time-dependent setpoints: offices and common areas are always supplied with the correct lighting, heating, cooling and sunshading. This is all possible due to the SAUTER system.



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**Proprietor:**  
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