



## Customer References

Gained in practice, for use in practice:  
Success stories with INSYS icom

SecurITy  
made  
in  
Germany  
Trust Seal  
[www.teletrust.de/itsmig](http://www.teletrust.de/itsmig)

SecurITy  
made  
in  
EU  
Trust Seal  
[www.teletrust.de/itsmie](http://www.teletrust.de/itsmie)



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## Legend

	Water and Enviromental Technology		Trade and Logistics
	Power and Energy Supply		Transport and Infrastructure
	Renewable Energy		

# Process control systems regulate waterworks and sewage treatment plants



## Initial situation

### Dispersed locations and varying control systems

Barely anyone talks about plants for the supply of drinking water or treatment of wastewater, yet they are of immense importance for both consumers and business. Fortunately, untreated wastewater or water shortages are not a common occurrence. Security of supply is ensured by the interaction and precise control of systems in our water supplies. Process control systems have to take into account the fact that waterworks, reservoirs, treatment and sewage plants are often operated in a dispersed manner and are also frequently located in remote places. Exchanging data for status information and remote control is of particular importance here.

## The solution

### Connecting the installations to a centralised process control system

AUTEC Softwareentwicklung und Hardwareplanung GmbH uses gateways from INSYS icom to connect all the water supply or treatment plants under management to various process control systems. In this solution parameters converge and the controls are visually supported. The plants are linked up via redundant paths, for example using existing WAN solutions or often also by means of a 4G connection. This means that a line failure doesn't result in any operational disruptions. Data communication between the stations in the plant network and the process control system is encrypted. Remote maintenance access for troubleshooting is also encrypted via the VPN solution provided by INSYS icom.



**#AutomationTechnology**  
**#DrinkingWaterSupply**  
**#Telecontrol**



*The gateways from INSYS icom, including the administration and VPN solution, provide us with security and flexibility thanks to comprehensive redundancy options: in the event of a failure of the DSL connection the system automatically switches to 4G – including emergency notification by email or text message. This means that we can guarantee our end customers a first-class service with reliable operation of their facilities.*

Sven Uhlmann  
Software Developer, IT & Automation Department  
**AUTECH Softwareentwicklung und Hardwareplanung GmbH**, Spiesen-Elversberg (D)

## Summary

### Security of supply, a high level of efficiency

Modular, secure and redundantly designed data communication ensures the connection and at the same time the high availability of existing plants and new installations. This enables reliable management via the process control system. The municipal operators reduce costs and maintenance work and can plan their processes more efficiently without any special IT expertise to operate the system.

## Company profile

AUTECH Softwareentwicklung und Hardwareplanung GmbH plans and implements advanced automation projects for industrial companies and municipal water management. The company's expertise lies in electrical engineering for newly built or renovated facilities for supplying drinking water and treating wastewater.

scan me!



# Data communication for renewable energy systems promotes sustainable energy transition



## Initial situation

### Challenges for system operators

Supplying power is classed as a critical infrastructure, meaning very stringent operational requirements are applied. The sustainable energy transition increases the proportion of renewable wind and solar energy, which is generated by decentralised installations that are usually smaller. These must be fully maintained and managed by the operator. In addition, renewable energy systems are increasingly being linked together into 'virtual power plants.' This involves extensive communication activities to reliably enable remote maintenance, 24/7 monitoring, administration and related services. In addition to the resulting personnel costs, the requirements for critical infrastructure also needs to be taken into consideration: geographically distributed renewable energy systems are more vulnerable than power stations to IT risks in the area of cyber security and therefore additional costs.

## The solution

### Overall management as a service for operators

The BayWa r.e. solution SystemSafe offers operators a reliable and cost-efficient all-round carefree package in the form of Communication-as-a-Service (CaaS). It includes service, hardware, network access, on-site support and standardised, remotely diagnosed fault analysis. Each system equipped with a gateway from INSYS icom communicates redundantly as required via LTE, DSL or fibre optic. Data communication with network operators, virtual power plants or for remote maintenance takes place via a secure VPN solution designed by INSYS icom especially for these requirements. In the event of faults or breakdowns, integrated remote diagnosis functions can trigger alarms in line with a wide range of criteria. Via the BayWa r.e. servers the systems are made available in line with strict criteria to authorised groups such as technicians. This enables flexible service and maintenance models with a high remote component, which in turn provides positive cost effects.

**#KRITIS**

**#EnergyTransition**

**#EnergyAsAService**



*It's only the components of INSYS icom for secure data communication that enable us to offer the operators of renewable energy systems complete maintenance and an operational safety model 'as a service'. For operators this also means that they can offer 'Energy as a Service'.*

Mohamed Harrou  
Global Head of SCADA

**BayWa r.e. Data Services GmbH**, Munich (D)

## Summary

**Operation, monitoring and maintenance all in one**  
BayWa r.e. Data Services GmbH provides answers to all the challenges in an overall management solution for renewable energy systems under the name SystemSafe. Operation, monitoring and maintenance are conveniently combined in a coherent overall system. The solution's high level of IT security and simple operation have proven themselves in practice. This is reflected in terms of customer satisfaction and customer loyalty to operators.

## Company profile

BayWa r.e. AG is a developer, service provider, wholesaler and supplier of leading energy solutions in the renewable energies sector. The company plans, builds and operates wind and solar parks, together with bio-gas plants for worldwide use. In addition to maintenance and repairs, the service includes the technical and commercial operation of renewable energy systems.

scan me!



# Optimised commissioning of combined heat and power plants



## Initial Situation

### CHP commissioning often requires DSL

Combined heat and power plants (CHPs) are used for the decentralised energy supply of large buildings and businesses. They operate cost-efficiently and in an environmentally friendly manner because they make optimum use of fuel to simultaneously generate energy and heat – this is referred to as “cogeneration”.

Remote maintenance and remote monitoring via the Internet is a critical success factor for many plants today in that they are expected to run without interruption. In the case of CHP units this is relevant even before commissioning, because approval processes with regard to the building fabric and parameterisation of facilities are geared to predefined deadlines. In this context, the lack of an Internet connection can cause not just deadline-related costs but operators may also be threatened with contractual penalties.

## The solution

### Flexible Internet connection

Systems operated by COMUNA-metall are optimised during the commissioning phase via remote mobile access, to ensure that they operate as efficiently as possible. In addition, remote access ensures trouble-free operation of the highly available supply facility for electricity and heat.

In normal operations the Internet connection is established via DSL or LAN. By means of plug-in cards (MRcards) the MRX routers used can be expanded to include 4G connectivity – or 5G in the future – to enable trouble-free commissioning even if no Internet connection is available yet. The routers can be configured in such a way that standard and fallback data communication are automatically used. The 4G plug-in card can either be removed later or retained as a fallback solution.

**#CombinedHeatAndPowerPlant**  
**#RemoteMaintenance**  
**#Commissioning**



*Our CHPs are now securely accessible via the Internet. A lack of DSL connections no longer slows us down because we bridge any communication gaps securely and reliably with mobile radio – including certification in accordance with ISO 27001. During commissioning we avoid possible contractual penalties and save valuable time with the VPN service and SIM cards from INSYS icom, because we can administer everything ourselves in one portal.*

Markus Beißner  
Service Manager

**COMUNA-metall Vorrichtung- und Maschinenbau GmbH, Enger (D)**

## Summary

### **High availability, satisfied customers, low service costs**

Thanks to flexible Internet access paths including mobile radio, CHP units from COMUNA-metall paired with data communication from INSYS icom are operationally ready from the moment of installation, can be certified and are safe and inexpensive to monitor and maintain. Thanks to diagnostic data, service technicians only need to be on site in actual problem cases or for planned operations. Management of the facility including parameterisation or predictive maintenance is conveniently carried out remotely.

## Company profile

COMUNA-metall Vorrichtung- und Maschinenbau GmbH produces highly efficient, gas-powered combined heat and power plants as well as complete heating centres and decentralised energy supply networks with combined heat and power. The range of applications extends from swimming pools, schools, hotels and hospitals to sewage treatment plants and industrial facilities – in other words, wherever maximum reliability is required. The service portfolio includes installation, operation, maintenance and system servicing.

scan me!



# Photovoltaics management for energy parks and small scale producers



## Initial situation

### Complexity from a heterogeneous PV environment

There are hurdles to overcome before photovoltaic systems can operate reliably and economically: subsidies are tied to hard deadlines for commissioning, while capacity expansions through additional new systems require interfaces to certified controllers on existing systems. For example, as part of the certification process, new systems on the medium- and high-voltage grid must have a power plant controller with a component certificate in accordance with VDE-AR-N 4110 or 4120. This gives rise to special requirements: for example, although the telecontrol technology may have to communicate with several grid operators, direct marketing takes place centrally. This situation needs to be resolved and a standard solution introduced such that even large energy parks and various other forms of energy generation can be combined extremely efficiently.

## The solution

### Standardised comprehensive solutions

These are based on standardised control cabinets made by deXcon GmbH, which all use similar circuit diagrams, interfaces and configurations. This allows for various forms of energy generation and purchasing options according to need and yet enables them to be combined in a standardised manner and, above all, swiftly. Routers manufactured by INSYS icom take care of data communications: data exchange between PV inverters, solar loggers and plant controls as well as remote access for servicing by the plant operator or remote shut down by the grid operator. To this can be added the modulation for direct marketing on the electricity exchange of the electricity produced. Various VPN configurations with separate encrypted communications channels can be used, depending on the intended purpose. The standardised circuit systems allow the complete router configuration to be automatically generated by software for a large number of systems.

**#PowerPlantController**  
**#DirectMarketing**  
**#TelecontrolConnection**



*Our high degree of standardisation and flexible data communications means we can provide a cost-efficient and reliable solution that makes electricity from renewable energy sources profitable and finally opens the way to an affordable energy transition.*

Michael Kondula  
CEO  
deXcon GmbH, Obertraubling (D)

## Summary

### Automated PV system management

The standardised and fully scalable integration of data communication solutions from INSYS icom provides an integrated comprehensive solution. This alleviates numerous risks faced by small-scale producers and offers simple, cost-effective scaling for large providers that can be taken forward to create an integrated control system for whole energy parks. deXcon also allows easy entry into voluntary direct marketing with plug and play interfaces.

## Company profile

deXcon GmbH is an innovative service provider specialising in sophisticated PV solutions: whether applications with complex commissioning, mixed forms of energy production or the combination of existing and new systems, deXcon offers interdisciplinary know-how for protocol integrations, certification, feed-in management and direct marketing.

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# Virtual power plants turn renewable energy operators into beneficiaries of the sustainable energy transition



## Initial situation

### The challenges of dispersed power generation

While the generation of energy from fossil fuels such as coal, oil or gas is concentrated in large power stations, wind farms, PV systems and biogas installations are usually widely dispersed. Depending on the size of the plant, they each supply comparatively small amounts of electricity. The increasing number of such plants is ensuring substantial feed-in on the electricity market. However, wind turbines need wind, PV systems need sunlight and hydropower plants need specific water levels to be able to generate electricity. These factors are often difficult to plan, and yet it is precisely here that there is a need for change, because the highest revenues are achieved through plannable and reliable supply.

## The solution

### Networks instead of power stations

Energy2market GmbH (e2m) bundles renewable energy generation plants by networking them into virtual power stations, and then carries out the marketing of the green electricity. The company acts as a trader on the energy markets, similar to energy companies, in order to market sought-after green electricity on the electricity exchange at the best price. Individual plant operators can only do this if they have high minimum quantities and a predictable and reliable supply. e2m uses communication technologies from INSYS icom to network the installations of renewable energy generators in compliance with the highest security standards and to enable data-driven control of the systems, including the resulting virtual power plants: algorithms calculate the expected feed-in power on the basis of weather forecasts, and the plants respond in line with demand via the grid frequency at feed-in points, as well as with dynamic power feed-in based on market needs.



**#RenewableEnergies**  
**#FeedinPayment**  
**#VirtualPowerPlants**



*With our virtual power plants, even smaller producers of renewable energies can make a contribution to the sustainable energy transition. This pays off for suppliers, consumers and the climate. However, it would not be possible without the gateways from INSYS icom. In addition to leading-edge communication technology, they also offer the possibility of providing local intelligence and keeping it up-to-date, which is a central element of our solution.*

Michael Richter  
Team Leader Marketing and Communication  
**Energy2market GmbH**, Leipzig (D)

## Summary

### **Renewable energies are becoming plannable**

How fast green electricity becomes successful depends on how attractive it is for suppliers to purchase it and how flexibly supply responds to demand. Thanks to the expertise of e2m, the specific management of feed-in by dispersed plants generates additional income for their operators. At the same time, networking the individual plants enables higher-level coordination and scheduling, so that the virtual renewable energy networks can be managed like a large-scale power station and achieve economies of scale.

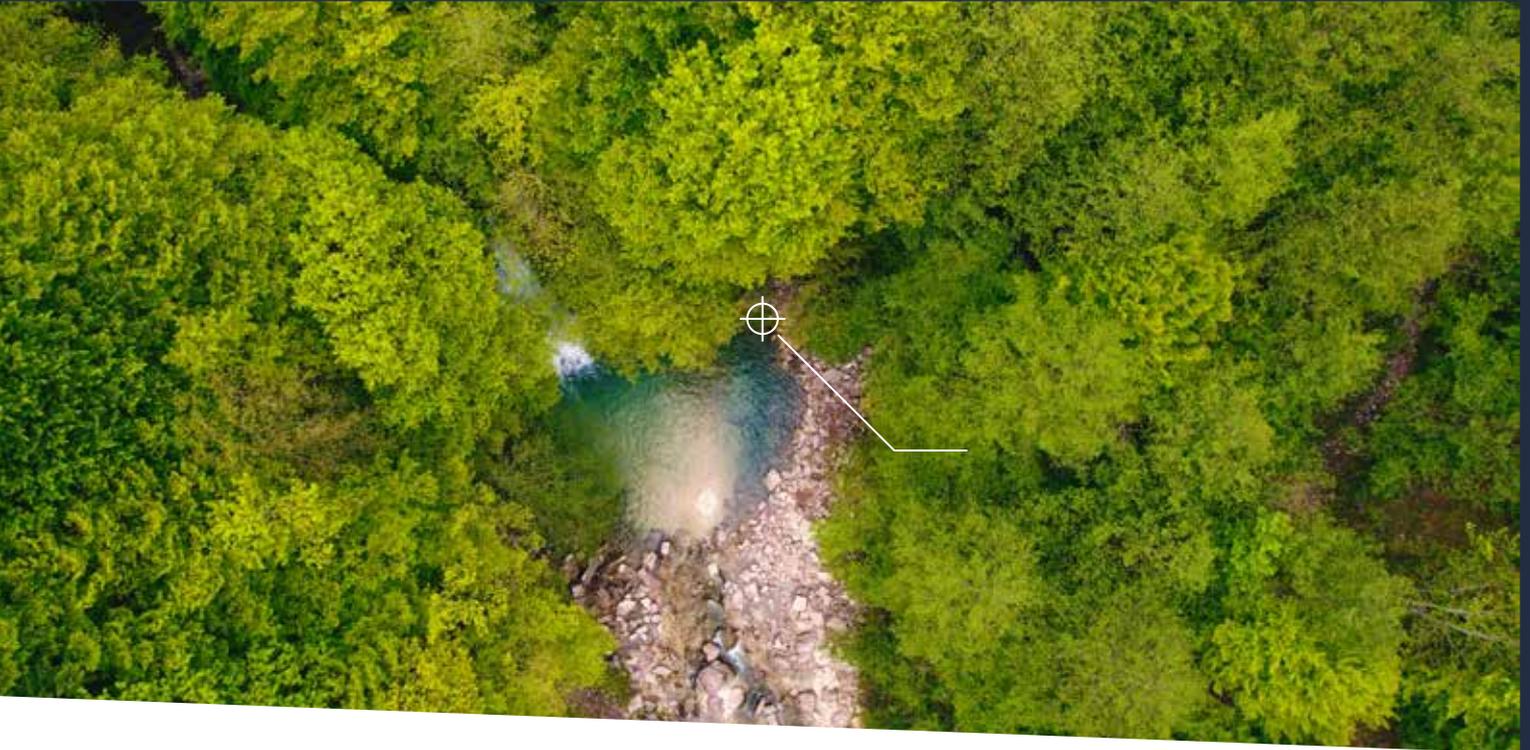
## Company profile

Energy2market (e2m), a subsidiary of the French energy group EDF, operates as an aggregator for renewable energies (RE) and currently operates 5,500 installations. The model of virtual power plants makes it possible to flexibly manage the marketing of electricity for the predominantly decentralised producers. This makes it possible to plan sales efficiently from the perspective of both producers and consumers.

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# Early-warning and monitoring systems for industry and scientific research



## Initial situation

### Measuring and ensuring cleanliness in ecosystems

Environmental data in scientific projects is typically recorded on a long-term and finely detailed basis in order to identify trends and changes, or to test hypotheses. Accurate and reliable measurement of environmental data is also necessary in industrial sectors such as mining and open-cast mining: it ensures that environmental pollution is avoided, compliance with limit values is monitored and the purity of sensitive ecosystems is ensured. This is because sewage, heavy metals or chemicals are highly dangerous for ecosystems, even in small quantities.

In this specific example, a company of consultants, scientists, strategists, and engineers all dedicated to solving the world's critical infrastructure, environmental, energy, and resource challenges required a technical solutions for measuring and recording environmental data and water quality data for localities which are sometimes remote and inaccessible. Data collection had to be reliable even in harsh environments, and partly based on the supply of solar power.

## The solution

### Data loggers that learn to transmit in an energy-optimised way

A remote interface solution for oceanographic research and environmental water quality monitoring was required to be integrated into the customer's existing measurement sensors: data logs had to be read out and measurement data reliably transmitted to cloud systems via cellular LTE/4G connection, as well as reporting back via FTP to a FTP server at the client's premises. For use in remote areas, the overall solution had to be supplied with solar energy and operation had to be secured via a buffer battery. The gateways from INSYS icom used in the solution of the marine institute read out the acquired data and transmit it to target systems. In addition, the devices have an energy-saving mode with configurable sleep intervals, in which the mobile cellular connection is idle and all processes that are not required are switched off. The energy requirement is accordingly reduced to the milliwatt range. If a fault occurs in the remote system, remote maintenance work can still be carried out during the activity cycles.

**#EnvironmentalDatameasurement**  
**#ThresholdvalueMonitoring**  
**#Environmentalmonitoring**



*Today, environmental data is monitored in real time using defined threshold values. Thanks to INSYS icom gateways with convenient configuration options that can be integrated quickly, our measuring solutions learn to communicate data via radio technologies. The energy requirements of the gateways are low enough to ensure continuous operation using a solar panel.*

Carlo Sportiello  
Managing Director  
**EXOR Oceania**, Perth (AU)

## Summary

### Sensitive status indicators

Integrating a gateway from INSYS icom into an EXOR Oceania process and interface solution creates a sensitive environmental monitoring system that can be used flexibly at any location thanks to cellular and remote connectivity availability. With its programmable hardware and software the gateway solution reliably transmits the required monitoring data in short, defined time windows for maximum energy efficiency.

## Company profile

Based in Perth, Australia, EXOR Oceania specialises in interface solutions in the field of industrial automation. The company serves customers in mining, industry, traffic control, energy supply and water supply throughout Australia, New Zealand and Southeast Asia. The focus is on HMI and embedded PLC solutions with intelligent interfaces and flexible I/O capabilities.

scan me!



# Intelligent traffic light management



## Initial situation

### Ending frustrating tailbacks at roadworks

The challenges facing traffic lights are considerable: for best traffic flow the red and green phases should not be too short or too long. Traffic lights at roadworks are also subject to demands in terms of their energy supply, i.e. battery condition and charging by solar cells as well as occasional vandalism. This means high maintenance costs due to the risk of malfunctions.

The management of major traffic light scenarios requires a high degree of know-how in that an installation has to respond to many variables: large construction machinery, slow vehicles such as buses and delivery traffic, and changes in the behaviour of road users in response to the roadworks situation.

## The solution

### Display, remote diagnosis and remote control

A battery's discharge curve can be easily predicted via its voltage level, so a replacement of the battery can be scheduled in good time – before a traffic light failure occurs. Diagnostic data provides information about possible vandalism and enables suitable measures to be taken by service technicians.

Networking the traffic light control system makes available additional data, which coupled with calendar information such as weekends and public holidays, can be used to create parameters and plan the switching cycles.

Information that becomes available at short notice such as weather data or schedules for traffic crossing the construction site can also be incorporated. Clearly laid out dashboards allow parameter changes to be made and monitored remotely.

**#TrafficLights**  
**#Dashboard**  
**#TrafficManagement**



*The router solutions from INSYS icom offer our traffic light controls threefold benefits: firstly we reduce service calls. At the same time up-to-date traffic light and status information enables predictive switching independently of the location. And finally road users spend less time in traffic jams – they benefit the most.*

Stefan Oess  
Managing Director  
**imo TRAFFIC AG**, Zofingen (CH)

## Summary

### **Demand-driven traffic light control**

In traffic light systems the ultimate goal is high availability and high through-flows: systems have to run without interruption and traffic should flow as smoothly as possible. imo TRAFFIC uses gateways from INSYS icom for the intelligent remote parameterisation of traffic light networks in line with requirements on the basis of the relevant data. A remotely accessible dashboard on the gateways displays all the relevant status values, thus enabling efficient remote diagnosis and monitoring.

## Company profile

The Swiss firm of imo TRAFFIC AG specialises in traffic lights for construction sites and bus services, with intelligent cycle and signal control. The service includes the operation and functional monitoring of the signalling systems, right across to ensuring optimum traffic flows in live with individual deployment scenarios.

scan me!



# Automated terminals offer car dealers service options after closing time



## Initial situation

### Business hours limit service flexibility

Car repair workshops or car rental companies are a prime example for the use of automated dispensers. Vehicles are constantly being dropped off or picked up. However, company service or opening hours impose limits on the customer. Offering customers more flexibility in terms of drop-off or pick-up times and saving them waiting time gives providers an edge over their competitors. A secure mailbox for car keys, as car dealerships and rental companies often have, only partially solves the problem, because it doesn't enable pickups.

## The solution

### 24/7 service terminals offering a great customer experience

Anyone who is familiar with parcel stations knows the basic principle. Flexible service terminals of various designs with sufficient storage space form the basis. In addition, they feature an access model based on existing IT systems. The system of the French IT solution provider IPSIP pulls out all the stops of digitalisation: use of an INSYS icom router for data communication via mobile networks, connection of a cloud backend on Amazon AWS, provision of local applications within a secure container in the router operating system as well as availability and status monitoring with functionalities such as an optional payment solution. The latter saves work and expense, and enables business transactions to be carried out in full. Added to this are the highest security standards in order to meet the needs of all sectors and applications: encrypted communication via VPN with individual connections, access management and central monitoring and remote maintenance/fault rectification by IPSIP.

#247service  
 #ServiceTerminals  
 #IoTSolution



*It's important for us to know that technical solutions function absolutely reliably and can also be integrated into sophisticated IT and IoT architectures at the same time. With INSYS icom as a partner, this is easy and we can fully focus on our software solution. We can roll it out to the routers quickly and configure it for customer deployments with a minimum of effort.*

Stephane Augis  
 CEO

**IPSIP Group**, Vendargues (FRA)

## Summary

### **A high-performance overall solution on just one device**

IPSIP's service terminals represent a showcase project for innovative, digital service solutions for a wide range of industries. Thanks to the combination of edge computing and cloud system, a modern network and security infrastructure and a flexible router platform, an optimal basis is created for automated service solutions that build on or complement existing company processes.

## Company profile

With two certified ISO 270001 service centres in France and Vietnam, IPSIP has been supporting customers with networked IT systems since 2009. IPSIP designs innovative solutions for the industrial, healthcare, automotive and renewable energy sectors, especially in the field of machine to machine (M2M) and service automation.

scan me!



# Management and remote maintenance of innovative water and wastewater systems



## Initial Situation

### A patchwork of existing plants

Municipal utilities, cross-municipal associations and industrial companies maintain widely dispersed and complex wastewater systems, while treating process water and operating heating plants. This involves a wide range of different parameters such as capacity utilisation, efficiency, pollutants and filling levels. System functions are monitored 24/7 to ensure continuous operation and to alert the standby service in the event of malfunctions. In the existing installations there are often highly diverse control and remote control systems in operation. In addition, technology discontinuations such as the shut-down of the 2G radio network in Switzerland mean that there is a need for action in order to continue to keep an eye on installations in the central control technology.

## The solution

### Uniform communication systems for control technology integration

The control and monitoring of pipeline networks for drinking water or wastewater require communication technology that can be used independently of the specific application.

In STEBATEC's process control systems ARAbella and REbella, the facilities involved are linked by the products of INSYS icom. The software developed by STEBATEC, which runs locally on the routers, provides the functionality for the individual application. Regardless of whether it is for weir control or dynamic sewer network management, the solution is based on uniform communication technology.

In addition, the STEBalarm product enables the local evaluation of sensor data in order to alert the service team when threshold values are exceeded or errors are detected. STEBATEC develops and manages standby services as an all-round service across entire network hierarchies. In this way a service alarm triggered in accordance with scheduled criteria and plannable escalation levels can be transmitted by email, for example.

**#ProcessControlSystem**  
**#StandbyPlanning**  
**#WastewaterTechnology**



*We are rolling out our entire remote control technology with INSYS icom. Each individual station is intelligent in itself and integrated into the higher-level systems for process control technology, heat control technology or sewage network management. Considering a wide range of criteria and centralised parameterisation enables readiness planning and initiation of services on a whole new level.*

Jonathan Brechbühl  
Head of Support at  
**Stebatec**, Brugg (CH)

## Summary

### **Optimised service models thanks to innovation in remote control technology**

STEBATEC creates the local function of its products for process control technology and standby planning on the basis of uniform communication technology. The modularity of the MRX routers used enables adaptation to the transmission technology available at the installation site, and provides interfaces for actuators and sensors. In addition, future viability is guaranteed. For example, switching to 5G mobile communication only requires the exchange of an interface card.

## Company profile

Based in Brugg (CH), STEBATEC digitalises business processes in the field of water and wastewater management. The service provider specialises in systems for the control, monitoring and management of network systems, including scalable alarm and full-service solutions on the basis of the software as a service model.

scan me!



# Data use in the gas network saves costs and protects the climate



## Initial situation

### Inefficient distribution of gas

Methane gas is supplied to companies and homes via branched pipe networks. The gas pressure required for the supply is usually set conservatively high, because gas networks are essential services: supplies must be guaranteed all year round, even if there are fluctuations in temperature or consumption. However, so far the setting of this pressure has been carried out manually, insufficiently often and without precision.

The result of the excess pressure is increased leakage, so that valuable gas escapes into the atmosphere and drives the greenhouse effect many times more strongly than CO<sub>2</sub>. The loss of gas must also be included in the planning and price calculations of the supplier. This pushes up the gas price unnecessarily for consumers and industry.

## The solution

### Data-based pressure regulation from the cloud

In order to reduce leakage, the pressure in gas networks needs to be adjusted at short intervals and on the basis of relevant data and criteria. Digitalisation in gas networks accordingly means optimising the pressure adjustment based on weather data, consumption statistics, public holidays, industrial requirements and other sources of information – without endangering the security of supply.

Utonomy links this data in a cloud system and uses intelligent algorithms to calculate optimum gas pressures for each section of the grid. The pressure regulation stations receive communication systems from INSYS icom, which ensure secure communication with the cloud and receive the pressure specifications. In addition to operational and system stability, IT security must also be taken into account, as the control systems must meet the requirements for critical infrastructures.

**#GasSupply**  
**#SecurityOfSupply**  
**#GasLeakage**



*The INSYS icom products are perfectly adapted to our application for smart gas grids and operate on-site with a high level of reliability. We are delighted to be working with the highly experienced team of INSYS icom.*

Adam Kingdon  
Managing Director  
**Utonomy Ltd.**, Southampton (UK)

## Summary

### **Data use opens up savings potential in gas supply**

The commissioning of the INSYS icom industrial routers used for data communication is very easy. Convenient functions for cloud connection reduce the necessary software development to a minimum. In productive use, gas leakage is reduced to such an extent that development costs and structural adjustments to the gas network are negligible. The potential of the Utonomy solution thus includes climate protection and savings in running costs.

## Company profile

The British firm of Utonomy Ltd. digitalises the operation of gas supply grids using intelligent sensors, regulators and cloud communication. With its know-how the company contributes significantly to the decarbonisation and decentralisation of energy supplies.

scan me!



# Operational management ensures that PV systems always stay online



## Initial situation

### Commercial and technical know-how are required in equal measure

Photovoltaic systems with an output of 15 kW to 5 MW are typical for central and southern Europe. It is often small and medium-sized enterprises that contribute to the sustainable energy transition with such PV systems as an investment. However, investors need know-how and detailed solutions until the systems are installed and in reliable operation. Between business plan, subsidies, billing models with grid operators, system configurations or troubleshooting: something can easily go wrong and the PV system becomes a loss-making business. For municipal owners and private investors a comprehensive solution from initial planning to operational management is indispensable.

## The solution

### Optimising operational management

Like any business project, PV systems need to be planned as a business model and implemented in a controlled manner. In addition to commercial management, this also includes technical controlling: monitoring, remote maintenance and efficient troubleshooting are intended to keep unexpected ancillary costs for PV systems to a minimum.

Providers such as welivit GmbH offer their customers precisely these components: commercial operational management and an overall technical service that makes operation as reliable and calculable as clockwork. It also includes the integration of an all-round data communication package from INSYS icom. This features reliable 4G routers, proven VPN encryption solutions, a web proxy solution for video surveillance and the connection to monitoring portals such as meteocontrol. It means that the technical operational management of the systems, including remote maintenance and security services, can be implemented without special IT knowledge.

#Photovoltaics

#RemoteMaintenance

#VideoSurveillance



*We're impressed by the excellent cooperation. This applies to both the smooth process and the always accessible support: the team was able to help us to solve all the challenges which we encountered – even when setting up a web proxy access to the video surveillance. The decision in favour of the INSYS icom solution was definitely the right one.*

Christopher Herten  
Project engineer

welivit GmbH, Düsseldorf (D)

## Summary

### Operational risks well under control

With its comprehensive solution for conceptual design and operation, welivit ensures that the sustainable energy transition is financially attractive for operators such as municipalities. Work and know-how requirements are low and both operational reliability and the attractiveness of PV systems as renewable energy sources are on the increase. Approaches such as those of welivit also enable uncomplicated connection to virtual power plants, and accordingly the entry into direct marketing.

## Company profile

As a photovoltaics expert welivit offers all essential aspects of commercial and technical PV management from a single source. The Düsseldorf-based service provider manages solar facilities with a nominal output of 48.7 MWp in Germany, Spain, Italy and France.

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# INSYS icom at a glance

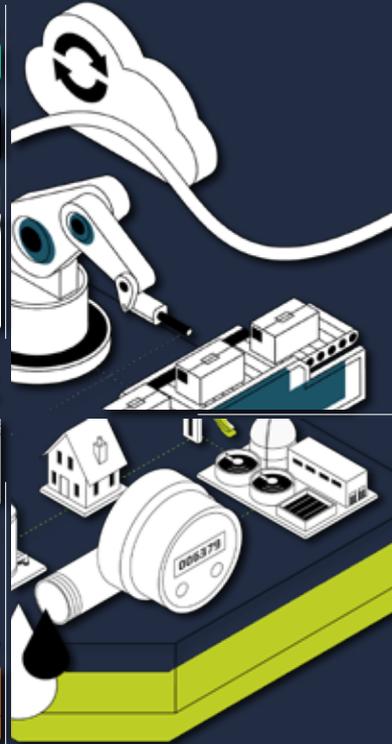
## The markets in which we operate

The energy sector  
(renewable energies,  
smart grid)



Building services  
engineering  
(HVAC, infrastructure)

Plant and mechanical  
engineering



Water and environmental  
technology

We are the ideal partners when it comes to remotely accessing machinery, plant and other equipment and transmitting their operating data.

We work with fresh commitment every day to promote digitalisation and the implementation of the IIoT.

## The numbers

>> industrial quality for **30** years

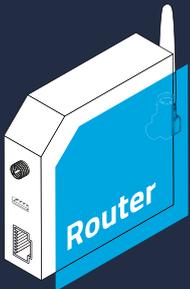
>> **100+** sales & solutions partners

>> in **40+** countries

>> **100+** employees

# A quartet of solutions for the industrial IoT

## Router



- Modular (industrial) routers with LAN, Wi-Fi, xDSL and mobile radio communication (4G/3G/2G)

## icom Data Suite



- Linux environment integrated in the router (icom Smart-Box) for your own applications
- Matching software / apps for the recording and (pre-)processing of data

## icom Connectivity Suite

VPN & M2M SIM



- SIM card, tariff and management portal
- VPN service with group and connection control, incl. monitoring

## icom Router Management



- Central device management (icom Router Management)

We offer concrete answers when it comes to the implementation of the industrial IoT: end-to-end solutions based on specific customer requirements.

Our ecosystem, consisting of four in-house components, generates unequalled value in terms of quality, safety and cost efficiency, enabling new business models.

## Our solutions are ideal for



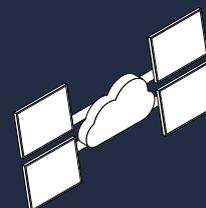
Remote maintenance



Remote access/control



Condition monitoring



Local data processing (Edge Computing)



SCADA, ERP and cloud connection ("IT meets OT")



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