



## Industrial Connectivity

High-performance data communication for Industry 4.0 and the Internet of Things - flexible, modular, future proof

# Industrial Connectivity

presented by INSYS icom

# The IoT 30 billion endpoints by 2023

Source: Canalys 2019

## The future of industrial communication

With the growing number of devices and systems in the IoT, network infrastructures are becoming increasingly complex and the volume of data streams is soaring. It remains to be seen how far this development will progress and what requirements industrial data communication will have to meet tomorrow. Will new standards be introduced? What bandwidths and latencies will future operator models require? How are the costs of wired and wireless Internet connectivity developing?

A **flexible infrastructure** that grows with changing requirements and integrates new technologies quickly and easily is crucial for the future viability of your industrial data communication.

**Modular components** which can be supplemented with additional ports or new transmission paths, for example, are an elegant solution to these challenges. This means you can now invest in the infrastructure you need today - and then later add the interfaces and functionalities that become necessary due to the growth of your business, the requirements of your customers and the possibilities offered by new technologies.

With its modular MRX series routers and versatile plug-in cards, INSYS icom has the perfect answer:

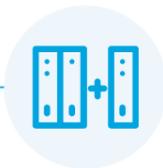
## The INSYS icom solution

Free combination  
of functions



Saving the cost of  
external devices

Simple addition  
of interfaces



Ready for the technologies  
of the future

# Flexibility meets modularity

Successful examples of actual cases

## What delights utility companies

It's not only Industry that finds it essential to maintain a firm grip on control and monitoring technology. The same applies to utilities such as wind farms and solar parks. Any interruption in the connection can lead to a considerable loss of earnings. This is why the operator uses the **MRcard PLS** plug-in card, which adds **4G** to its **MRX DSL** router. This provides two independent, redundant Internet connections that increase operational reliability. Existing devices are connected via the RS232 interface and an independent alarm is implemented via the digital output without the need for additional hardware.



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## Complex applications in combination

STEBATEC AG controls process and waste water via a cloud-based process control system. In addition to tasks such as collecting metering data, exchanging data with the process control system or coordinating service operations, the new solution was required to process and store data, control all mobile radio networks up to 4G and provide decentralised information. An **MRX5-Router** was installed with the **MRcard ES**, which adds **four monitored switch ports**. The MRX5 acts as a head-end station, distributing the standby settings to autonomous MRX3 substations. Central applications also run on the head-end station, so an additional industrial PC is not required. An alarm is sent via SMS, email or pager.



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## Having a Plan B is always a good idea

COMUNAmetall's combined heat and power (CHP) plants ensure electricity and heat supplies to schools, residential complexes and industrial companies. When the power plants are commissioned, the DSL connection, which is used later for condition monitoring and remote maintenance, is often not available yet. With the INSYS icom solution, delays and the wasted deployment of technicians are a thing of the past. The **MRX routers** with built-in **plug-in cards** provide flexible **WAN** access via **DSL, LAN and 4G**. By means of WAN chains the system automatically uses whatever Internet connection option is currently available. In later operation, the 4G pool card can be removed.



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# How you benefit with INSYS icom

We make reliable, modern industrial communication possible

What do you need to implement the IoT and generate profitable benefits from it? First, you need the data from IT and OT (Operational Technology), e.g. from the control system of a production facility. Here we are talking about networking, which includes protocol converters, routers and gateways, but also broadband and mobile communications and functions based on them, such as VPN services. The analysis of this data creates new insights: data becomes information. Companies are turning this information into new business models, better services and more efficient processes. Examples include condition monitoring and predictive maintenance.

More data from the IoT means better information about your own products, processes and infrastructures. On this basis processes can be optimised, the quality of the products increased and risks reduced.

One point that is becoming increasingly important is closer networking along the value chain by granting suppliers and service providers access to data and information. This also includes the development of partner networks that, for example, modularly extend their own applications or offer additional services on the basis of data-based business models, right up to creating a platform economy.

## Integrating data from machines and systems into existing IT systems



Protocol converter & VPN service

## Access to your own machines creates new business models



Delivering added IoT value thanks to a wide range of applications

## Enabling access by suppliers & service providers to production



Secure remote maintenance access



MADE  
IN  
GERMANY

## Process optimisation & risk management



Remote device management & datalogging via IoT gateway

## Implementing industrial connectivity with the MRX modular router

Powerful and versatile for individual solutions

## and with the flexible plug-in MRcards

Always at the cutting edge and in line with your requirements



### Flexible & adaptable

You can customise your MRX router modularly according to your current requirements and extend it later, instead of having to buy unnecessary functions in a complete package. This solution is future-proof and secures your investment. And if you have special requirements, we also develop customer-specific solutions.

### Operator friendly

Uniform user guidance for all series and variants simplifies the handling of the routers. For INSYS icom's own VPN service, a VPN setup wizard is also on board which provides simple, fast start-up. In addition, the user is supported by extensive diagnostic, debugging and monitoring functions.

### Powerful and secure

The icom OS operating system of the MRX is reinforced by numerous security functions and is characterised by high system stability. The routers have enough computing power to replace simple industrial PCs and perform tasks as edge computing servers. In the programming environment (LXC) you can configure your own programmes and scripts, or use the INSYS icom software package in order to effortlessly integrate IoT functions.

With high VPN rates, integrated security features and regular updates, the routers are even suitable for critical infrastructures (KRITIS). MRcards enable hardware redundancy to ensure a fail-safe Internet connection. Combine DSL, mobile radio and fibre optics as required and create your desired fallback option in one device.

### Future-proof and cost-efficient

What will tomorrow's technology look like? Will the wired network soon be replaced by wireless connections? What effects will this have on my machines and systems? These are questions you can't answer today - but don't worry, you don't need to. With MRcards you can equip your router according to your current requirements and later retrofit it with additional connection technology if your requirements change. Instead of replacing the entire device, you can stay up to date by simply changing or adding a plug-in card. Manage all the functions involved easily and securely in a single device.

- Save valuable space in the control cabinet
- Easier installation and administration
- Ready for the technologies of the future

### A wide range

The MRcard range offers numerous combinations that can be used in many different scenarios. The portfolio is constantly being developed further, in line with customer needs and technological progress. On request, INSYS icom also develops customer-specific extensions.

- Mobile radio (4G / HSPA / GPRS)
- VDSL and ADSL
- Serial interfaces (RS232 and RS485)
- Digital and analogue inputs and outputs
- Fibre connectivity (SFP)

### 2 housing widths



### 4 basic versions



### icom OS

A hardened operating system



### icom Container

Linux programming environment (LXC)



### icom Data Suite

Software package



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