



## B&R mobile automation

The demands placed on commercial vehicles have evolved dramatically over the years. With new functions being added all the time and requirements for operating efficiency and quality higher than ever, these vehicles need an automation system that is both powerful and scalable.

Our new mobile automation lineup gives you all the tools you need to build and defend your competitive edge as a technological leader in your market. With an innovation-driven technology partner at your

side, your mobile equipment will stand out with best-in-class electronics and software.

Every aspect of the B&R automation system is designed for modular, concurrent engineering. This gets your products to market faster and allows you to react flexibly to new requirements and special requests. Decoupled hardware and software make it easy to switch out hardware components at any time. With B&R on board, you'll be satisfying your customers' requirements faster than ever.

## Mobile automation for



Agriculture and forestry



Construction



Municipal vehicles

Integrated automation  
Global presence  
Solid partnership



open  
**SAFETY**  
ETHERNET  
**POWERLINK**



Mobile  
automation

PERFECTION IN AUTOMATION  
www.br-automation.com



Around 2,000 employees work at the B&R headquarters in Eggenberg, Austria.



### Technology leader

The innovative spirit that keeps B&R at the forefront of industrial automation is driven by a commitment to simplifying processes and exceeding customer expectations.



### On location, anywhere in the world

With 175 offices in 75 countries around the world, we're able to provide fast and straightforward development support, logistics and on-site service.



### Un beholden to stockholders

As an owner-operated private company, B&R is an extremely reliable partner that values long-term partnership over short-term profit.



### 2,800 employees – 1 personal contact

B&R has more than 2,800 employees around the world. One of them is your personal contact – there to address your every need.

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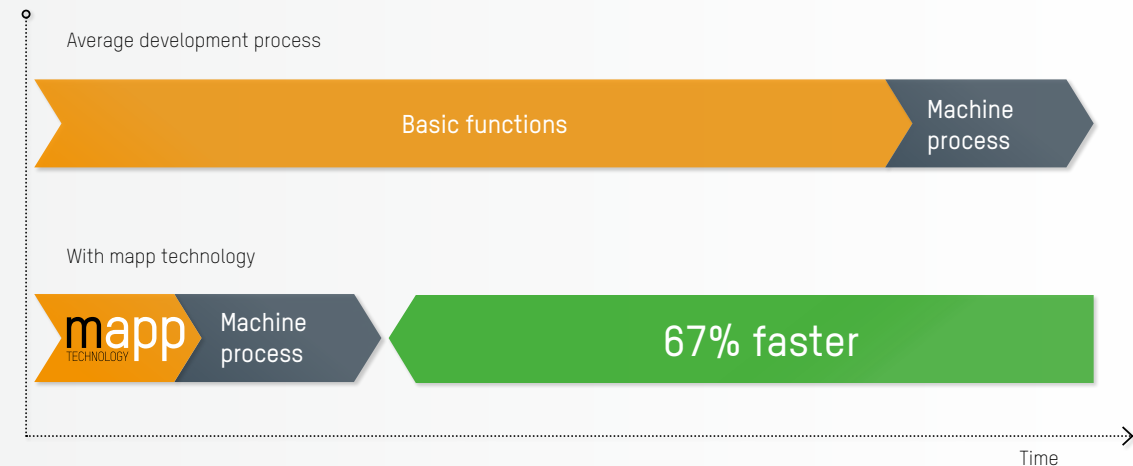
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# Efficient engineering



With B&R, all automation components – the controller, HMI, drives and safety technology – are developed using a single platform. Integrated in this universal engineering environment are extensive simulation and diagnostic tools. Software is developed independently of the hardware and is therefore easy to reuse – giving you maximum flexibility and return on investment.

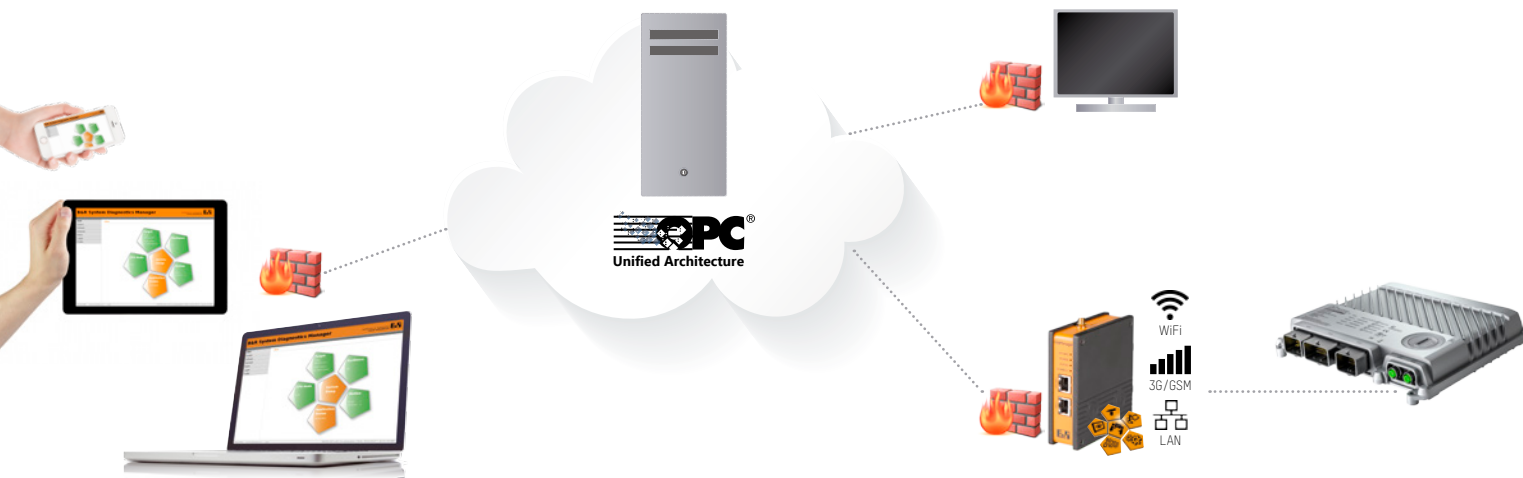
The ready-made software components of mapp technology make it easier and faster to implement basic functionality, accelerating software development by an average of 67% for a dramatic reduction in time to market. Since these components are maintained entirely by B&R, the resulting application software is also of higher quality.



# Security in the cloud

Secure connectivity is a fundamental requirement of advanced solutions like smart farming, IIoT / Industrie 4.0 and remote maintenance. With its Secure Remote Maintenance products, B&R

offers solutions that satisfy even the most stringent security guidelines. When it comes to secure transmission, B&R relies on the vendor-independent OPC UA standard.



## mapp



Load Balancing



Serial Kinematics



Boundary Control



Anti-Swing Control



Multi-Axis Function



Compaction Control



Active Damping



Hydraulic Control

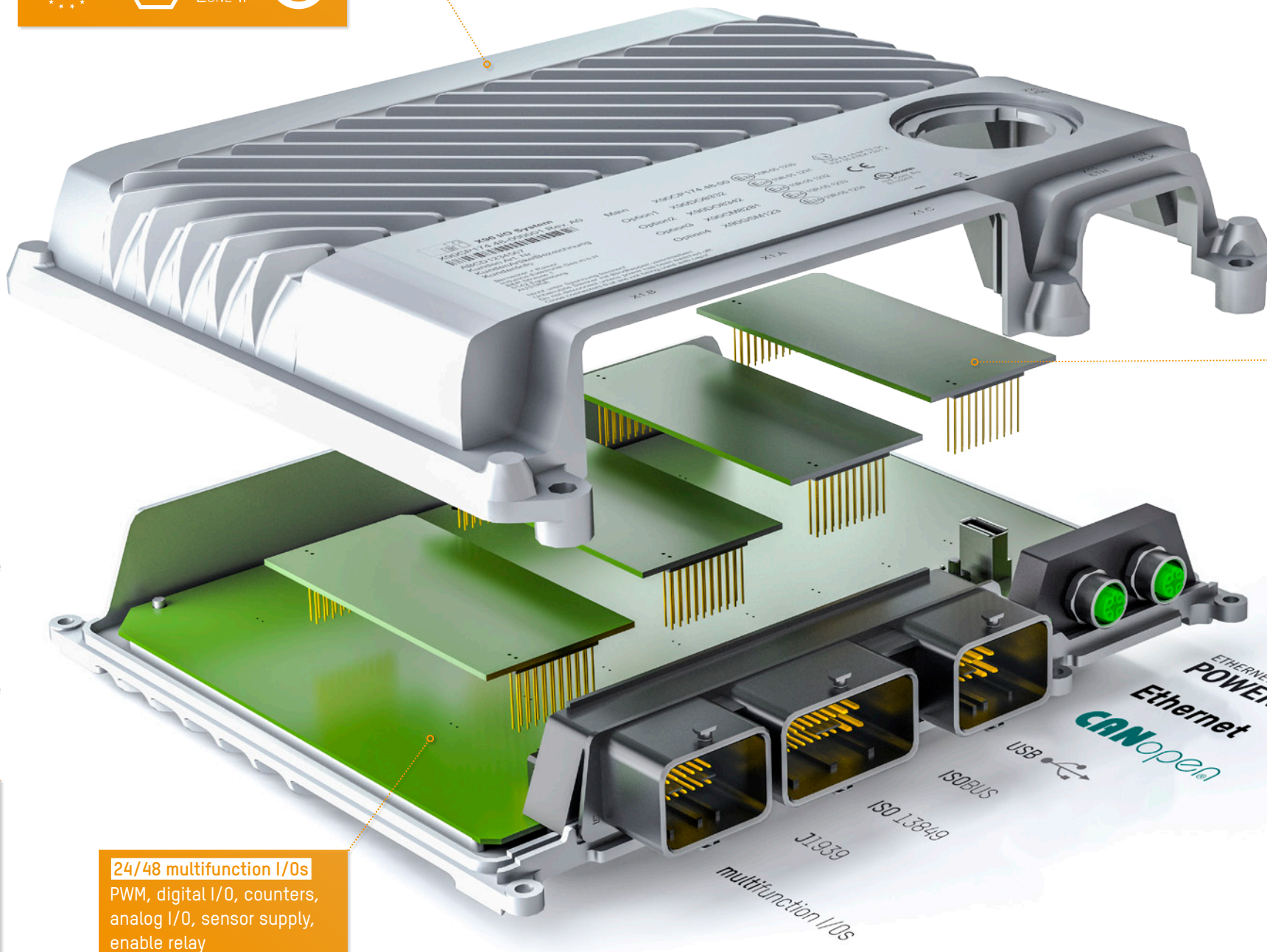
### X90 mobile

B&R opens up new possibilities in mobile automation with its modular X90 control and I/O system. With X90, flexible automation concepts can be created from a standardized overall system.

The heart of the X90 system is a controller with a powerful ARM processor and up to 48 multifunction I/O channels. Standard interfaces include CAN, USB, Ethernet and real-time POWERLINK.

#### Highlights

- Powerful ARM processor
- 24/48 multifunction I/O channels
- Integrated safety (optional)
- CAN & POWERLINK
- Flexible and modularly expandable



**24/48 multifunction I/Os**  
PWM, digital I/O, counters, analog I/O, sensor supply, enable relay

## X90 mobile

**Service access**  
Transparent service cover to access USB and status LEDs

#### Option boards

The extremely robust cast aluminum housing provides space for up to four expansion cards. These can add additional I/O channels, interfaces and even a full-fledged safety controller with safe I/O. Additional expansion cards for WLAN, Bluetooth and GPS interfaces are in planning.

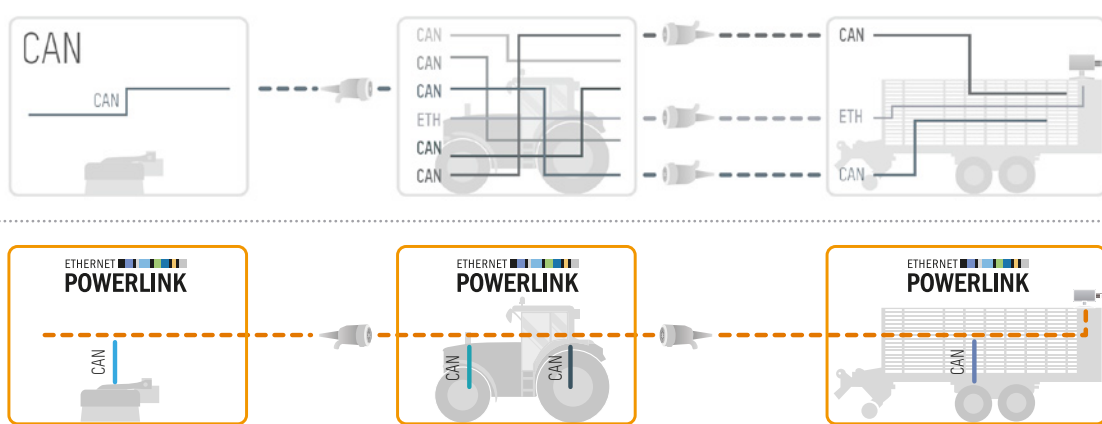
#### Maximum protection

All products in the X90 family are designed for use in harsh industrial environments. They can handle operating temperatures from -40 to +85°C and are resistant to vibration, shock, salt, UV light and oil.

#### Highlights

- Interfaces: CAN, ISOBUS, J1939, RS232, RS485, WIFI, Bluetooth, GPS/GSM, etc.
- I/O: PWM, digital I/O, analog I/O, counter, temperature, etc.
- Safety up to PL e: PWM, digital I/O, analog I/O, counter, temperature, etc.

## High speed for mobile equipment



Today's mobile equipment continues to push the limits of conventional bus technology, which fails to offer the performance or bandwidth that state-of-the-art automation solutions demand.

It's even possible to use inexpensive single twisted pair cables. POWERLINK is widely used in industrial automation and has been applied in all the key international standards.

That's why the industry is on the search for a high-performance backbone bus system that complements the traditional CAN bus.

#### Based on CANopen

POWERLINK offers the required performance and bandwidth and is based on CANopen mechanisms. It also conforms to the Ethernet specifications, offering support for cross-communication and hot-plugging and enabling free selection of network topology. With BroadR-Reach technology,

#### Smooth transition to industrial Ethernet

POWERLINK is a real-time capable and hardware-independent open source protocol. It provides a smooth transition for converting construction and agricultural equipment to an industrial Ethernet solution. Complementing it with openSAFETY adds an open source safety protocol with SIL 3 / PL e certification. With openSAFETY operating on top of POWERLINK, there is no need for a separate safety network.

#### Real-time applications

- Master-Slave connection
- M2M communication

#### Diagnostics and service

- System diagnostics
- Software updates

#### High bandwidth

- HMI
- Video

#### Safety and security

- openSAFETY integrated
- Open standard

#### Fully compatible

- J1939, ISOBUS
- Flexible network topologies

#### Low cost of ownership

- Standard Ethernet cables
- Open and patent-free

www.ethernet-powerlink.org

