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# Case Study: B&R

Integrating high-performance  
TSN with Slate

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B&R is an automation company, specializing in machine and factory control systems, HMI and motion control.

## Challenge

In recent years, B&R has taken a leading role in defining and promoting OPC UA over TSN as an industry-wide standard for open, real-time communication on the factory floor. The company looked to cement this position by being the first company to release a full portfolio of TSN products for industrial automation.

To match customer expectations, it was crucial that the TSN implementation covered all relevant automation use cases, even high-speed motion control. In order to deliver high performance and reach the market quickly with its TSN product line, B&R is using TTTech Industrial's Edge IP Solution.

## Solution

Edge IP Solution is an integrated software package that enables device manufacturers to implement comprehensive and configurable TSN functionality in their products. B&R chose to integrate Edge IP Solution into its high-performance X20 bus couplers and TSN machine switches. The combination of IP core and embedded software with open interfaces means that Edge IP Solution can be quickly and easily integrated into FPGA-based devices or used in ASIC projects. Edge IP Solution offers up to 5 GbE switch ports that support the key TSN standards for industrial automation. It also features hardware acceleration functionality, enabling OPC UA over TSN to be used for ultra-high-speed motion-control.

“ TTTech Industrial enabled us to integrate OPC UA over TSN functionality into our products in very short time, and as a result, B&R customers are among the first to benefit from open, high-speed OPC UA over TSN technology in a wide range of products. ”

explains Stefan Schönegger,  
Vice President – Product Strategy &  
Innovation at B&R

## Benefits

Using TTTech Industrial's Edge IP Solution, B&R released a range of products that deliver TSN functionality to its customers. Due to the well-integrated design of Edge IP Solution, the development time for B&R was dramatically reduced, thus enabling the automation company to be first in the market and maintain its position as a leader in OPC UA over TSN solutions. Using the Edge IP Solution acceleration module, B&R also ensured that customers can use TSN for large-scale motion control applications with performance requirements below 50 µs.

