We provide the right Solution for your Idea

Advanced technological Expertise for extensive Hardware and Software

We work Technology-driven

The b-plus Group is an internationally networked development partner for the advancement of autonomous driving technologies, driver assistance systems and the automation of mobile machines. With its development tools, automotive software and mobile automation divisions, it offers its customers a wide range of measurement technology, software and hardware.

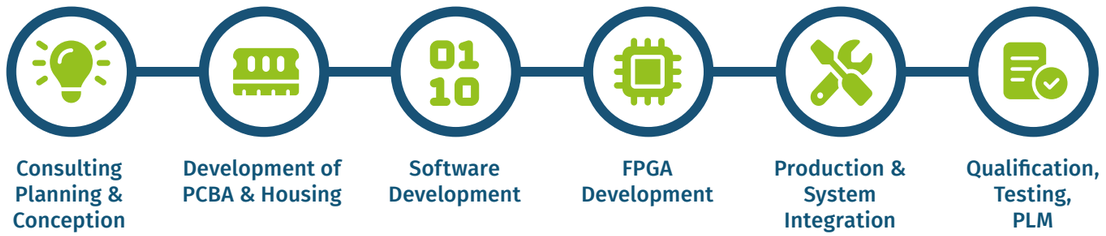
In addition, we specialize in the development and implementation of state-of-the-art technology solutions, with a particular focus on compliance and co-design of industry standards.

Your Advantages with us at a Glance

Our comprehensive range of services accompanies your idea from the initial consultation, through planning and design, to realization and market launch.

We cover all key phases of product development, including PCBA and housing development, customized software solutions, specialized FPGA development, as well as efficient production and system integration.

Finally, through careful qualification and testing as well as our product lifecycle management (PLM), we ensure that your product meets the highest quality standards and is successful in the long term.



Key Technologies for the Future

SerDes

MIPI CSI-2, MIPI A-PHY, FPD-Link, GMSL or ASA MotionLink enable efficient and reliable communication between different vehicle components and systems. By using SerDes, large amounts of data can be transmitted with high bandwidth via serial interfaces, enabling seamless interaction between sensors, control units and actuators in the vehicle. This not only improves the overall performance of the vehicle, but also the responsiveness and safety of the vehicle systems.

Example: Product MDILink.
The MDILink from b-plus is a SerDes measurement data converter that decouples raw sensor data and is an outstanding example of the technology-driven development in our company.

Automotive Ethernet

This technology enables future-proof, scalable network infrastructures for vehicle communication. It offers a robust and scalable network infrastructure for vehicle communication. Compared to conventional bus systems, Ethernet enables faster data transmission and greater flexibility when integrating new technologies and functions. By using Automotive Ethernet, we can realize advanced applications such as infotainment systems, driver assistance systems and networked vehicle communication that enable seamless interaction between the vehicle and its environment.

Example: Product NETLion.
NETLion serves as a seamless bridge between automotive and standard Ethernet, making a significant contribution to development as a result.

TSN

It ensures the real-time capability and deterministic transmission of data via the network. This is particularly important for applications in the field of autonomous driving, for example, where precise timing and fast response times are required. By integrating TSN, we can ensure that critical data such as safety information and control signals are transmitted with minimal delay and highest priority, improving the reliability and safety of autonomous vehicles.

Example: Product XTSS.
TSN can be used, for example, to realize a synchronous image acquisition via several cameras that are connected via Automotive Ethernet.

Hardware Engineering

+ Technology Solutions and Expert Assistance

With our wide range of services, we cover the entire spectrum of technological solutions and requirements. Starting with the creation of flat assemblies through to the development and delivery of highly integrated complete systems.

Our teams of experts accompany you through the entire development cycle. From concept to complete layout, we offer a holistic approach to realize your vision.

+ Construction

With our state-of-the-art design software, we can precisely visualize and simulate the functionality of our products. Through 3D modeling, simulations and interactive prototypes, we can effectively communicate functionality and create a better understanding for our customers.

+ PC and Vehicle Interfaces

We are familiar with all common PC and vehicle interfaces and offer customized solutions. Our extensive expertise in the automotive pre-series sector also enables us to respond to upcoming challenges and advanced technologies at an early stage.

+ High-Speed Design

By focusing on high-speed design, we can guarantee a sustainable and future-proof investment. As a result, your products are not only powerful and reliable, but can also remain flexible and adaptable in the long term.

EMC-compliant Hardware Design and Advice for Customers

Our focus is on the development of EMC-compliant hardware to guarantee interference-free products. We offer comprehensive consulting services on standards, design and EMC requirements to meet regulations. Our approach includes EMC concept development, simulation and pre-testing to solve problems at an early stage.

Needs-based Testing and Worldwide Country Approvals

We offer customized testing according to customer requirements, including CE certification, automotive standards and other relevant standards such as ECE R10, E1 (KBA), E13 (SNCH). We also provide support for approvals in various countries such as the USA (FCC, UL), Japan (VCCI), Australia (RCM) and Korea (KC).

In-House Automotive Tests, Environmental Simulations and Climate Tests

Through in-house automotive testing according to LV124 and LV148, we ensure an efficient and high-quality test environment. In addition, we offer in-house environmental simulation and climate testing to test products under realistic conditions and ensure their resilience in different environments.

FPGA Engineering

+ Customized Solutions with XILINX FPGAs and Hardware Description Languages

Our expertise extends across XILINX FPGAs, CPLDs and SoCs/MPSoCs to develop customized solutions. We use leading hardware description languages such as VHDL and Verilog to realize high performance and reliable designs.

+ Optimized Data Rates and Interface Solutions for every Requirement

We use advanced design methods to ensure high data rates and low latency with maximum reliability. Our expertise includes various interfaces such as CSI-2, LVDS, Aurora, Ethernet, PCIe, HSSL, Zipwire, SPI, UART, CAN FD, I2C, MDIO and more to provide the right solution for every requirement.

+ Efficient Processor Integration and (R)DMA Technology for optimum Performance

With DMA and RDMA technologies, we enable effective data transfer between system components. This enables us to offer our customers a reliable and high-performance solution for their data transfer requirements.

+ Lossless Compression

This solution makes it possible to efficiently reduce the size of data without compromising data integrity or quality. This allows us to optimize resource usage, reduce storage requirements and improve the efficiency of our designs.

Your Benefits:

- **+ Customer-specific Interfaces (Extensive expertise in the connection of SerDes interfaces as well as proprietary solutions)**
- **+ Customer-specific processing (superimposed protocols, handling, etc.)**
- **+ Highly accurate time synchronization**
- **+ High data rates**
- **+ Low latencies**

Software Engineering

+ Development of Customer-Optimized Software Solutions

We develop customized and user-friendly application, web and GUI solutions for Linux and Windows applications. We develop with HTML, CSS, Javascript, JSON, Windows Forms, WPF and QT to fulfill customer requirements aesthetically and functionally.

+ Enable Time Synchronization

Timesync protocols such as IEEE802.1AS and IEEE1588 are used to achieve precise time synchronization across network boundaries, which is essential for synchronizing events in distributed systems.

+ Driver Development

The development of drivers for user space, kernels and microcontrollers in various operating systems such as Windows, Linux and using NDIS ensures high compatibility and performance for device communication.

+ High-Performance Solutions

The optimal combination of FPGA technology, CPU and GPU enables advanced data processing and recording with high data throughput across all network levels.

Other Services in our Portfolio:

+ Cross platform/architecture development (Windows/Linux, x86, x64, aarch64, etc.)
+ OS image creation (Windows, Linux)
+ Microcontroller development (STM32, TriCore, etc.)
+ Linux bootloader
+ Network technology OSI Layer 1 to 4
+ GPGPU programming
+ Performance benchmarking
+ Data analysis and visualization
+ Solutions for OPAL-supported data encryption of NVMe data carriers
+ Software licensing

System Engineering

+ Complex System Integration

Our expertise in system engineering for software, FPGA and hardware enables us to design, develop and optimize highly complex systems to meet the demanding requirements of our customers.

+ Target-oriented Requirements Engineering

We rely on structured requirements engineering to ensure that all customer requirements are captured, analyzed and precisely implemented, creating the basis for successful project results.

+ Clear Framework Conditions through Licensing

Licensing is a central component of our services that defines the legal framework for the use and further development of our software products and technologies.

+ Agile Quality Management

Through practices such as unit testing, system testing and TDD, we ensure continuous quality assurance and optimization of our software products. This is an integral part of our agile development process in order to provide reliable and maintainable systems that meet the dynamic requirements of our customers.

+ Efficient Development Processes

We rely on continuous integration and fast feedback loops to maximize development speed and ensure quality. Our processes provide developers with regular and timely feedback to promote continuous improvement.

+ Data-driven Decision making

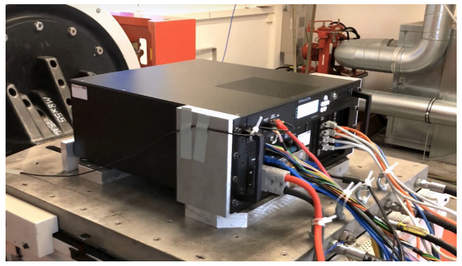
Our services include providing, collecting and analyzing measurement data to make informed decisions and improve the performance of our software products. This data-driven strategy allows us to optimize our products and tailor them precisely to the needs and expectations of our customers.

Qualification, Testing and PLM

For our company, the integration of qualification, testing and product lifecycle management (PLM) is of fundamental importance in order to strengthen our competitiveness and offer our customers first-class products and services.

Through the targeted qualification of our employees, we ensure that they have the necessary know-how and skills to overcome complex challenges and develop innovative solutions.

Conducting tests along the entire product life cycle enables us to continuously monitor the quality of our products and ensure that they meet the highest standards. In addition, PLM plays a crucial role in the efficient management of product data and processes, which in turn leads to improved productivity and optimized time-to-market.



Testing

As part of our comprehensive quality assurance measures, we regularly carry out tests with various technologies and platforms to ensure the performance and reliability of our products. Through our DATALynx ATX4, these tests ensure that our solutions meet the highest standards and provide our customers with an optimal user experience.

Our Process

The b-plus quality gate process ensures the highest quality standards in the development and manufacturing of our own products. Through project-specific process adaptations, b-plus can meet all customer requirements, e.g. cyber security and functional safety. With over 20 years of experience in various customer process landscapes, a dedicated quality engineer ensures compliance with standards and requirements in every project.

Standards/Certifications

+ ISO 9001

+ TISAX® Result Available*

*The ENX Association supports with TISAX (Trusted Information Security Assessment Exchange) on behalf of VDA the common acceptance of Information Security Assessments in the automotive industry. TISAX and TISAX results are not intended for general public. The result is exclusively retrievable over the ENX Portal: https://portal.enx.com/en-en/TISAX/tisaxassessmentresults

Excellence starts with **Quality**

What makes us stand out?

b-plus brings together two major areas of expertise:
Software solutions and hardware expertise

Customers describe us as
particularly reliable and flexible

As a **member of various committees**, we work independently and technology-driven on standard-oriented solutions for maximum compatibility

With **cloud specialists**, we ensure secure and protected data transfers

Benefit from our **extensive experience in customer-optimized cloud solutions**

An impetus for innovation: **hardware** and **software** solutions in **perfect synchronization**.

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NEW MOBILITY

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