Solution:	Device connection via Ixxat INpact
Country:	Germany / Weingarten
Company:	Sarissa GmbH
Summary:	Sarissa Assistance Systems rely on Ixxat INpact to connect their local positioning system to customer's own worker guidance systems.

The effects

○ Simple connection of PC-based systems to fieldbuses and Industrial Ethernet.

○ Same API for all protocols - easy change without software adaptation.

○ Various form factors for best possible integration.

"Ixxat INpact is the solution for connecting PLC systems with the high-level languages used on PCs. These are definitely two worlds! They collide with the wrong approach; but the Ixxat INpact is the chain link that makes this connection possible – simple and powerful!"

R. Rode, Sarissa GmbH
Development Director

Connect two worlds with the Ixxat INpact

Sarissa GmbH offers advanced assistance systems for position measurement and worker guidance right down to the last millimeter. The systems enable error-free production and are used in manufacturing, picking and assembly in the automotive, aerospace and general industry sectors.

Sarissa's core knowledge includes the technology for locating the worker's hands and hand-guided tools in space, as well as the development of algorithms to calculate the coordinate data correctly and reliably at all times.

The core of the Sarissa system is the PositionBox, an innovative xyz coordinate sensor that makes it easy to determine the 3D position of hands and hand-held tools without the need for additional length and angle measuring systems.

In combination with Sarissa's QualityAssist software, the system supports the operator in his work and decision-making processes through innovative operator guidance.
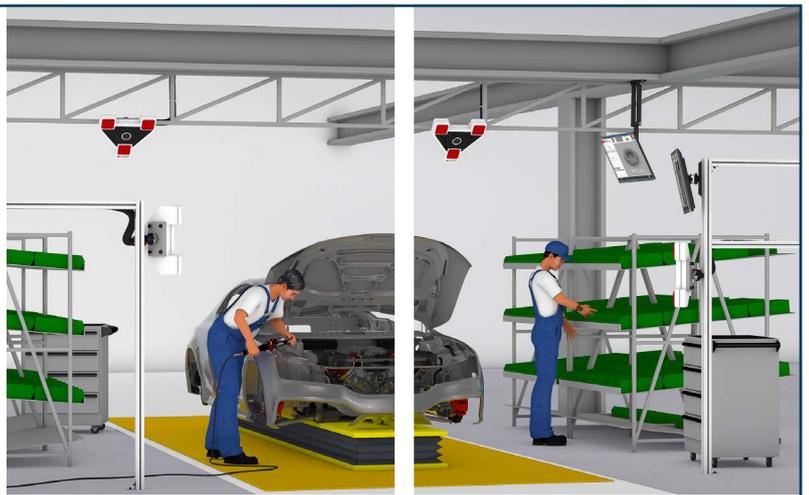
The challenge

In order to address customers with existing worker guidance systems - especially in the automotive industry - Sarissa was looking for a way to offer its own localization system as a product for integration into third-party worker guidance systems.

The PositionBox is based on an industrial PC (IPC) with application software programmed in .NET. This IPC was connected via Ethernet TCP/IP to the PLC or the PC of the customer-specific worker guidance system.

Particularly in connection with PLC systems, which are designed for cyclic processes with I/O values, increased latency times were found in the complex processing of coordinates using PLC function blocks.

The processing of coordinates with PLC programming languages is very complex and not least „uncharted territory" for programmers.

The Sarissa system: *The core of the system is the PositionBox (left), an innovative xyz coordinate sensor that makes it easy to determine the 3D position of hands and hand-held tools (right).*

The solution

In order to solve the problems mentioned above, the pre-processing of the extensive data streams, such as the real-time coordinate values, should be carried out on the PositionBox.

The direct connection to the customer's own fieldbus and Industrial Ethernet systems was the method of choice for achieving a high data throughput with low latency times.
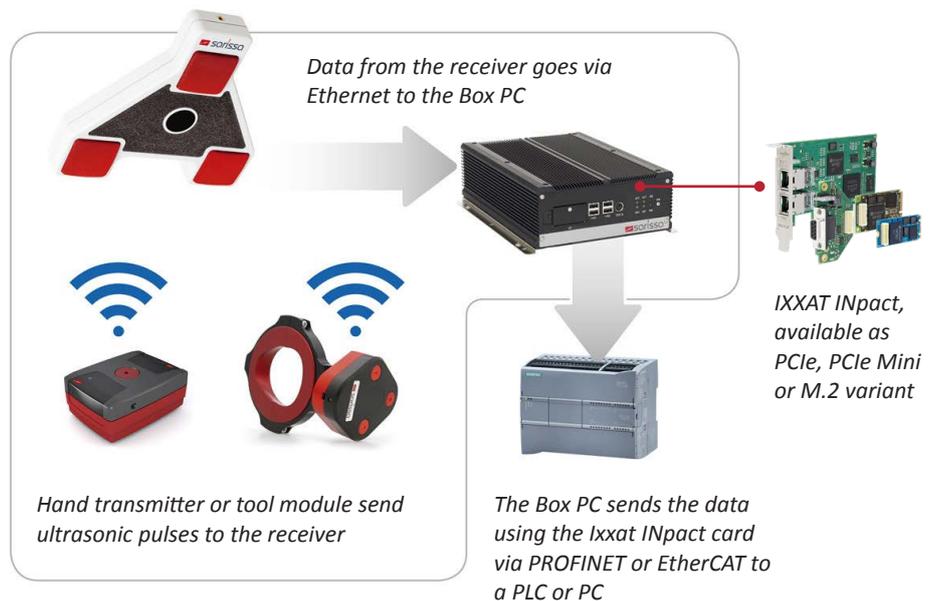
To make this possible, Sarissa decided to use the Ixxat INpact multi-protocol interface card.

In collaboration with Sarissa, the HMS team created a .NET-based, protocol-independent programming interface within a few weeks' time to easily integrate the interface into the Sarissa application software.

Both the high demands on data throughput and latency were successfully met with the Ixxat

INpact and the system was presented to a wide audience at MOTEK 2017.

In addition to the certified PROFINET connection, the Ixxat INpact allows easy connection to other fieldbuses and industrial Ethernet networks – making it an extremely flexible and future-proof solution for Sarissa.

Data from the receiver goes via Ethernet to the Box PC

IXXAT INpact, available as PCIe, PCIe Mini or M.2 variant

Hand transmitter or tool module send ultrasonic pulses to the receiver

The Box PC sends the data using the Ixxat INpact card via PROFINET or EtherCAT to a PLC or PC

Learn more on www.ixxat.com or www.sarissa.de/en/

Under the Ixxat brand, HMS Industrial Networks offers communication solutions for machines, safety and automotive. This includes standardized software and hardware as well as customized OEM solutions. With a long track record within CAN-related connectivity, Ixxat solutions enable communication inside cars, medical equipment, industrial automation devices etc. The Ixxat brand also includes safety solutions for industrial communication.

HMS