TechNote

scanCONTROL Integration

COMPACT/HIGHSPEED - Profile transmission

Overview of possible programming languages, interfaces and software packages being used for the integration of scanCONTROL sensors (Compact/Highspeed) as provider of raw or profile data into an application.

Environment	Operating systems	Description
C++	Windows Linux	Very frequently used programming language. Linux version runs on ARM – Embedded Systems (e.g. Raspberry Pi).
C#	Windows	Modern Windows programming language for .NET.
VB.NET	Windows	Modern Windows programming language for .NET.
LabVIEW	Windows	Graphic programming system. Widely used in measurement technology.
Python	Windows Linux*	Strongly growing programming language with comprehensive, scientific libraries. *Examples for Windows only
C	Windows Linux	Standard programming language. Examples for Linux available. Popular in the embedded area: this is why Linux version also runs on ARM – Embedded Systems (e.g. Raspberry Pi).
GigE Vision / GenICam	Windows Linux Mac	Transmission or communication interface for numerous image processing systems. Quasi-industry standard for image processing.
Halcon	Windows Linux Mac	Image processing software package (uses GigE Vision). Specific integration examples available.
Delphi	Windows	Relatively obsolete programming language.
Matlab	Windows Linux* Mac*	Scientific programming environment. Windows integration via DLL. * Linux/Mac using additional Matlab-specific GigE Vision Toolbox.

Information about integration possibilities with other programming languages/environments on request

Consulting expertise + detailed examples

Basic support / Examples

Integration is possible

SMART - Measurement data output

Overview of available protocols used for transferring calculated measurement results of a scanCONTROL Smart sensor to a control system or a computer.

Protocol	Transmission standard	Description
Modbus	Ethernet (TCP) RS422 (RTU)	Simple and stable communication protocol for communicating with control systems. Was quasi-standard in many industry areas and is therefore still widely used.
UDP	Ethernet (UDP)	Protocol-independent ASCII data flow via Ethernet/UDP. As pure measurement value flow nearly suitable for any control system or computer architecture.
Serial	RS422	Protocol-independent ASCII data flow via RS422 interface. As pure measurement value flow nearly suitable for any control system or computer architecture.
Profile data	Ethernet	Enables attaching the measurement values to the profile data, examples for access to the values available in the scanCONTROL SDKs for the individual programming languages.
PROFINET IO	via scanCONTROL Gateway	PROFINET (**P**rocess **F**ield **N**etwork) is a real-time capable, Ethernet-based fieldbus protocol. De facto standard for Siemens control systems.
EtherCAT	via scanCONTROL Gateway	EtherCAT (**E**thernet for **C**ontrol **A**utomation **T**echnology) is a high speed, real-time capable, Ethernet-based fieldbus protocol from Beckhoff. Finds more and more widespread use.
EtherNet/IP	via scanCONTROL Gateway	EtherNet/IP (**EtherNet I**ndustrial **P**rotocol / EIP) is a real-time capable, Ethernet-based fieldbus protocol from Allen-Bradley. Mainly used in the USA.
analog	via Output Unit (WAGO)	Analog value output via bus coupler. Available variants are 0-10 V, -10-10 V, 0-20 mA and 4-20 mA.
digital	via Output Unit (WAGO)	Output of evaluated measurement values (OK/NOK) using digital signals via bus coupler (24 V).

Test program + TechNote available

Detailed TechNote available

Test program available