

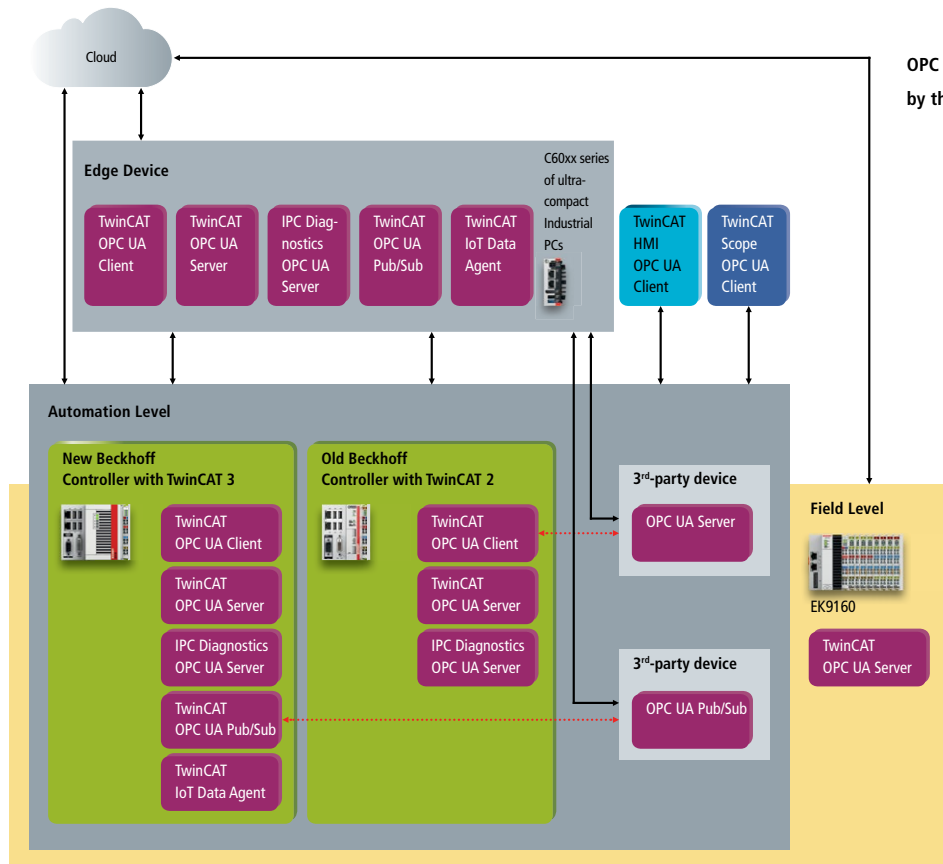
Efficient OPC UA applications with TwinCAT

A fundamental challenge of Industrie 4.0 and IIoT (Industrial Internet of Things) applications is the secure, standardized exchange of data and information between devices, machines and services – even across industry boundaries. OPC UA is the industry standard for manufacturer- and platform-independent communication and it can be used extremely efficiently with TwinCAT.

OPC UA combines specifications that have been developed in close cooperation between manufacturers, users, research institutes and industry consortia to exchange information securely in heterogeneous systems. With the underlying object model, production data, alarms, events and historical data can be integrated in just one OPC UA server. The security mechanisms of OPC UA ensure the integrity and encryption of exchanged data and allow authentication of clients and servers. The aforementioned mechanisms have been rated as very reliable by the German Federal Office for Information Security (BSI). However, OPC UA is not only a communication protocol, but also enables the modelling and mapping of systems in the so-called OPC UA namespace by means of an extensible information model.

Beckhoff adopted OPC UA at an early stage and firmly anchored the communication technology in a wide range of products: the company's first OPC UA server software was presented as early as 2006, which was then officially offered as a TwinCAT supplement starting in 2007 and could be used in the first customer projects. The diverse application possibilities of OPC UA are also reflected in the Beckhoff product portfolio, with products ranging from Industrial PC diagnostic options and access to TwinCAT real-time data provided via OPC UA to the connection of OPC UA devices to the TwinCAT HMI visualization system and even to the cloud. In addition, the EK9160 IoT Bus Coupler is a hardware device that enables direct, simple and secure access to I/O terminals via OPC UA.

Beckhoff pioneered open standards in automation for many years, so that customers benefit from highly extensive interoperability between Beckhoff devices and third-party products. Our unwavering commitment to OPC standardization is essential for this and thus, the products are examined every year for appropriate interoperability and stability. Beckhoff is highly active in the further development of OPC UA through participation in the various working groups of the OPC Foundation and the VDMA, e.g., for the Companion Specifications from individual industries. All insights gained are directly incorporated into new product development.



OPC UA applications supported by the Beckhoff automation system



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More information:

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