

“Care Free” Development Package for Vendors Implementing Safety over EtherCAT

Safety-relevant functionality is in big demand, but can be difficult to implement for many users. With Safety over EtherCAT, not only does the particularly lean technology itself help with the implementation, but so do several suppliers. An all-around “care free package” to develop new Safety over EtherCAT solutions is now available for automation system vendors.

Safety over EtherCAT Technology enjoys strong, growing demand and is implemented by well-known vendors of control and drive technology, robotics and sensors. EtherCAT Technology Group (ETG) member Beckhoff Automation provides test cases and test tools as well as certification support for implementing the Safety over EtherCAT protocol. The parameterization software for the decentralized safety controller is part of the Beckhoff EtherCAT configurator ET9000, which also works with EtherCAT masters from other suppliers because of the system’s open interfaces.

Now additional suppliers complement Safety over EtherCAT with an all-around, care free package: At a press conference held by the EtherCAT Technology Group at the SPS/IPC/Drives 2010 show in Nuremberg, Germany, Dieter Hess, Managing Director of 3S-Smart Software Solutions GmbH, announced the support of the CoDeSys Safety editors for this decentralized safety controller. As a result, CoDeSys customers can enhance their control systems with functional safety without having to develop and certify their own safety controller. 3S-Smart Software Solutions GmbH will also implement Safety over EtherCAT in the company’s own safety control package.

The Safety over EtherCAT protocol stacks for master and slave devices were announced by IXXAT managing director Christian Schlegel. IXXAT not only offers the protocol software itself, but also supports its customers with implementing and certifying their Safety over EtherCAT devices.

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Dr. Guido Beckmann, chairman of the ETG Technical Committee and safety expert with Beckhoff Automation, underlines the compactness and openness of the safety protocol: “Experience shows that code size and stack delays in Safety over EtherCAT are substantially lower than comparable protocols. The safety container of a minimal 6 bytes allows users to simply use the protocol on legacy fieldbus systems as well. And thanks to the manifold support offering it now becomes even easier to integrate Safety over EtherCAT in one’s product portfolio: “Make or Buy” – with Safety over EtherCAT, vendors now have a choice.”

EtherCAT sets new standards for real-time performance and topology flexibility, while meeting or undercutting traditional fieldbus cost levels. EtherCAT features include high precision device synchronization, cable redundancy options, and a functional safety protocol (SIL3). EtherCAT is an international standard (IEC, ISO and SEMI).

The protocol **Safety-over-EtherCAT (FSoE)** was specified for the transmission of safety relevant data. It is standardized in IEC 61784-3 Ed.2 and is used to send input information of safety sensors (such as safety light curtains or emergency stop buttons) to a safety logic controller. Based on these inputs, this controller computes the commands for the safe outputs (such as contactors or safety relevant drives) and thus controls the safety functionality of the machine.

The **EtherCAT Technology Group (ETG)** is an organization in which key user companies from various industries and leading automation suppliers join forces to support, promote and advance EtherCAT technology. With over 1500 members from 52 countries, the EtherCAT Technology Group has become the largest organization in the world that is exclusively focused on Industrial Ethernet technologies. Founded in November 2003, it is also currently the fastest growing fieldbus organization.

➔ For further information please also see www.ethercat.org