Press Release

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EtherCAT Technology Group standardizes plant-wide Safety Architecture for heterogeneous control systems

The EtherCAT Technology Group (ETG) is standardizing an open safety profile for safety-related data exchange between machine parts within heterogeneous safety architectures. The profile considers that potentially different bus systems with their own native safety protocols are used within the machine parts. The plant-wide safety related data exchange is carried out by gateway functionality within the machine parts, where the process data is standardized by the safety profile to simplify configuration and diagnostics.

"We in the EtherCAT Technology Group think the effort to replace the native safety protocols of well-established bus systems by a generic bus-independent safety protocol is not feasible. Its certification would be quite complex because conformance verifications and tools of multiple non-cooperating organizations would be required; additionally, the costs for each safety device would be quite high, because more than one safety protocol would need to be supported. That is the reason why we do not position Safety over EtherCAT (FSoE) as a generic protocol – even if this protocol is technically well-suited for this purpose because of its lean specification." explains Dr. Guido Beckmann, chairman of the ETG Technical Working Group, Safety.

Instead, the ETG specifies a Safety Application Profile – thus upon the safety communication channel – to define the content of the interfaces between the components of a production line. This permits the usage of pre-defined function blocks within the safety logic to include pre- and post-located machine parts or a plant-wide activation of Emergency Stop functions.

Taking into consideration the fact that different native safety protocols are used within machine components, the plant-wide data exchange of machine-to-machine communication uses gateway functions. "In contrast to a generic safety protocol that needs to be implemented within each device, the gateway function is only needed

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once within a machine part. Furthermore, the gateway function does not need to be implemented within a stand-alone device, but rather can be a part of the safety logic device." adds Dr. Beckmann. "Therefore, only one device within the machine needs to know the foreign language (additional protocol) and not all devices are forced to 'bilingualism.' This saves considerable costs and increases flexibility."

The safety profile for machine module interconnection is developed within the Technical Working Group of the ETG and will be offered for use by other interested organizations as well.

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 1800 members from 52 countries, the EtherCAT Technology Group has become the largest fieldbus organization in the world. Founded in November 2003, it is also the fastest growing fieldbus organization.

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