INDUSTRY 4.0 SAFETY SOLUTION
SAFETY TO CLOUD

Application for manufacturing industry and logistics
Offer for functional machine safety, automation, software and IT

SUMMARY

Selected safety sensors and solenoid interlocks are connected in series via an edge gateway to a cloud.

CURRENT SITUATION

For Industrie 4.0 components, the German Plattform Industrie 4.0 has defined an asset administration shell that holds all information throughout the lifecycle of a component. Today, data and information from functional safety products in plants are usually not completely electronically readable, but are available as states. The connection of functional safety products to a cloud is also usually missing.

PROJECT DESCRIPTION

The information and the underlying standards are defined in joint workshops of the University of Stuttgart - IAT with Schmersal, Hilscher, Microsoft and Siemens. Subsequently, the information from the safety sensor chain is mapped in PROFIsafe and made available via the gateway. In parallel, a connector is implemented in the Hilscher edge gateway.

SCIENTIFIC BASIS

Bachelor thesis by Simon Storz:
Areas of application of SAFETY in the context of Industrie 4.0
at the University of Stuttgart, Institut für Arbeitswissenschaften und Technologiemanagement (IAT)
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SOLUTION

The communication between the functional security products and the Microsoft AZURE Cloud takes place via the Hilscher netIOT Edge Gateway. The goal is to build end-to-end connectivity of functional security products across the gateway into the IT and to build a cloud so that the security information is available in the IT and cloud environment.

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INDUSTRY 4.0 – FEATURES

For the components a management shell is to be realized in future, which is automatically created and maintained. In the first step now the functional security products are connected to the cloud via a gateway to validate the technical requirements.

STANDARDIZATION APPROACHES

The following standards are used: eCl @ ss, IO-Link (IEC 61131-9), Profinet (IEC 61158, IEC 61784-2). In particular, the catalog data taken from eCl@ss are not complete and should be expanded.