

SuccessStory

Safety-related solution for points installation

Project overview

Industry

Rail transport

Application

Safety system for track-switching devices

Hardware

HIMatrix:
1 F30
5 F3 DIO 16/8 01
3 F1 DI 16/01

Communication

safe**e**thernet



Source: IABG mbH

Customer

IABG mbH,
Lathen, Germany

Project

A HIMatrix® safety system looks after the independent signalling integration of the remote points with the control room on the Emsland Transrapid test track. The SIL 4 application (CENELEC) fulfils the high safety requirements for operating the maglev rapid-transit train and provides a high degree of sustainability.



SAFETY
NONSTOP

SuccessStory | Solution for points installation

With a length of 31.8 km, the Emsland Transrapid test facility (TVE) is currently the largest test track for maglev trains in the world. As part of a project, the hardware from the previous supplementary points-operation control technology was replaced to meet the safety requirements for operating the maglev rapid-transit train on the TVE. In addition and so as not to obstruct future integration steps, a SIL 4 application (CENELEC) was implemented. A new HIMatrix safety system now looks after the independent signalling integration of the remote points with the control room.

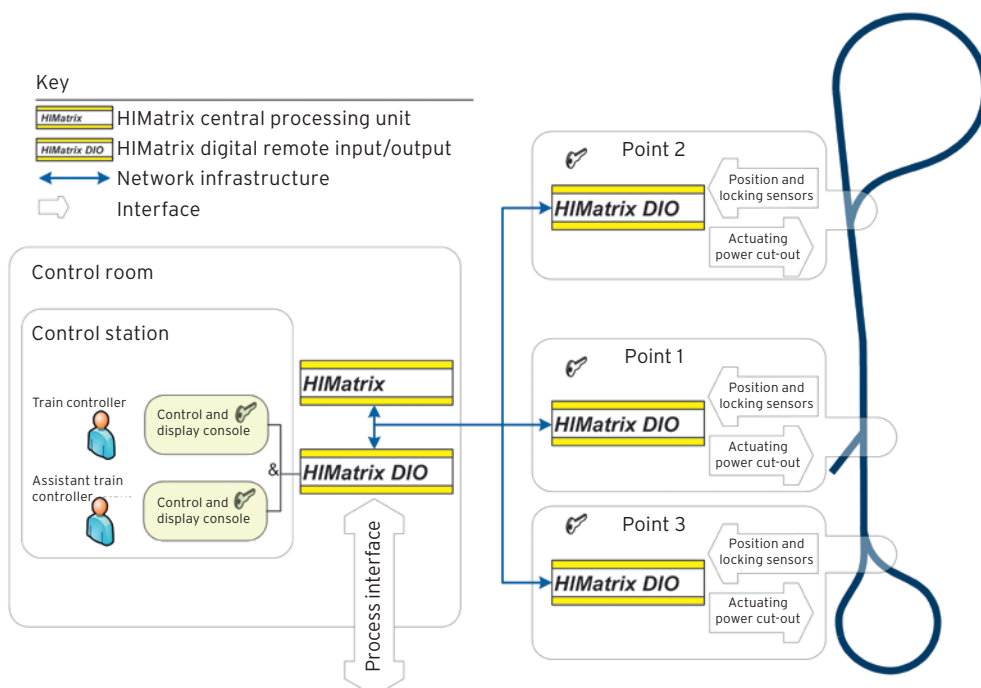
Safety-related control systems from the industrial automation field are now entering rail safety technology as commercial off-the-shelf (COTS) solutions. The modular safety-control systems and remote I/O modules from the HIMatrix series were certified by the testing and technical service organisation, TÜV SÜD, up to SIL 4 in accordance with the standards DIN EN 50126, DIN EN 50128, DIN EN 50129 and EN 50159 for railway applications. The certification includes the safe**ethernet** protocol for data transfer and the engineering tool, ELOP II Factory.

The safety system is programmed in the function block diagram language in accordance with IEC 61131-3. A time-consuming software development process according to DIN EN 50128 was therefore not necessary. ELOP II Factory contains an online manager for monitoring process variables online. As the programming was only done graphically and exclusively using IEC 61131-3 function blocks, it made checking the correct programming much simpler. Test routines were made considerably shorter by being able to easily look at internal system statuses. As a result, the verifier was able to perform an almost complete verification in just a few days.

Advantages of HIMatrix solution

- HIMatrix system is TÜV-certified for use up to SIL 4 (CENELEC)
- Commercial off-the-shelf solution: high level of safety, flexibility and sustainability with low investment and operating costs
- Validated function blocks reduce test costs
- Modular safety system grows with the requirements
- Vendor-neutral, open interface management

Source: IABG mbH



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