

Project Note

Universal Gateway as a Protocol Converter

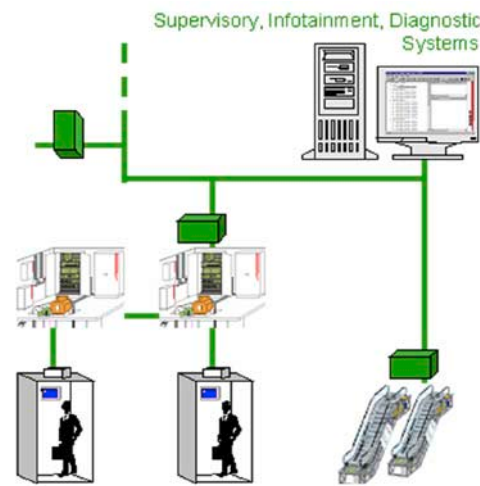
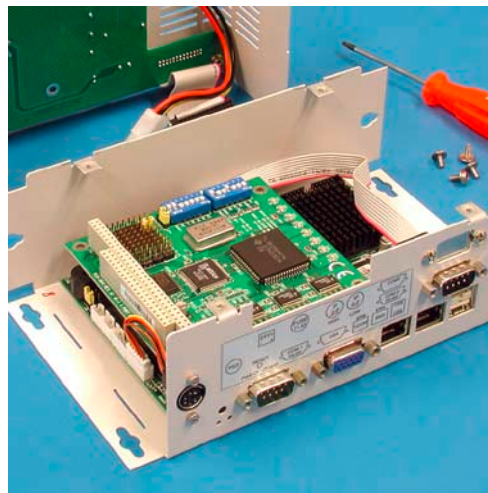
This project involved developing a universal gateway for use as a protocol converter to allow the integration of old control systems for escalators and lifts with different communications protocols.

Task

Escalators and lifts are increasingly monitored and diagnosed over standard TCP/IP Ethernet networks. A universal gateway was implemented as a protocol converter to integrate old control systems with different communications protocols and physical interfaces. This approach required a high degree of flexibility and universality, traits that are reflected in the extendibility of the hardware and software. The gateway had to be ultra easy to operate and extremely robust. A long service life (MTBF) was also required since this stand alone system was to be put in an inhospitable environment and operated continuously.

Implementation

Zühlke pointed out potential ways of implementing the gateway in the planning design phase, which included requirements analysis and production cost estimation. The selected solutions were implemented in an operational model and tested at the customer's premises under real conditions. Embedded Linux was used so that the hardware-related drivers could be adapted to the proprietary protocols and license fees could be avoided. In the following project phases, the model was further developed into a prototype, which demonstrated its usability in a field test. The prototype was then prepared for series production with a CE and CB permit. The pre-series gateways, for their part, underwent appropriate testing in actual operation until earning final release.



Customer benefits

- Zühlke pointed out possible ways of realising the gateways in a short period of time.
- The operational model allowed the customer to assess the idea's potential for development and launch the subsequent phases.
- The interdisciplinary team of developers shortened communication and decision-making channels.
- Access to technology thanks to broad in-house expertise and extensive contacts with external specialists.



Technical Data

Supply: 24VDC

Processor: x86 / 233 MHz

Operating system: Embedded Linux

Programming languages: C/C++

Proprietary communication protocols, communication interface: Dual LAN, RS-232, RS-485

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