

Industrial Ethernet is the talk of the day and the list of its promises is impressive: high data rates, long cable distances, and cost-efficient standard cables and plugs make Ethernet technology seem the communication medium of the future for automation manufacturers and users. While the benefits cannot be denied, Industrial Ethernet systems are not necessarily the best communication solution for each and every application.

CAN is still a very simple, flexible, and powerful network technology which, considering its low costs, is an unrivaled solution for many applications. As a development service provider who deals with all communication systems, we have many customers who, in view of the ever increasing demand for modular machine and plant designs, wish to decentralize their systems. A good many of them ask us, whether it would not be the right opportunity for a switch to an Ethernet-based data infrastructure. This question seems to indicate a diffuse doubt whether CAN or CAN-based field-buses are still up to date, i.e. can satisfy today's requirements. Our answer is that CAN is anything but obsolete. We counter reservations by preparing a requirement specification and a rough estimate which we use to illustrate two points: firstly, that the data rate provided by CAN and the permissible cable lengths are more than sufficient for a large part of the planned applications, and secondly, that CAN-based communication solutions are the most affordable by far. Indeed, in most cases higher costs would be the only discernible effect of a decision for Ethernet.

Let us look at a typical example from medical tech-

nology: a dental laboratory technology manufacturer requires a control network for a dentist's chair and the accompanying treatment unit. He inquires after Industrial Ethernet. We list the requirements, e.g. the drive control for the adjustment of seat and backrest and for drills and pumps. CAN easily covers the necessary data rate. And the cable lengths are no problem for CAN either. Choosing Ethernet, on the other hand, would lead to significantly higher costs for plugs, cables, and switches, without any advantages for the application. And what can we say in terms of sustainability? We find no drawbacks in a decision for CAN, on the contrary. CAN keeps gaining ground, as it is nowhere near its zenith. In Asia and



CAN overtaking – the well-established technology will continue to be the first choice in many applications

the USA especially, the network technology enjoys a growing number of deployments in various industries. However, some customers are not convinced, yet: what if the application has to be expanded at some future date? Would the limitations

typical of CAN not prevent a free network extension? They would not – the decision for CAN is not a one-way track.

If required, CAN-based applications can be easily integrated into higher-level Ethernet networks as subordinate networks. And the migration from CAN to the real-time Ethernet systems Ethercat and Ethernet Powerlink, which integrate the established CANopen mechanisms in the application layer and are therefore sometimes called "CANopen over Ethernet", is likewise possible. Admittedly, we at Ixxat make money by selling CAN technology – we trade a wide range of interface cards, topology components, software, and various tools for analysis, configuration, and for testing CAN networks. However, we also provide development services for various Industrial Ethernet systems and supply many products for this segment, too. Apart from purely factual considerations, we therefore have no reason to prefer one system over another. For an engineer the superior technology might be more attractive. Yet, if the technologic advantages cannot take effect because they are not required for an application, the accountant should decide instead of the engineer – sensibly, the lower-cost product often comes out on top. And that will mean CAN for a long time yet. ◀

CAN – vintage, not obsolete!

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