

P R E S S R E L E A S E

PROFINET Ready for Process Automation

Frankfurt, Germany – June 11, 2024: PROFINET already offers a comprehensive portfolio of technology for the digitization of process production systems. With the availability of version 2.4MU5 of PROFINET, the Ethernet APL, PA Profile 4.02 and certification for sensors and actuators, PROFIBUS & PROFINET International (PI) has laid a strong foundation here. The implementation of further requirements from the circle of users in the process automation field will soon round out PI's technologies thanks to the provision of a complete portfolio of vertically and horizontally continuous standards which take into account the aspects of information modeling, modularization and security, among other things.

Currently, the priority is to provide Single Pair Ethernet (SPE), as it's just as relevant as Ethernet APL for process plants. The use of SPE indeed concerns non-explosion-protected areas, but such areas can be found in every process plant. PI founded the working group "Integration of SPE in PROFINET"; so, this issue could be tackled quickly. The objective here is to implement a rugged, reliable, and interoperable SPE solution based on PROFINET. In particular, the requirements for PHYs and corresponding power classes, as well as the interplay with PoDL (Power over Data Line) have to be defined for interoperable integration and the certification of SPE switches, sensors, and devices. All the PROFINET-specific aspects are being worked through by this working group. At the same time, and as part of APL maintenance cooperation, the experts at PI are working together with the organizations FieldComm Group, ODVA and OPC Foundation in the working group on the "Independent Protocol Physical Layer Group (10Base-T1L)", where the requirements and marginal conditions for a communication system-independent solution for SPE are being specified.

Functional safety has always played a central role in process automation. PROFIsafe can already be used in Ethernet APL and SPE systems today thanks to the black-channel approach, which makes it independent of the physical layer. Experts at PI are currently coordinating the requirements for the PROFIsafe for PA Profile Devices amendment with the experts at NAMUR, in which integration and engineering aspects in this regard are to be specified.

Legal provisions and IEC standards for security are crucial for Ethernet-based communication systems. A majority of the requirements have found their way into the current specifications from PI. Another aspect here is the infrastructure recently provided by PI and the service for signing GSDs and FDI Device Packages. Here as well, PI experts are currently gaging further demand in discussions with the experts at NAMUR against the backdrop of the NOA architecture.

With regard to information models for continuous vertical data exchange, PI is cooperating with other organizations on further developing FDI and PA-DIM for easier and more flexible device swapping and for vertical data exchange through to the cloud.

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