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PRESS RELEASE

Integration of TSN in PROFINET makes great strides

Nuremberg, November 29, 2017 At the 2017 Hannover Fair, PI (PROFIBUS & PROFINET International) announced their intention to use TSN (Time Sensitive Networking) for PROFINET. The first working group findings are now available and a road map for the specification work has been created.

TSN is receiving a lot of attention today, especially in the context of Industry 4.0, and is generally viewed as the opportunity for better integration of OT networks into the IT networks of companies. Through further development of Ethernet in IEEE 802.1, future devices with standard Ethernet controllers can be developed that still meet all the robustness and determinism requirements of industrial automation. Since TSN only defines a Layer 2 for communication, PROFINET is predestined, as an application protocol, to seamlessly integrate TSN, so controllers and field devices can communicate with each other and exchange data.

One focus of the working group that is responsible for the PROFINET standard was defining which of the numerous IEEE 802.1 standards will be required for the specification of TSN integration into PROFINET. Here, synchronization using 802.1 ASrev, TAS (time aware shaper, 802.1Qbv) and preemption (802.1Qbu) are among the most important functions. Through the early selection of supported standards, device manufacturers can prepare for TSN now and plan their next generation of devices with TSN.

However, a significant finding of work so far is that the configuration of TSN network parameters will be among the decisive criteria for success and acceptance by users. TSN will only be easily integrated into systems if it uses a Plug & Work approach that makes



extensive adjustment unnecessary. PI therefore primarily pursues the IEEE decentralized configuration model, which allows creation of flexible, efficient system networks and will be tested, for example, on the test bed of Labs Network Industrie 4.0.

Thanks to the proven basic architecture of PROFINET using standard Ethernet, user perception on issues such as IO data, parametrization, diagnosis, etc. remains unchanged. In view of the large installed base of PROFINET Devices, this is an important compatibility issue for our users.

PI has set the first quarter of 2019 as its goal for publication of the specification for use of TSN with PROFINET.

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