

TIME SYNCHRONIZED NETWORKING

Modern industrial operations are working smarter, not just harder, and TSN technology is playing a critical role in innovating those systems by extending the capabilities of Audio-Video Bridging (AVB systems).

TSN schedules transmissions by adding a timed gate schedule to each class of traffic. The strict priority schedulers only select a queue for transmission if its gate is open, though multiple gates can be open simultaneously.

This IP was developed for the most demanding systems, including those requiring defense-class security, so you can be sure it's right for yours

PRODUCT NAME:

TSN IP

PRODUCT ID:

TSNIP

LICENSING OPTIONS:

PROJECT, SOURCE CODE

KEY CAPABILITIES



Frame Preemption - IEEE 802.1Q-2018 (formerly IEEE 802.1Qbu-2016) and IEEE 802.3br

- Allows selection of any of the QoS levels to be pre-emptible or express traffic

Time Aware Shaper - IEEE 802.1Q-2018 (formerly IEEE 802.1Qbv-2015)

- Gate Control List to control each QoS level, synchronized to PTP time
- Works with AVB Credit-Based Shaper
- 1Gbs full-duplex MAC (IEEE 802.3)
- Automatic gPTP (IEEE 802.1AS-REV; slave-only)
 - +/- 8 ns accuracy
 - Rapid time synchronization convergence

- High precision packet prioritization and scheduling

- RGMII and SGMII interfaces with COTS PHY with MDIO

- User-configurable time-based triggers

- One PPS output signal with configurable hold-up time

- Supports 8 QoS priority levels / traffic classes, each with configurable strict-priority and credit-based scheduler (IEEE 802.1Q-2014)

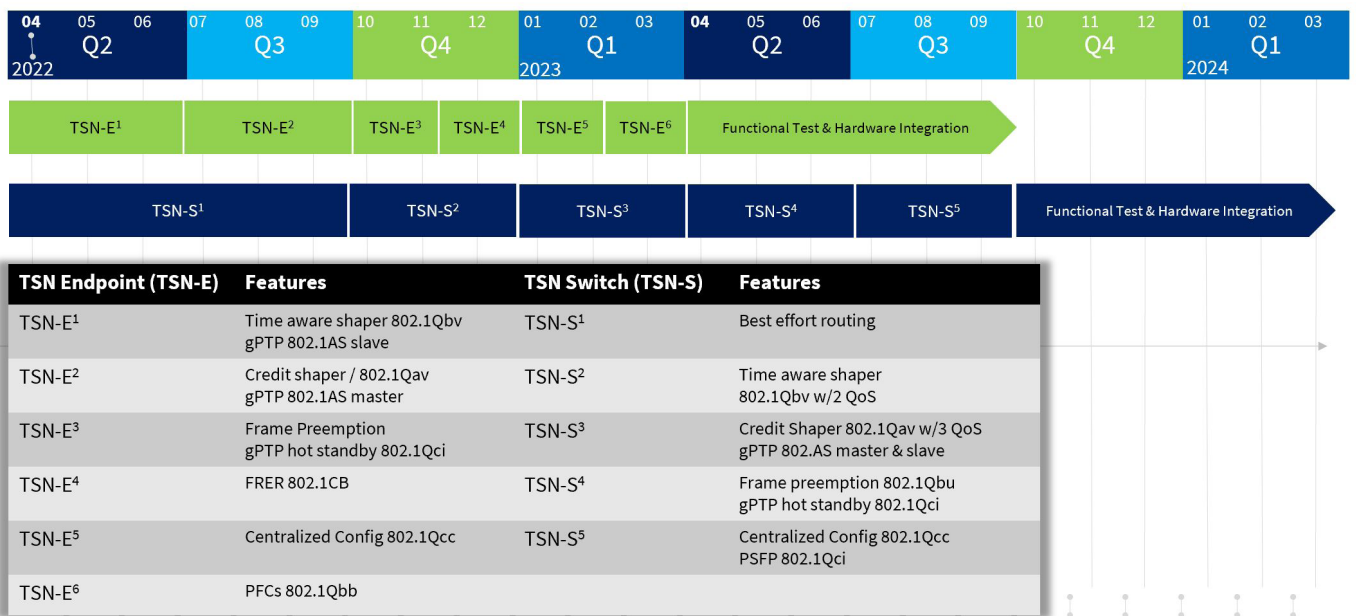
- Streaming IP with no packet buffering minimizes latency and maximizes determinism

- Xilinx AMBA/AXI4 Lite and Stream interface

The FPGA logic in DornerWorks TSN solution was developed for Xilinx FPGAs. As part of the TSN IP, it enables support for multiple types of heterogeneous traffic over a common network to reduce infrastructure costs.



TSN Roadmap



GET THE TSN IP TODAY

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