

Contact: Caster Communications, Inc. at 401.792.7080

Avnu Alliance Members Endorse TSN Market Value at Hannover Messe and Deterministic Ethernet Forum

Member companies across automotive and industrial drive TSN momentum through series of presentations, demonstrations and announcements.

Beaverton, OR – May 23, 2017 – Members of the <u>Avnu Alliance</u>, the industry consortium driving open, standards-based deterministic networking, actively endorsed Time Sensitive Networking (TSN) and advanced the TSN device roadmap at <u>Hannover Messe</u> from April 23 – 27, 2017 and <u>Deterministic Ethernet Forum</u> (DEF) from April 27 – 28, 2017. Members across the industrial and automotive markets participated in presentations and trainings, as well as product and testbed demonstrations at the events.

"The business value of TSN for industrial and automotive applications was a theme in the presentations and panel discussions at DEF this year. It is more clear than ever that Avnu Alliance is the place where leading manufacturers are working together to ensure we have a common, interoperable infrastructure for TSN and a future-proof network," said Kevin Stanton, Avnu Board of Directors Chairman.

A key demonstration at both events was the Industrial Internet Consortium (IIC) sponsored TSN Testbed that Avnu Alliance and many of its members participate in. As the world's first testbed for TSN, it was developed with two major goals – to show TSN's readiness to accelerate the marketplace; and to show the business value of TSN in converged, deterministic IIoT networks. At Hannover Messe, the TSN Testbed was on display in both the IIC booth and the OPC Foundation booth for attendees to see demonstrations of a real-world TSN network with numerous Avnu member products and prototypes from companies including Analog Devices, Belden, Bosch, Cisco, Hilscher, National Instruments, Renesas, Schneider Electric, and TTTech. The testbed highlighted the ability for the IIoT to incorporate high-performance and latency-sensitive applications. The work coming out of the TSN Testbed is already having a direct impact on suppliers and manufacturers who see the technology as a value add for their system structure.

Avnu members Cisco and Belden both made TSN announcements at Hannover Messe. Cisco announced that it has added TSN support to the IE4000 Switch family of products. Belden in turn presented the company's TSN upgrade path for select products from its industrial switch portfolio, starting with the RSPE35 and RSPE37 switch family. Analog Devices also showed TSN at the PROFINET International and ODVA stands at Hannover Messe. These demonstrations showed TSN compatibility with existing Industrial Ethernet protocols as well as convergence of TSN with standard Ethernet traffic. Later the same week at the DEF hosted by TTTech, Avnu Alliance leadership delivered the welcome address and members led discussions around topics such as, "How the IIC Testbed Drives Vendor Interoperability" and "Deterministic Ethernet Will Help to Meet the Need for Speed for Future Automotive Applications."

In 2017, Avnu Alliance will continue work towards Avnu certification of TSN devices and offer collective multi-industry experience and networking expertise to manufacturers looking to expedite advanced networking implementations, ultimately leading to a faster path to market for industrial manufacturers. "With IIoT, there is a strong reliance on open standards to enable secure, predictable, reliable, and uninterrupted flow of information from sensor to cloud. Avnu members influence and shape the evolving standards; thus enabling them to deliver the value of TSN for customers and instil confidence in the stability of the technology. With the rapid adoption of TSN as a foundational technology for automation, the community is increasingly counting on an interoperable set of network services and infrastructure. The conformance testing and certification provided through Avnu will be critical to provide the needed interoperable network for the IIoT," said Todd Walter, Avnu Alliance Industrial Segment Chair.

Industry Support for TSN and Avnu Alliance:

"Open standards are key to enabling the data-centric applications of Industrie 4.0 and the IIoT." said Dr. René Hummen, senior architect technology and innovation at Belden. "IEEE TSN is an important piece in this puzzle by providing for deterministic and reliable data transmissions, converged data networks, and continuous data access without gateways. Avnu certification of TSN will ensure interoperability of the various end-systems and network infrastructure devices that IIoT applications rely on."

"Great interest in TSN became apparent at Hannover Fair in the IIC Consortium, OPC Foundation and TTTech booths. There was encouraging feedback we received around the broad possibilities TSN offers for the different industries. These possibilities were also on the agenda at the successful Deterministic Ethernet Forum in Vienna, with 250 participants from 23 countries, representing industrial and automotive companies, consortia as well as semiconductor companies," said Markus Plankensteiner, VP sales industrial North America and global alliance manager at TTTech Computertechnik AG. "The tremendous progress of TSN in the last months was conveyed with presentations from industry experts. Also, concrete products utilizing the technology were announced, among them a variant of the Intel Cyclone V SoC, featuring TSN switching functionality by TTTech. It is crucial to use the momentum of the technology to start building great products that will increase the acceptance of TSN even further."

"Hannover Messe is an enormous trade show and this year TSN seemed to be everywhere – much more than in previous years, "said Tom Weingartner, Marketing Director, Deterministic Ethernet and IIoT Communication Technology for Analog Devices. "We received positive feedback from the demonstrations of TSN we gave at the show. Interoperable networking protocols like TSN make convergence on the network seamless and help ensure that as the IIoT expands, there is a strong infrastructure supporting it."

About Avnu Alliance

The Avnu Alliance is a community creating an interoperable ecosystem of low-latency, time-synchronized, highly reliable networked devices using open standards. Avnu creates comprehensive certification programs to ensure interoperability of networked devices. The foundational technology enables deterministic synchronized networking based on IEEE Audio Video Bridging (AVB) / Time Sensitive Networking (TSN) base standards. The Alliance, in conjunction with other complimentary standards bodies and alliances, develops complete solutions in professional AV, automotive, industrial control and consumer segments.

Press Contact

Alex Crabb <u>alex@castercomm.com</u> cell: +1-401-318-3339 Alex Gil <u>agil@castercomm.com</u> cell +1-703-282-8963