

## UPCOMING EVENTS

### InfoComm 2016

June 4 – 10, 2016  
Las Vegas, NV (Booth: C-8145)

### AVnu Member June Face-to-Face Meeting

June 23 – 24, 2016  
(National Instruments headquarters in Austin, TX)

### AVnu Member August Face-to-Face Meeting

August 9 – 10, 2016  
(University of New Hampshire, NH)

### Member Plugfest

August 15 – 19, 2016  
(University of New Hampshire, NH)

### CEDIA 2016

September 14 – 17, 2016  
(Dallas, TX)

## STAY IN TOUCH > SUBSCRIBE

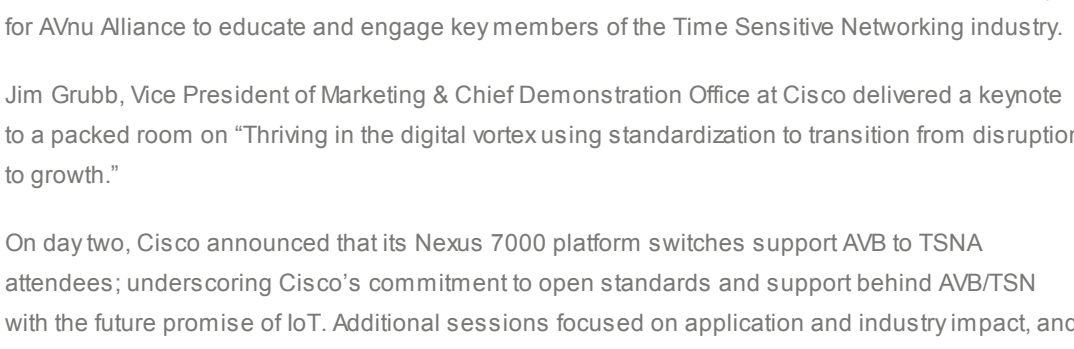
## INTRODUCTION

We are putting a big emphasis on education of Time Sensitive Networking this year as we continue to grow its support across markets. Our biggest education initiative of the year was the second annual Conference on Time Sensitive Networks & Applications (TSNA) that just took place in April. This has proved to be an incredibly valuable event in terms of education and networking opportunities. We are already starting to plan the 2017 event and if you'd like to be involved please reach out to Kevin Stanton, TSNA Conference Chair at [kevin.b.stanton@intel.com](mailto:kevin.b.stanton@intel.com).

Likewise, at InfoComm 2016 in Las Vegas next week, AVnu Alliance will continue to push education surrounding AVB/TSN forward by showing attendees what they need to drive their media networks forward for the era of IoT, with a half-day interactive training session on next generation AV networking, as well as a number of active demonstrations on the show floor – **see more in the Upcoming Events section below**. And in late summer, AVnu Alliance will also offer a 2-hour training session at CEDIA 2016 on AV Networking Fundamentals.

## HERE'S WHAT WE'VE BEEN UP TO

### Second Annual TSNA Conference Recap



Jim Grubb, Vice President of Marketing & Chief Demonstration Office at Cisco delivering the keynote

The second annual Conference on TSNA, on April 12 and 13 in San Jose, CA was an opportunity for AVnu Alliance to educate and engage key members of the Time Sensitive Networking industry.

Jim Grubb, Vice President of Marketing & Chief Demonstration Office at Cisco delivered a keynote to a packed room on "Thriving in the digital vortex using standardization to transition from disruption to growth."

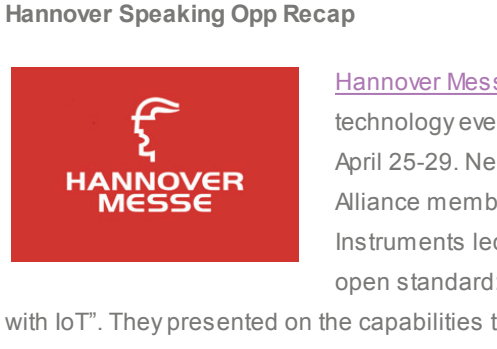
On day two, Cisco announced that its Nexus 7000 platform switches support AVB to TSNA attendees; underscoring Cisco's commitment to open standards and support behind AVB/TSN with the future promise of IoT. Additional sessions focused on application and industry impact, and a compelling keynote titled: "The future of self-driving vehicles and how time-coordinated, networked intelligence will make that future a reality," delivered by Marek Neumann, director and automotive solutions division officer of Intel Corporation. In total, there were 27 speakers over the two-day conference across markets and industries.

"This year's TSNA Conference was proof that support for TSN is growing at a rapid rate," said Kevin Stanton, TSNA Conference Chair and AVnu Alliance Board of Directors Chairman.

### AVnu Alliance Member Face-to-Face Recap

Thank you to Intel for hosting the AVnu Alliance face-to-face event following TSNA 2016 on April 14! Attendance was high across all segments and it was a very successful event, with much content generation and planning for the second half of 2016 worked on by all members.

### OPC Foundation Face-to-Face Recap



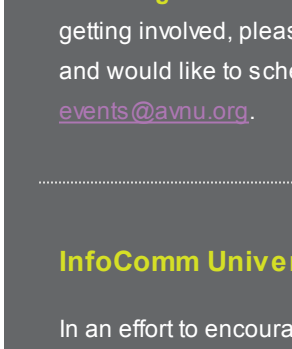
On May 9-13, the [OPC Foundation](#) hosted a face-to-face meeting to work on further enhancements to the OPC-UA standards. The meeting was held in Erlangen, Germany and was hosted by Unified Automation. Two days of the face-to-face meeting were dedicated to exploration of how OPC-UA could take advantage of TSN to provide bounded latency for machine-to-machine control applications. AVnu members attended the meeting to continue the discussion and guidance on how OPC-UA could map over a common foundation of AVnu-certified technology. At the request of the OPC-UA group, AVnu shared an early version of the industrial profile/theory of operations. For more details, OPC Foundation members are welcome to join the OPC-UA over TSN work-group calls every other Monday and AVnu members are welcome to join the Industrial MWG calls every Tuesday. For more information or to join the calls please contact [admin@avnu.org](mailto:admin@avnu.org).

### Formal Liaison with IEEE 802.1

AVnu Alliance now has a formal liaison with [IEEE 802.1 Working Group](#) to collaborate on TSN usage for the industrial and automotive markets. Doing so will help us achieve consistent alignment between the AVnu Alliance members working on market usage and certification testing and the group in IEEE 802.1 working on the TSN standards. If you are interested in getting involved in either workgroup, please reach out to [admin@avnu.org](mailto:admin@avnu.org).

### Speaking Engagements

#### Hannover Speaking Opp Recap



[Hannover Messe](#), the world's largest and most comprehensive technology event took place this year in Hannover, Germany from April 25-29. Neil Stroud, a platform solutions architect for AVnu Alliance member, Intel along with Erik van Hilten from National Instruments led a presentation titled "Time sensitive networking open standard: Changes to standard Ethernet enabling convergence with IoT". They presented on the capabilities that TSN provides the Industrial community, as well as the work being done by the AVnu Alliance to advance the TSN roadmap for Industrial Internet. Avnu was also discussed in a presentation in the IIC pavilion titled "Time Sensitive Networks – Flexible Manufacturing for Robotics and Automation Cells". The session discussed the IIC testbed and was presented in the IIC pavilion by Avnu members Heinrich Munz from KUKA and Todd Walter from National Instruments.

#### Infocomm University Webinar

AVnu Alliance members and industry experts took part in an InfoComm University Webinar on May 5, 2016 that covered the basics for AVB/TSN networks for deterministic AV networking. More on the topic will be introduced in the InfoComm training taking place during the show. See below for more details. Stay-tuned for more webinars on similar topics throughout the rest of the year.

## Upcoming Events for AVnu Alliance

### InfoComm 2016



At InfoComm, see AVnu Alliance members showcase new products and solutions that work today, and are future-proof for tomorrow's evolving market. **AVnu Alliance is exhibiting in booth C-8145**. If you are a member attending InfoComm and interested in getting involved, please contact [Avnu@castercomm.com](mailto:Avnu@castercomm.com). If you are attending InfoComm and would like to schedule a meeting with AVnu Alliance – please reach out to [events@avnu.org](mailto:events@avnu.org).

### InfoComm University

In an effort to encourage people to think about building the right network for today, but also for the future, AVnu Alliance is hosting InfoComm University's IUX02, a half-day training for integrators, installers, distributors, engineers and tech managers seeking knowledge about next generation networks. The session entitled "Next Generation AV Networking Fundamentals & Design", offers 4.0 CTS RUs and will take place on Wednesday, June 8, 2016 from 12:30 PM – 4:30 PM. This training is the only training at InfoComm that will prepare integrators, engineers and system designers for the communications evolution of making professional audio and video part of the Internet of Things (IoT). Register [here](#).

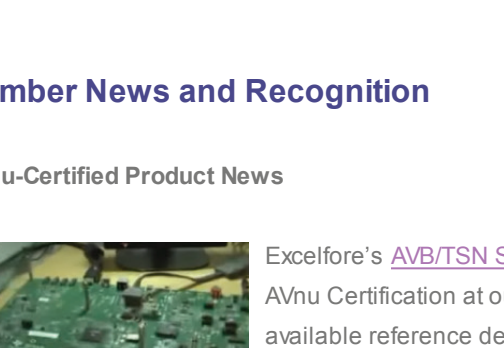
Have questions? Pop on over to our social channels on [Twitter](#) and [LinkedIn](#) to get involved in the conversation and get ongoing updates on what's happening at the show. Visit the AVnu Alliance InfoComm [page](#) for more information.

### Upcoming Face-to-Face & Plugfest

AVnu Alliance will host two member face-to-face meetings this summer. The first face-to-face will take place on June 22nd and 23rd at National Instruments in Austin, Texas with Cisco co-hosting. Immediately preceding the meeting, on the 20th and 21st, members of the IIC testbed on "TSN for Smart Manufacturing", will be meeting at National Instruments for 2 days of integration work on the collaborative testbed. AVnu members including Cisco, GE, Intel, Innovasic, KUKA, NI, and TTTech are all participating in the testbed. The second face-to-face meeting will take place on August 9th and 10th at the University of New Hampshire.

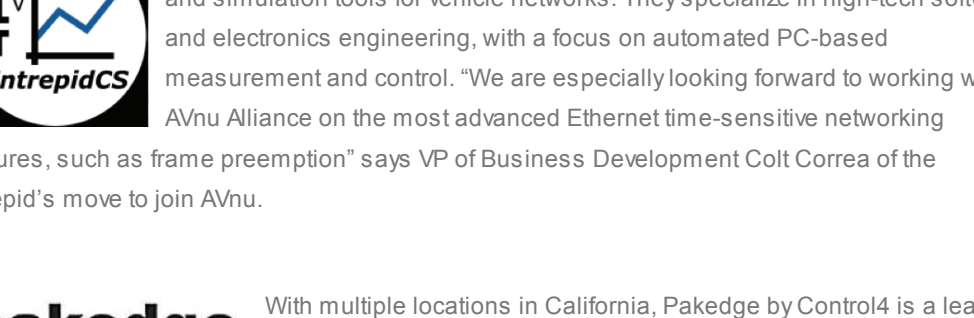
The next AVnu Alliance Plugfest, open to all AVnu Alliance members, will take place after the AVnu Work Group face-to-face August 15 – 19, 2016 at the University of New Hampshire's InterOperability Laboratory (UNH-IOL) in Durham, NH. Plugfests provide an opportunity for member companies to test their implementations with other participants and get exposed to certification test tools. The latest Pro Audio certification tools will be available for execution. AVnu Alliance members only are invited to [register](#) for the Plugfest by August 1.

### CEDIA Training



AVnu Alliance will host a 2-hour training session on AV Networking Fundamentals at CEDIA 2016 in Dallas, TX on Saturday, September 14, from 2-4pm. Integrators, system designers and engineers interested in digital networking for audio and video will leave this training course with a solid understanding of network management and configuration considerations, and relevant fundamental technologies and design considerations. Presented in partnership with AVnu Alliance, this course features topics ranging from principles of synchronized digital networking, wired and wireless networks (including new additions to standard networking like AVB/TSN), technology choices in different network and application layers, as well as considerations for network reliability and expansion. More details will be released soon on how to register for the education session. [Registration](#) for CEDIA 2016 opens June 8!

### Ethernet & IP Automotive Tech Day



The IEEE-SA Ethernet & IP @ Automotive Technology Day (E&IP@ATD) is the premier venue for OEMs, suppliers, semiconductor vendors and tool providers to discuss and learn about the evolution of Ethernet standards, technologies and applications in the automotive environment.

The theme this year is Automotive Ethernet: Switching between early investigations and extended Ethernet architectures.

AVnu Alliance will have a presence at the event and more details will be made available soon.

## AVB Case Study

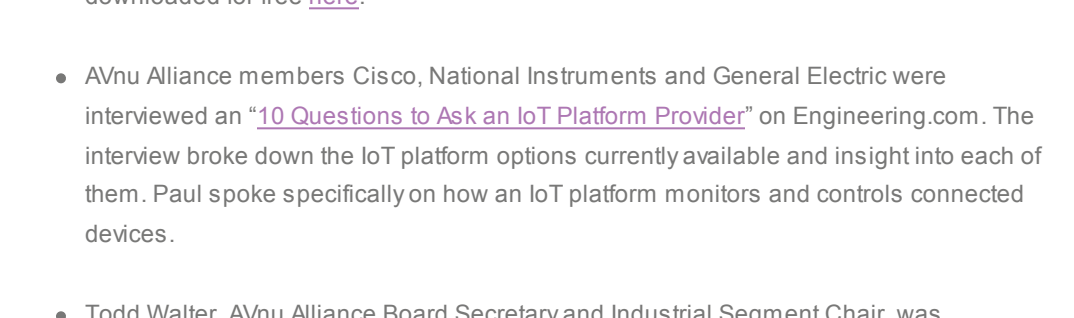
### Biamp



Florida Ninth Judicial Circuit Court of Orange and Osceola Counties

Located in central Florida and serving Orange and Osceola Counties, the Ninth Judicial Circuit Court is one of the largest judicial circuits in the state. Covering more than 2,000 square miles, the Ninth serves more than 1.3 million area residents. Because it is spread across such a large geographical area, the Ninth required reliable and flexible audio solutions that would allow the Courts to serve the local population effectively while using taxpayer funds most efficiently. Read more about how AVB was used in the Ninth Judicial Circuit Court by [clicking here](#).

## AVnu Alliance in the News



Scene from the TSNA conference in San Jose, CA.

The last few months have proven to be an exciting time for both AVnu Alliance and AVB/TSN.

- AVB/TSN received coverage after the TSNA Conference in San Jose, CA. Josh Srabo of [Commercial Integrator](#) wrote about the issues facing wide-spread adoption of AVB/TSN, and how AVnu Alliance is working to address them. On the introduction Cisco's AVB switch he said, **"with Cisco offering an AVB capable switch, the IT side of the world now has a manufacturer they are familiar with and trust for the backbone and we will likely see more companies looking to invest in the development of new hardware to take advantage of the features that AVB/TSN offers."**
- Cisco also released a new white paper on AVB design & deployment, which can be downloaded for free [here](#).
- AVnu Alliance members Cisco, National Instruments and General Electric were interviewed an ["10 Questions to Ask an IoT Platform Provider"](#) on Engineering.com. The interview broke down the IoT platform options currently available and insight into each of them. Paul spoke specifically on how an IoT platform monitors and controls connected devices.
- Todd Walter, AVnu Alliance Board Secretary and Industrial Segment Chair, was interviewed on ["4 Reasons Why Time Sensitive Networking Matters"](#) for Automation World. Todd discussed the four key benefits of TSN for industrial networking: bandwidth, security, interoperability and latency and synchronization. He also discussed the work that the IEEE 802.1 TSN Task Group and AVnu Alliance are doing for the TSN standard.
- Paul Brooks of AVnu Alliance member National Instruments wrote a blog for Industrial-IP Advantage comparing time sensitive networking to traffic light controls and Ethernet to roundabouts titled, ["Green Light for Time Sensitive Networking"](#).
- AVB/TSN was given a nod from Tim Albright in his [forecast](#) for InfoComm 2016. He mentioned that this year's event **"will be remembered for the year a number of monumental shifts happened in the AV industry"** and offered an explanation of the role AVB/TSN currently plays in network control.

## Member News and Recognition

### AVnu-Certified Product News



Excelfore's [AVB/TSN Software Stack](#) for audio and video has passed AVnu Certification at our third-party testing facility adding to the available reference design modules for manufacturers who would like to integrate AVB/TSN into products quickly and with confidence.

### New Members

In Q2 we added three new members to AVnu Alliance – Innovasic, Inc., Intrepid Control Systems, both of which are global suppliers of AVB/TSN supported tools and technology, working across the industrial and automotive markets, as well as Pakedge by Control4.

**Innovasic** Innovasic is an Albuquerque, NM-based supplier of silicon and software solutions in the industrial automation, transportation, instrumentation, automotive, and medical industries, supporting AVB/TSN standards for automotive and industrial systems. Innovasic has a rich history with communication protocols, and their joining the alliance signifies Innovasic's commitment to making Ethernet a success in Time Sensitive Networks.



Based in Detroit, Michigan, Intrepid Control Systems supplies testing, logging and simulation tools for vehicle networks. They specialize in high-tech software and electronics engineering, with a focus on automated PC-based measurement and control. "We are especially looking forward to working within AVnu Alliance on the most advanced Ethernet time-sensitive networking features, such as frame preemption" says VP of Business Development Colt Correa of the Intrepid's move to join AVnu.



With multiple locations in California, Pakedge by Control4 is a leader in advanced networking products and cloud-based management solutions for wired and wireless networks.

The addition of Innovasic, Intrepid Control Systems and Control4 represent the growing interest in AVB/TSN across the spectrum of the industrial, automotive and Pro AV space, as new capabilities arise in connected car production as well as the industrial and AV Internet of Things.

Visit their websites to learn more about [Innovasic](#) and [Intrepid Control Systems](#).

## News for Members

If you'd like to send along any questions, comments, case studies, company announcements, photos or other general submissions, please reach out to [Avnu@castercomm.com](mailto:Avnu@castercomm.com) and we'll address any issues and share updates in our next newsletter.

## Get Social!

Join our communities: Connect with AVnu Alliance to stay up to date on all Alliance announcements, including where we're going and what we're doing via our Twitter account ([@AVnu\\_Alliance](#)). You're also encouraged to join the conversation on our [LinkedIn page](#).



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