

## TOP STORIES

- [AVnu Alliance members presented at the first-ever Deterministic Ethernet Forum in Vienna](#)
- [AVnu Alliance is currently preparing for multiple education events at ISE 2016 in Amsterdam](#)
- [AVnu Alliance member HARMAN announced newly AVnu-certified signal processors - BSS Audio London BLU-805 and BLU-325](#)
- [Alliance members collaborated on AVB/TSN panel discussion at the 138th AES Convention in New York City](#)

### NAMM Show 2016

January 21-24, 2016  
(Anaheim, CA)

### AVnu Alliance Education Training Day

February 8, 2016  
(ISE, Amsterdam)

### Integrated Systems Europe 2016

February 9-12, 2016  
(Amsterdam)

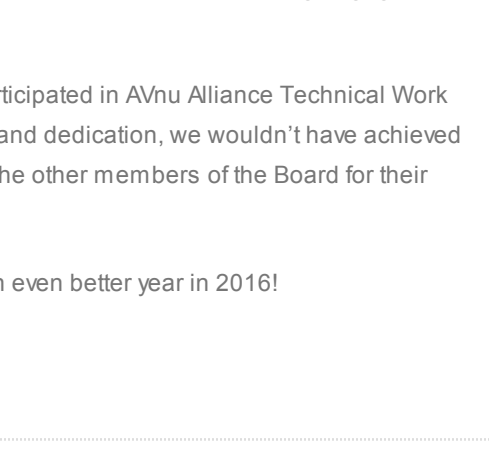
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## LETTER FROM THE PRESIDENT

First of all, on behalf of myself and the entire board, I would like to extend Seasons Greetings to AVnu Alliance members and supporters.

This has been a year for growth within the AVnu Alliance. We ended the year with 72 Promoter members and 13 Adopter members along with even more pending memberships that we will announce in the very near future. We expect to see this growth continue as we develop the test and certification for the growing markets we support.

Over the past year, AVnu Alliance has sponsored two successful technical conferences: The San Jose TSNA Conference in April and the Deterministic Ethernet Forum in Vienna, Austria in October. These events garnered such a great amount of interest that we are already planning the tracks for 2016. We are currently planning the second-annual Conference on TSNA for the week of April 11, 2016 in San Diego, we will announce registration information in the coming months. With expansion in mind, we also hope to hold a similar conference in Asia in the future, pending general interest. If you would like to be involved in the planning and organization of these events please contact Chairman Kevin Stanton via [Avnu@administration.com](mailto:Avnu@administration.com).



AVnu Alliance Chairman, Kevin Stanton presents at Deterministic Ethernet Forum

This past year, we also participated in a number of conferences and shows, including ISE, InfoComm, CEDIA, and AES. The Marketing Committee is busy planning the 2016 schedule, and I encourage any member who is interested in AVnu Alliance exhibitions or speaking engagements to participate in the Marketing Work Group calls.

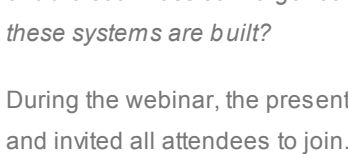
I would like to personally thank the members who participated in AVnu Alliance Technical Work Group and Marketing Work Group. Without their work and dedication, we wouldn't have achieved such growth this past year. I would also like to thank the other members of the Board for their support.

It has been a successful year, and I look forward to an even better year in 2016!

- Gary Stuebing, AVnu Alliance president

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

### Industrial Webinar



In September, AVnu Alliance Industrial segment hosted a webinar with Control Engineering Magazine titled: The Coming Changes to Standard Ethernet: Industrial IoT Convergence with the Control System. Nearly 300 attendees joined in to hear AVnu

Alliance segment leaders Paul Didier, Cisco, Dan Sexton, General Electric and Todd Walter, National Instruments tackle commonly asked questions regarding Time Sensitive Networking (TSN) and its place within control systems. The leaders answered questions like, *how can TSN enable seamless convergence within control networks? And, how is TSN going to impact the way these systems are built?*

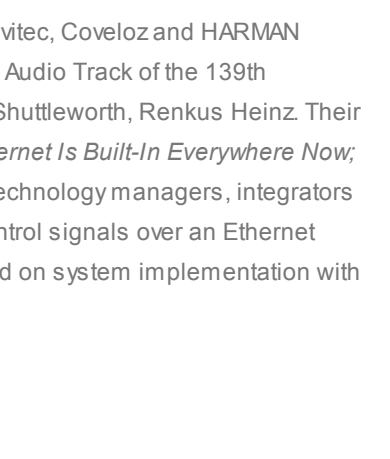
During the webinar, the presenters also announced the creation of the Industrial Advisory Council and invited all attendees to join.

### Speaking Engagements

#### CEDIA

At CEDIA Expo 2015, Marketing Workgroup Chair, Greg Schlechter teamed up with JB Fowler from Control4 for a training session focused on the importance of synchronization in networked consumer-facing audio systems. After sharing examples of audio that was not synced, they explained the importance of timing in audio and video systems and revealed that the root of synchronization issues lies within networks that were not originally designed for data to arrive at a certain time.

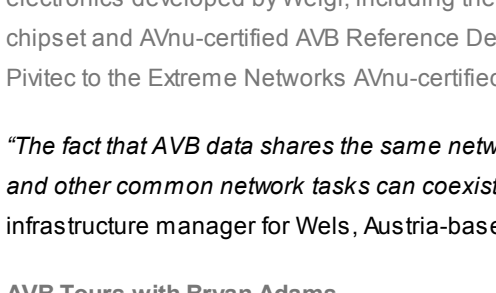
**"Accurate time requires frequent communication over a solid network."** – Greg Schlechter, AVnu Alliance CE Segment Chair.



Greg Schlechter presents at CEDIA 2015

### Case Studies

#### Kakas Great Adventure



Scene from Kaka's Great Adventure show at Chimelong Ocean Kingdom

Advanced audio technologies from Meyer Sound help deliver an immersive experience for audiences of all ages at Chimelong Ocean Kingdom's 5D Castle Theater in Zhuhai, China. The 1,000-seat theatre presents an animated show with support from 119 Meyer Sound loudspeakers. The theatre's sophisticated, multichannel presentation includes 26 input channels and various output channel configurations connected to the D-Mitri® digital

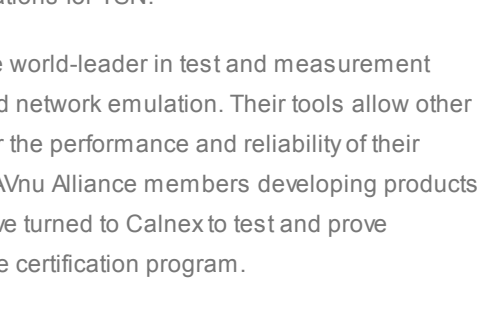
audio platform via one of the world's largest AVB networks. The show also uses the in-seat electronics developed by Weigl, including the AVB end station which is implemented with the XMOS chipset and AVnu-certified AVB Reference Design and the system connects via a MAD1 output from Pivtec to the Extreme Networks AVnu-certified Summit X440 and X460 switches.

**"The fact that AVB data shares the same network infrastructure as the control data is proof that AVB and other common network tasks can coexist, even on heavily utilized networks."** – Leo Wagner infrastructure manager for Wels, Austria-based Kraftwerk Living Technologies.

#### AVB Tours with Bryan Adams

Grammy award-winning recording artist Bryan Adams has been touring the globe for over 30 years, and when fans purchase tickets for one of his shows, they expect a larger than life experience where they can hear their favorite songs loud and clear, like they heard on their first Bryan Adams record. Creating his specific, well-known sound requires an experienced team armed with sophisticated equipment.

Robert Nevalainen and fellow Front of House engineer, Jody Perpik, are long-time users of Avid VENUE Audio Video Bridging (AVB) live sound systems.



Robert Nevalainen conducting sound check on the Bryan Adams tour.

As the team of mixing engineers prepared for the most recent Adams *Reckless 30th Anniversary* European tour, they decided to upgrade their existing systems with dual VENUE | S3L-X systems once they realized that the added functionality and I/O sharing on the AVB network could provide the streamlined setup and workflows they needed. The entire system consists of two AVID AVB S3L-X systems, four Stage 16 remote I/O boxes, and two Apple Mac Mini computers, with an Apple Mac Mini placed at each station recording or virtual sound checks—everything required for the FOH and MON mixing positions. The key to making this system setup incredibly simple is the AVB interconnectivity since it avoids both engineered network switch and routing issues. Moreover, if any cable fails to withstand the unpredictable touring atmosphere, they are protected by a ring network.

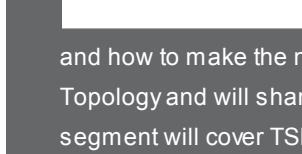
### New Members

We were thrilled to add two new industry leaders to our membership roster. Calnex and Rockwell are innovative leaders in the industrial and automotive markets and will bring decades of expertise to our membership as we continue to develop applications for TSN.



Based in Scotland, Calnex is the world-leader in test and measurement solutions for synchronization and network emulation. Their tools allow other companies to prove and monitor the performance and reliability of their network and their applications. AVnu Alliance members developing products

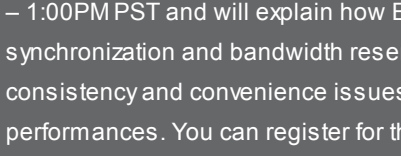
with AVB/TSN to get synchronization over Ethernet have turned to Calnex to test and prove performance at standards upheld by the AVnu Alliance certification program.



As the world's largest company dedicated to industrial automation and information, Rockwell Automation has a long history of technological innovation marked with milestones in industrial control systems and products. Customers in over 80 countries worldwide utilize their constantly evolving products for engagement in smarter manufacturing processes.

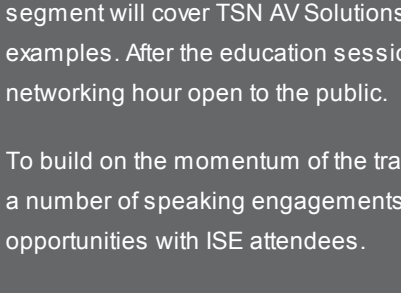
## Upcoming Events for AVnu Alliance

### NAMM Show 2016



This year at NAMM Show 2016, AVnu Alliance member Tom Knesel, Co-Founder of Pivtec will present *AVB in Live Sound for Houses of Worship* as a part of the TEC Tracks educational sessions. The presentation will take place on Saturday, January 23, 2016 from 12:00PM – 1:00PM PST and will explain how Ethernet AVB/TSN enables precise timing and synchronization and bandwidth reservation, making it an ideal solution for several of the consistency and convenience issues musicians face on the road and during live performances. You can register for the class [here](#).

### ISE 2016



This year, before ISE 2016 gets underway, AVnu Alliance will host a *Next Generation AV Network Fundamentals and Design Education Training Day on February 8, 2016 from 12:30PM – 5PM*. Three presenters will begin with Principles of Digital Networking to give attendees background information on the evolution of standard Ethernet

and how to make the most of AVB/TSN. The second session will focus on Network Topology and will share end-user installation and configuration considerations. The final segment will cover TSN AV Solutions, complete with installation and system architecture examples. After the education session wraps, AVnu Alliance will host a cocktail networking hour open to the public.

To build on the momentum of the training day, AVnu Alliance members will participate in a number of speaking engagements throughout the show to share education opportunities with ISE attendees.

Richard Bugg, Digital Products Solutions Architect at Meyer Sound will present the Kaka's Great Adventure case study alongside Leo Wagner of Kraftwerk as a part of the ISE Theaters education sessions. Their presentation will take place Thursday, February 11, 2016 at 11:30 AM. Richard Bugg will also present an InfoComm MasterClass at ISE on [Digital Audio Networking on February 11, 2016 at 2:00 PM](#).

Graeme Harrison, EVP of Marketing for Biamp will present three separate times at ISE. First he will present an *ISF FlashTrack session on "Why should AV care about IoT"* on February 9, 2016 at 11:00AM. Later that day he will present *"UCC and Huddle Spaces"* in the ISE Unified Communications Theatre at 2:30 PM. He will then present *"Understanding AVB/TSN and Its Advantages"* as a part of the ISE Audio Solutions Theatre on February 10, 2016 at 11:30 AM.

Justin O'Connor, Product Manager of Audio Protocols for Biamp, will present in the Show Floor Theatre on "Exploring Networked AVB/TSN: AVB, CobraNet & Dante" in the Audio Solutions Theatre on Tuesday, February 9, 2016 at 2:30 PM.

Sally Blank from Biamp will also present as a part of the ISE Theatre Program in the Unified Communications Theatre on February 10, 2016 at 2:00PM. She will cover "Identifying and Preparing for Industry Trends".

Register [here](#) to attend the free AVnu Training Day on February 8.

## AVnu Alliance in the News

As the industrial segment of AVnu Alliance continues to grow and garner attention, several publications took a deeper look into the various applications for AVB/TSN and broke down the technology itself.

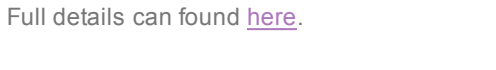
- Adam Lesser of Gigaom Research spoke with AVnu Alliance Industrial Segment Co-Chair Dan Sexton, General Electric to discuss how security and scalability are preventing the Industrial Internet of Things from progressing. His piece, [Closed versus open loop thinking in industrial IoT](#), shared how the AVnu Alliance is working to address those issues.
- Design World Magazine also examined standard Ethernet and the updates that must be made before industrial IoT can take off in [Networking for industrial machine tool building](#), an article by AVnu Alliance industrial segment chair, Todd Walter. He notes, **"An organization such as AVnu Alliance can provide the labeling to give end users confidence and the specifications required to pull together the family of standards that will assure that networks can meet the demands of the various applications."**
- Sean Gallagher of Ars Technica evaluated TSN in [The future is the Internet of Things-deal with it](#), and discussed its role in a variety of applications, including automotive. **"Time Sensitive Networking (TSN), a time synchronized networking standard overseen by the Institute of Electrical and Electronics Engineers (IEEE) and the AVnu Alliance, can easily accommodate many IoT applications as we saw in lab tests at GE. In addition to IoT applications in industry, TSN is being looked at for use in automobiles."** National Instruments Executive Vice President Eric Starkloff chimed in with, **"There's a strong desire for TSN to be used in the automotive space because companies want to use IP-based controls for automobiles."**
- On the Pro AV side, several publications shared details from the recent AVB/TSN installation at China's Chimelong Ocean Kingdom 5D Castle Theater. Alongside a number of AVnu Alliance members, Meyer Sound helped create a larger than life experience filled with 4D motion seats and the largest 3D screen on earth, all equipped with AVB. See full details on the installation in ProSoundWeb's [Chimelong Ocean Kingdom Outfitted With Meyer Sound](#). **"The theatre's sophisticated, multichannel presentation includes 26 input channels and various output channel configurations connected to the D-Mitri digital audio platform via one of the world's largest AVB (Audio Video Bridging) networks."** When asked about AVB's performance and installation process at Chimelong, Leo Wagner, infrastructure manager for Wels, Austria-based Kraftwerk Living Technologies said, **"Use of the new AVB audio networking standard greatly simplified installation, while affording greater flexibility in developing the audio effects."**
- Following the 139th International AES Convention, Sports Video Group Europe's editor David Davies spoke with AVnu Alliance's Marketing Workgroup Chair, Greg Schlechter about [AVB Certification momentum and real-world deployments](#). Schlechter notes, **"Building an ecosystem is the main purpose of the certification program."**

## Member News and Recognition

- **HARMAN Soundweb London BLU-805 and BLU-325 are AVnu-certified:**

Congrats to HARMAN on reaching AVnu

Certification for their Soundweb London BLU-805 and BLU-325. HARMAN shared the news at the 139th International Convention of the Audio Engineering Society (AES), both the BLU-805 and BLU-325 devices offer configurable inputs and outputs, compatibility with all Soundweb London input and output card options, logic processing capability, the 256-channel BLU link bus and GPIO. Each offers up to 16 inputs and outputs, configurable in banks of four. Full details can be found [here](#).

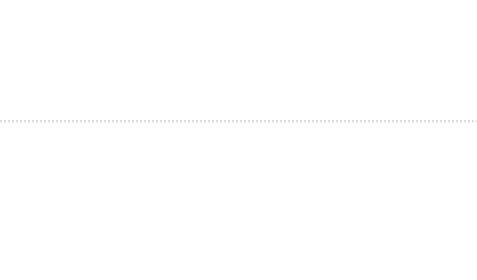


HARMAN BSS Audio Soundweb London BLU-325

- **HARMAN made an open source software contribution to the Open AVB project** to help drive the adoption of Ethernet AVB/TSN in automotive, consumer, pro audio/video and industrial markets. HARMAN's contribution includes major enhancements to the AVTP data pipeline and aims to modernize and equip the connected car with flexible, scalable and secure in-vehicle networking technology while addressing an increased need for highly reliable communication in the vehicle. Full details can found [here](#).

- **AVID is now shipping the next generation of their AVID VENUE | S6L**

live sound system with the industry's most advanced live sound engine that allows audio professionals to handle the largest and most complex tours. VENUE | S6L is a fully modular, scalable live sound mixing system that delivers best-in-class functionality for a range of live sound mixing applications, including front-of-house, monitor, broadcast, theater, and more. Get a look "under the hood" in Derk Hagedorn's blog for Avid [here](#).



Next generation AVID VENUE | S6L

## 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](#).