

136TH

AES CONVENTION

Estrel Hotel and
Convention Center
Berlin, Germany

April 26–29, 2014



CONVENTION REPORT



The 136th Audio Engineering Society Convention, which took place April 26–29, 2014 at the Estrel Hotel and Convention Center in Berlin, Germany, celebrated four days of the best that professional audio has to offer. Featuring a highly successful mix of technical program events, manufacturer exhibits, Project Studio Expo presentations, and more, AES136 enjoyed increased attendance and interaction among an enthusiastic gathering of personalities from every aspect of audio engineering and related industries.

The 1,259 convention attendees were presented with opportunities ranging from over 100 papers and engineering briefs, dedicated workshops and panels on topics of interest, and tutorials presenting important audio fundamentals. Additionally, top manufacturers showed their latest offerings and next-generation technologies in the exhibits hall.

Commenting on the success of the event, Bob Moses, AES executive director, said, “I’m really excited about the growth of the convention here in Berlin and about the amazing people who keep the AES community enthralled and inspired year after year. From our mold-breaking keynote speaker, Wieslaw Woszczyk, to the Heyser Memorial lecture given by Dietrich Schüller, to the first European edition of the Project Studio Expo, we can truly call this year’s program a success. We thank everyone who came out to participate, our sponsors, and our cochair Sascha Spors and Umberto Zanghieri for putting on a fantastic event.”

In their welcome note in the convention program, Sascha Spors and Umberto Zanghieri said that AES had last held a convention in Berlin ten years earlier, and a lot of changes have taken place in the audio industry since then. Audio equipment has changed considerably, and the way in which audio is distributed has been revolutionized. Speaking of the convention venue city, the cochairers pointed to Berlin’s rich history in audio engineering, its reputation as a

hotspot for convergent media, its active music scene, and its presence at the forefront of audio research.

OPENING CEREMONY DRAWS THE CROWDS

Welcoming delegates to the convention during the opening ceremony, Bob Moses said that he was very excited to be in Berlin, it being five years since the AES convention was last in Germany (in Munich) and ten since it had been held in Berlin. Preregistration, he explained, stood at twice the level of the year before, and he

expressed his gratitude to the companies that had sponsored and supported the show. Speaking of the convention committee, Moses told the audience “you have no idea how hard they work,” and commended the efforts of this entirely volunteer group. The Project Studio Expo, launched in the US, was not aimed at the elite of the industry but at those coming up through the ranks, so it would be a training event for those at entry and intermediate levels, held for the first time in Europe. He finished his introduction by announcing the intention



Bob Moses, AES executive director

to hold next year's European convention in Warsaw, Poland, to the general approval of exhibitors and delegates alike.

Sean Olive, AES president, noted that the iTunes store had been launched in 2003 and the iPhone and Android smartphones in 2007/08. Owning audio content has become passé, he said, because such connected mobile devices allow us to stream media content on demand, wherever we are. Furthermore, audio is increasingly experienced over headphones, with sales reaching \$8.2 billion last year, and still growing. He predicted, however, that we are soon to witness a renaissance in concern for the quality of recorded and reproduced sound, which will once again enable people to hear what the artist intended. The AES fulfills a crucial leadership role in this regard, promoting standards and methods and educating the community about what good sound is and how to obtain it, he enthused.

For convention cochair Sascha Spors, his first AES convention had been the Munich event in 2002, which had been remarkable for its mixture of practical engineering and hard science. He had also been attracted by the amount of activity concerned with the artistic side of the business. Here in Berlin he was particularly keen to remind people to attend the spatial audio demonstrations, including 3D on headphones, and he concluded by



Sean Olive, AES president



Sascha Spors, convention cochair



Umberto Zanghieri, convention cochair

wishing everyone an inspiring convention and by thanking the committee that had helped him to bring the event to fruition.

AWARDS FOR WORTHY RECIPIENTS

Jan Pedersen, chair of the Awards Committee, was pleased to commend a number of worthy individuals who had been selected for awards in Berlin (see next page for photos of all recipients). Two individuals received the special recognition of Distinguished Service Medals, and they both commented briefly on their experience. Roger Furness noted that he had never expected to receive such an award when he joined the Society 40 years ago. He had joined to learn about audio, but audio, he had discovered, is really a family and he had been privileged to have met and worked with many wonderful people during the years since then. In particular he thanked the staff of the Society, with whom he had worked as executive director. Subir Pramanik of the Danish Section had joined in 1975. He had been privileged to learn a lot about audio during the subsequent years, but he hoped to continue to learn, he said, "even though I am very old."

The award for the best peer-reviewed paper went to Giulio Cengarle and Toni Mateos of Dolby Labs for their paper on microphones in cinema calibration (paper 9083), while the student paper award went to Niels Elkjaer Iversen (coauthor Arnold Knott) from the Technical University of Denmark for his paper on small signal loudspeaker impedance emulation (paper 9053).

KEYNOTE PROMOTES COLLABORATION

Presenting the keynote address in Berlin was well-known audio engineering professor Wieslaw Woszczyk who told the audience that he was honored and humbled to give a few opening remarks. In similar vein to Sean Olive's opening comment, Woszczyk suggested that we are experiencing a renaissance in audio after years of stagnation, with better access and greater variety in music. Playing



Wieslaw Woszczyk's keynote included funky rap.



An overflow audience for the opening ceremonies listens attentively to Wieslaw Woszczyk's keynote.



Jan Abildgaard Pedersen, Awards Committee chair



Brett Leonard and Thomas Sporer, papers chairs, with Bozena Kostek, Journal editor, give papers awards.



Niels Elkjaer Iversen (Student Paper Award), present by Sean Olive



Giulio Cengarle (Best Peer-Reviewed Paper Award)



Juha Backman (Board of Governors Award)



Karlheinz Brandenburg (Board of Governors Award)



Francis Rumsey (Board of Governors Award)



Gyorgy Fazekas receives BoG award on behalf of Mark Sandler



Christian Dittmar (Citation)



Gyorgy Fazekas (Citation)



Tom Ammermann (Fellowship)



Natanya Ford (Fellowship)



Dietrich Schüller (Fellowship)



Roger Furness (Distinguished Service Award)



Subir Pramanik (Distinguished Service Award)

AWARDS PRESENTATION

first a recording from 1860 that predated the Edison cylinder, he moved on to citing Pharrell Williams recent massive hit, “Happy,” that had encouraged thousands of do-it-yourself videos worldwide. Music, he said, would always be part of the human experience. Although a fully working studio can now exist in a laptop computer, it is still too difficult for the average user to connect a mobile device to speakers using Bluetooth, for example. Things like this need to become more seamless. Little remains the same for long in the face of our relentless drive for new technologies. Together, said Wieslaw, we can refine the course of our industry, and we should not be afraid of what lies beyond our understanding. Collaboration is the key, not competition, he concluded.

SPONSORS SUPPORTIVE

The convention was supported by numerous sponsors and exhibitors, keen to have a presence among the world’s audio professionals. The main convention sponsors were Audio Precision, Auro Technologies, Focal Press, Prism Sound, Fairlight, DPA Microphones, and Eve Audio. Among the exhibitors, Chas Rowden, EMEA sales manager for exhibitor Calrec Audio Ltd., stated, “After several years of absence from AES European events, it was a pleasure for Calrec Audio to exhibit at the convention in Berlin. The AES has a new energy and focus that we as a manufacturing company found invigorating, with exciting new ideas and opportunities revealed each day of the show. Best of all, it was a pure audio industry occasion.”



Project Studio Expo: from left, Alex Case, Stephen Webber, and Carsten Kaiser with huge crowd at Project Studio Expo session.



Audience participation gets intense during Project Studio Expo session on live performance mixing techniques.

Among the sponsors, Kerstin Mischke, EVE Audio GmbH's sales and marketing manager, offered: "We were very excited when we became aware that AES would return to our hometown Berlin after ten years of absence. Soon it became very clear that we did not want to miss the show. We looked for opportunities not only to exhibit but also to contribute. With assistance from AES representatives, EVE Audio became part of the technical program. We offered tours in which participants could visit our acoustic lab with its anechoic and reverberation chambers—all available tickets for both tours were sold out within a very short time. We can conclude that the AES 136th Convention in Berlin was a very good show for us. Interest in our products in general was great, our tours were highly welcomed, and the overall atmosphere at the show and industry feedback have been very positive. We definitely would love to see AES returning more regularly to Berlin, because this town is a real hot spot when it comes to music, musicians, and audio—and a great place to be."

FIRST PROJECT STUDIO EXPO IN EUROPE

This was the first Project Studio Expo (PSE) to be staged in Europe, and it drew large crowds of eager learners on both Saturday and Sunday of the convention. Stephen Webber, producer and



Ron Streicher explains basic microphone technology.

educator, taught the delegates "Listening Like a Producer," after which Ron Streicher explained basic microphone technology. Carsten Kaiser's sessions included valuable training on how to get professional mixes from a project studio and advanced vocal editing, while Alex Case explained how to use reverb of many different kinds. A panel of seasoned experts discussed the ins and outs of making a career in today's music business, and Julian David explained how to "use microphones as your EQ."

PAPERS SESSIONS SHOWCASE RESEARCH

The diligent efforts of papers chairs Brett Leonard and Thomas Sporer brought together a compelling series of research papers on a wide range of audio topics. The topic of loudness and dynamic range, and their effects on listeners, has been raising considerable controversy in the recent past. Here in Berlin a number of authors



Authors explain their research: clockwise from top: Cleo Pike, Aki Härmä, and Niels Elkjaer Iversen.

tackled the subject with their research, including Mark Wendl and Hyunkook Lee with a paper on the effect of dynamic range compression on quality perception, and one by Robert Taylor and Bill Martens on listener preferences for dynamic range reduction. There were also a number of papers on the effects of spatial audio, particularly vertical localization, as well as some on auditory memory and critical stimuli in the sessions on perception. Swiss researchers gave an interesting presentation on the improvement of spatial rendering in hearing aids, a process that is often complicated by the signal processing undertaken to improve intelligibility.

A number of sessions on transducers pushed our understanding of the field forward, there being particular emphasis on what can be achieved through modeling and emulation of loudspeakers. A session on microphones included a novel analysis of the wonder-substance called graphene and the potential for its use in single or multiple layers as membranes in transducers.

ENGINEERING BRIEFS EMPHASIZE PRACTICAL RELEVANCE

The category of engineering briefs has been growing in popularity in recent years, as a way of presenting more applied reports in a relatively short timescale, with a relaxed reviewing procedure. There were a considerable number of these in Berlin, including an interesting offering by Bryan Martin of McGill University on the sonic characteristics of the jazz-style electric bass guitar, and another by Christopher Kling on the disappearing gap between engineering and producer in music production. A pair of



Wataru Sanuki demonstrates spatial sound for a navigation system



Tommy Ashby, right, discusses his poster on elevation perception.

authors from Inha University in Korea had come up with an objective evaluation method for the perceived quality of car horns, while a team from BBC R&D reported on the use of a computer-controlled motorized telescope mount as a rotational platform for making dummy head measurements.

WORKSHOPS AND TUTORIALS EDUCATE

Coordinated by Natanya Ford, a strong series of workshops and tutorials had major themes in Sound for Picture, led by Brian McCarty, and Broadcast, led by Florian Camerer. Among the Sound for Picture events was a master class in which world-class cinema sound mixers discussed their craft, a session on loudness in cinema sound, and a master class from composer Christine Aufderhaar during which the audience could watch her develop the sound track for a film. Among the Broadcast events was an update on "All You Need is LUFFS," from Florian Camerer who is chair of the



Eddy Brixen demystifies audio forensics.



Helmut Wittek and Michael Williams host a workshop on techniques for recording ambience in surround.



Malgorzata Albinska-Frank looks into Auro 3D recording of classical music.



Brian McCarty talks with Christine Aufderhaar about the composition of film music.



Tom Ammermann shows how content can be explicitly produced for headphones during one of the spatial audio demos.

EBU loudness group. Askan Siegfried of NDR in Hamburg gave a fascinating tutorial on speech intelligibility, during which he explained how to ensure that the audience doesn't have to strain to understand what is being said in a program.

EXPERIENCING TOTAL IMMERSION

For those who wanted a change from listening to people speak about audio, there was a program of spatial audio demonstrations, majoring on the immersive sound formats that are increasingly available. For the whole of Sunday and Monday, Thomas Koch led a series of demos on artistic approaches to wavefield synthesis, with compositions, performances, and studies for a 96-channel wave field synthesis system by students of the postgraduate master's program Sound Studies at Berlin University of the Arts, and students of the Studio for Electroacoustic Music (SeaM) in Weimar. Tom Ammermann of New Audio Technology gave a tutorial on "The New Kind of Spatial Audio Production for Headphones," showing how this new content can sound and introducing production tools and strategies to work in the headphone domain. He also gave another session on 3D audio production. Under the auspices of convention sponsors Auro, Malgorzata Albinska-Frank showed how to create "an invisible space" in immersive sound productions, and Lasse Nipkow explained how to incorporate room signals successfully within the aesthetics of Auro 3D recordings.

TECHNICAL TOURS

With his many years of experience at AES conventions, Martin Wöhr had organized eleven attractive technical tours for those delegates wanting to take in some off-site audio experiences. Key among them was a visit to Schuke Orgelbau, a major Berlin organ builder that has created more than 500 organs in its history. Visitors could also attend the TimeLab at Fraunhofer's Heinrich Hertz Institute for Communications Technology, which has a 180° cylindrical screen and 3D projection system with 14 HD projectors, as well as a WFS sound system. Babelsberg Film Studio was another popular venue, being the oldest large-scale studio complex in the world, founded in 1912. One group of visitors enjoyed a



Martin Wöhr (center) coordinates one of the many technical tours.



Visitors enjoy a tour of Teldex Studios, where hundreds of legendary recordings have been made.

contrasting visit to the BMW motorcycle plant in Berlin, where acoustic engineering meets two-wheeled vehicle production.

SPECIAL EVENTS

On Saturday evening convention visitors enjoyed hearing from Dietrich Schüller, who presented the Technical Council's Heyser Memorial Lecture entitled "Preserving Our Sound Recordings—25 Years Since Everything Changed." He charted progress in the preservation of sound recordings since the point when archives realized they didn't have to concentrate on keeping the original audio carrier intact. Digital technology meant that they could begin to concentrate on content preservation instead of having to look after vulnerable and unstable materials. Digital copies could be migrated between storage systems as technology evolved, and could be regularly checked for integrity. However it was clear that enormous challenges still exist when attempting to safeguard our recorded sound heritage before it disintegrates. Although wealthy countries and institutions may have this in hand, and have already done quite a lot of work, there are many developing and under-funded areas in which this is not so.

High above the streets of the city a banquet and mixer party got the social wheels moving on Sunday night. Held at Solar Sky, which featured a marvelous view of the city from the 17th floor, convention delegates could meet and chat with friends in a relaxing atmosphere.



The Heyser Lecture certificate of recognition is presented to Dietrich Schüller (second from left), flanked by, from left, Michael Kelly, Bob Schulein, Francis Rumsey, and Jürgen Herre of the Technical Council.

Finally, taking his convention debut in the role, and with the blessing of his otherwise detained colleague Graham Blyth, Francis Rumsey entertained delegates with an organ recital on one of the largest instruments in Berlin on Monday evening. Set in a challenging acoustical environment, having some eight seconds of reverberation, the organ's dynamic range was taken to the limits in works including Buxtehude's G minor Praeludium, Alain's *Trois Pièces*, and Guilman's "March on a Theme of Handel."

STUDENT EVENTS

Student activities always form a strong theme at AES conventions, and Berlin was no exception in this regard, thanks to the considerable efforts of John Krivit and Marija Kovacina. The 136th AES Convention was a huge success for the students who attended from all over the world



Students consult careers advisers and education providers during the fair



Francis Rumsey battles eight seconds of reverb during his organ concert at St. Matthias Church, with Natanya Ford following the score and turning the pages.



John Krivit (center) and Kyle Snyder (right) with SDA officers: from left, Magdalena Plewa, Brecht De Man, Simon Wystrach, Andrea Pepper, Marija Kovacina, and Steven Van Dyne.



John Kruit hosts Education Forum with students and educators during the convention.



Per Loenicker (second from right) wins the Student Design Competition, with, from left, Daniel Weiss, David Hill, and John Kruit.

throughout the convention where people could find the latest information about competitions and activities.

Among the many exciting activities undertaken in Berlin was the recording competition, with the four categories “traditional acoustic recording,” “traditional studio recording,” “modern studio recording,” and “sound for visual media.” Students were particularly grateful for the dedication shown by the panel of judges, including Mandy Parnell, Martha de Francisco, and Bryan Martin, in their evaluation of over 70 submissions. In the student design competition, which aims to reward aspiring hardware and software engineers, four prizes were announced: to Per Loenicker (Fachhochschule Düsseldorf), Diego Fagundes (University of Westminster, London), Matthias Kronlachner (Universität für Musik und darstellende Kunst Graz), and Marco Hugo Schretter (Kunstuniversität Graz).

On Monday morning a well-attended education and career fair was held, aiming to match job seekers with companies, and prospective students with schools.

A willing band of student volunteers, led by Patrick Dadaczynski and Tobias Heinl, deserves the thanks of all those present for helping to ensure that the convention ran smoothly.

TECHNICAL COUNCIL AND STANDARDS COMMITTEE MEETINGS

The Technical Council and its first Technical Committees were founded by the Society in 1979, and standing rules covering their activities were established in 1986 with the intention of defining

to engage in workshops, lectures, and other audio-related activities, to network, and to socialize. Further, Brecht De Man from the AES London Section was elected the new Student Delegate Assembly (SDA) vice chair for Europe & International Regions. The SDA also

manned a booth

to move their work forward in areas such as audio networking, file transfer and measurement, as well as electroacoustics, audio connectors, and metadata.

AES MEETINGS

The Regions and Sections Forum provides a chance for AES section officers attending the convention to meet with regional vice presidents and the chair of the Regions and Sections committee, to share experiences of good practice and hear about the innovative ways that world-wide sections are running their operations. Led by Peter Cook, this dynamic event showed just how much good work is being undertaken by volunteer committees in different parts of the world, to educate and inform local members about the latest in audio engineering.

A number of other standing committee meetings also took place during the Berlin convention, including an informal gathering of the Board of Governors after the close of the convention on Tuesday.

AND FINALLY...

The convention in Berlin showed a resurgence of support by the industry and an impressive increase in attendance. The AES is strongly dependent on the enthusiasm and willingness of its many dedicated members, as well as that of many supportive professionals, who give up their time and energy to make these events a success. The Society thanks them and looks forward to their support for many years to come.



Peter Cook enthusiastically chairs the Regions and Sections Forum.



Theresa Leonard and Kyle Snyder run the Membership Committee meeting.



Thomas Sporer and Brett Leonard,
papers cochairs



From left, Nadja Wallszkovits and
Jens Ahrens, facilities cochairs, and
Natanya Ford, tutorials and
workshops chair



Patrick Dadaczynski and
Tobias Heintz,
student volunteer cochairs



Brian McCarty,
sound for pictures chair



Florian Camerer,
broadcast chair



Marija Kovacina and John Krivit,
student events cochairs



Martin Wöhr, technical tours chair
(right), with Karin Fleming of Schoeps

MEMBERS OF THE 136th CONVENTION COMMITTEE



Members of the AES Board of Governors and committee chairs after the final session of the 136th Convention.