



London in May was once again the venue for the Society's European convention, taking over the Novotel London West for four solid days of technical meetings and three days of exhibits. In the capable hands of Peter Mapp and his dedicated convention committee, the 130th Convention brought together audio engineers from around the globe to meet and learn.

# 130th AES Convention

London UK

13-16 May 2011



## OPENING CEREMONY AND AWARDS

Opening the convention on the first day, Roger Furness, AES executive director, welcomed delegates to the UK capital where the convention had returned by popular demand, according to the Society's recent surveys. Jim Kaiser, AES president, echoed this warm welcome and introduced the convention chair, Peter Mapp. Drawing attention to a new category of presentation known as Engineering Briefs at this convention, he explained that these were intended to fulfil the need for more practical, application-oriented offerings and would complement the more than 140 papers at the 130th.

At recent conventions there have been best student paper competitions. Josh Reiss, papers chair, took the stage next to cite Mihailo Kolundzija as the winner of the 130th competition. His paper, "Design of a Compact Cylindrical Loudspeaker Array for Spatial Sound Reproduction" was co-authored by Christof Faller and Martin Vetterli.

In charge of announcing awards to a number of deserving recipients was Jim Anderson, chair of the AES Awards Committee. The Board of Governors Award, given for outstanding contributions to the Society, was presented to Jan Berg (chair of the 38th International Conference on Sound Quality Evaluation), Kimio Hamasaki and Toru Kamekawa (cochairs of the 40th International Conference on Spatial Audio), and to Michael Kelly (chair of the 41st International

Conference on Audio for Games).

The AES Fellowship, given to members who have rendered conspicuous service or recognized to have made a valuable contribution to the advancement in or dissemination of knowledge of audio engineering or in the promotion of its application in practice, was presented to three individuals. Andrzej Brzoska received the award for continuing excellence in audio production and achievements in audio technology; Christof Faller was given the award for achievements in the capturing and transmission of spatial audio; and Masami "Sam" Toyoshima was awarded the fellowship for his transcendent acoustic design for recording studios and contributions to the field of architectural acoustics.

The Bronze Medal is a particularly special award, given to a person who has helped significantly in the advancement of the Society. Here in London it was offered to Robin Caine, for substantial contributions to AES standards for digital audio, sustained over many years, and for the wisdom and guidance that has helped to develop these standards to be fresh and relevant for a new generation. Mark Yonge graciously received the award on Robin's behalf. A Bronze Medal (accepted by Kimio Hamasaki) was awarded to Yoshizo "Steve" Sohma in recognition of his commitment to developing the Japanese AES Section and other AES activities.

The keynote speech at the opening ceremony was given by Trevor Cox of Salford University, senior media fellow of the EPSRC and president of the Institute of Acoustics. His entertaining tour of some of the "sonic wonders" of the acoustical world took us through the underground sewers of London to the Whispering Gallery of St Paul's Cathedral where focused sounds appear to be coming out of the wall. Such an effect, originally accidental, exists in various other places, such as one of the tunnels under Grand Central Terminal in New York and the Mapparium in Boston. Only one such whispering gallery has apparently been built deliberately. A water cistern at Fort Worden State Park has a reported reverberation time (RT) of 45 seconds, which might be the longest in the world, although a cave in Vietnam has a theoretical RT of some five hours. Does anyone know of a more reverberant space? Trevor asked. If so, his website would love to hear about it. Acoustic archaeology, he suggested, tries to reconstruct the sounds of the past, and it is interesting to note that most cave paintings seem to be in the most reverberant places. Somehow acoustics must have been a significant influence on our early ancestors' artistic musings.

## EXHIBITION

Conveniently close to the central circulation area for the technical program, exhibitors demonstrated the very latest in audio engineering technology. Swarming with visitors for the entire three days of the exhibition, European audio dealer KMR met its current and future customers to discuss products such as the CLASP from Endless Analog. This revolutionary device integrates existing analog tape machines with a digital audio workstation in a seamless fashion.

Leading connector manufacturer, Neutrik, was showing off its updated powerCON—a lockable and robust three-pole power connector with high current capacity. The revised connector can be plugged live and there is now an input/output chassis mounting socket and an in-line male-female coupler. A new cabling system combines power and optical data connections in a single snake.

Boutique microphone manufacturer, Audio Engineering Associates, whose large retro-style products catch the eye, tempted



From top: Roger Furness, Jim Kaiser, Peter Mapp, Josh Reiss, and Jim Anderson



Trevor Cox, keynote speaker



Board of Governors Award recipients: from left, Jan Berg, Kimio Hamasaki and Toru Kamekawa, and Michael Kelly



Fellowship Award recipients: from left, Andrzej Brzoka, Christof Faller, and Masami "Sam" Toyoshima



Bronze Medal Award recipients: from left, Mark Yonge accepting for C. Robin Caine; Kimio Hamasaki accepting for Yoshizo "Steve" Sohma



Peter Mapp, left, presenting the Student Paper Award to Mikhail Kolundzija

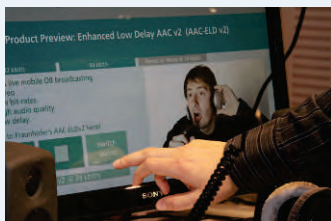
recording engineers with its KU4 unidirectional ribbon mic. Product designer, Julian David, explained that the KU4 is a modern interpretation of the KU3A unidirectional microphone designed by RCA for the Hollywood movie industry in the late 1940s. The KU4 combines the smooth ribbon sound of an RCA 44 (a predecessor to the KU3A) with a supercardioid pattern, a wide sweet spot, and reduced proximity bass boost. Nearby Schoeps promoted its SuperCMIT digitally enhanced shotgun microphone.

Among the attention-grabbing products new to the market was Focusrite's RedNet professional audio networking system. Based on the widely used Dante networking technology, RedNet uses Ethernet to transfer up to 128 channels of audio at 96 kHz sampling frequency, or half that number at 192 kHz. A number of different interfaces to the outside world can be acquired, and the system works with both CoreAudio and ASIO-compliant workstations, including a bridge to Pro Tools HD. RedNet can share the existing studio data infrastructure, and audio data can coexist

with other IP-based data services provided that routers support quality of service standards for real-time packets.

Celebrating its 60th anniversary manufacturing precision-engineered audio equipment, Nagra was demonstrating its Nagra VI eight-channel portable audio recorder in a 60th anniversary edition. Used widely for on-location recording with battery power, this robust recorder can store audio on either hard disk or compact flash memory, having iXML and BWF compatibility. (iXML is an open standard for the inclusion of sound metadata in broadcast wave files.)

In addition to announcing its new International Audio Laboratories at Erlangen (see Special Events, below) audio research giant Fraunhofer IIS was showing its AAC ELDv2 (Enhanced Low Delay) codec. This is optimized for low bit rates between 24 and 64 kbit/s, and can be used for remote stereo broadcasting over best-effort IP networks. It's designed to address the limitations arising from the increasing use of mobile IP data networks such as the UMTS data connectors used by many mobile phones. By



Delegates enjoy finding out about the latest audio equipment on stands by KMR and Fraunhofer in the exhibition area at the 131st Convention.



The Association of Professional Recording Services (APRS) was closely involved with the convention, and its stand was a great gathering point for visitors to meet old friends.

coding a mono core channel plus a small amount of side information for the perceptually relevant stereo parameters, good quality can be achieved at a lower bit rate than the previous version of AAC ELD. It is, however, backward and forward compatible. The codeveloped Sonnox ProCodec was also on display. It is a plug-in for digital audio workstations to enable the real-time comparison of audio codecs for mastering applications.

Designed in conjunction with Dutch pro-audio developer Technica Del Arte (TDA), AETA Audio Systems announced eScoop, an audio recording and broadcasting tool for the iPhone, iPad, and other portable platforms. Enabling reporters to capture live audio instantly and broadcast it with professional quality codecs, eScoop incorporates AAC-HE, G722, and MP2 encoding among others, as well as SHOUTcast/Icecast streaming that enables live or prerecorded material to be broadcast.

Joining other innovative systems shown at the 130th, Stanford Research Systems displayed its SR1 audio analyzer and Perfection 10 ultralow-noise rubidium clock reference, Celemony had its Capstan software for wow and flutter removal from analog recordings, and Weiss Engineering told delegates about its op-amp module for OEM applications.

## TECHNICAL PROGRAM

A comprehensive technical program had been assembled by papers chair Josh Reiss, tutorials and workshops chair Natanya Ford, and broadcast events chair Florian Camerer. As mentioned earlier, over 140 papers had been accepted for the convention, along with a number of new engineering briefs shown as posters and of a more



Among the authors who presented papers in lecture sessions were, clockwise from left, Judith Brereton, Scott Norcross, and Roger Johnsson.



practical nature. A posters area around the entrance to the convention

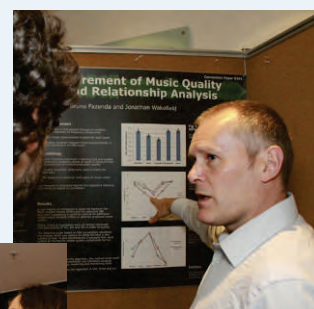
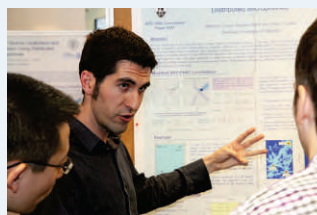
acted as a busy hub for people to discuss contributions by a number of authors throughout the four days, while two halls offered a home to the numerous lecture presentations.

Multitransducer microphone and loudspeaker arrays formed an important emphasis in the program of papers, including papers on soundfield analysis and spatial soundfield capture and rendering. A number of papers on microphone arrays showed how such systems can be used to localize multiple sources, either for speech processing such as enhancing noisy speech signals, or for the three-dimensional capture of directional sound fields to accompany 3D pictures. A similar concept, but for sound radiation, was exemplified in the winning paper of the student competition by Mihailo Kolundzija, which describes a cylindrical beam-former loudspeaker array that can achieve super-directional results at low frequencies. He showed how such an array can be used for spatial sound reproduction.

Considering the onward



Malcolm Hawksford poses a question to an author.



Among the authors presenting papers in poster sessions were, clockwise from left, Toru Kamekawa, Maximo Cobos, and Steven Fenton.



From left, Neil Wilkes, Morten Lindberg, and Darcy Proper were among the panelists in a workshop on high-resolution audio publishing.



Yves Raimond, left, and David De Roure cochaired the workshop *Music and the Semantic Web*.



Cathrine Sadolin demonstrates vocal techniques in the workshop *What Every Sound Engineer Should Know About the Voice*.



Alex Case offers one of his typically lively tutorial sessions.

march of live and interactive sound creation, Michael Kelly chaired a session on Saturday that included papers on classification of drum loop slices, kick-drum signal acquisition and reinforcement optimization, virtual performance and recording, and augmented/mixed reality audio games. Similar problems were addressed in a session chaired by Jamie Angus on audio content management, which looked at subjects such as audio content extraction and the automatic recognition of events in audio data. Renato Panda and Rui Pedro Paiva discussed how mood can be automatically tracked in music, based on supervised learning and classification, for example.

Among the new engineering briefs were offerings such as a discussion by Ainslie Harris asking whether young people actually care about the quality of their MP3s. She concluded that young people can tell the difference between bit rates but that there may be an age threshold below which listeners either don't notice or don't care.

Twenty workshops on a diverse range of audio and broadcast topics provided a rich tapestry of happenings for those interested

in current practice and technology. Chaired by David De Roure of the University of Oxford and Yves Raimond of the BBC, panelists discussed "Music and the Semantic Web" in a fascinating two-hour session devoted to the latest generation of Internet technology and its implications for music-related data. Frank Melchior of IOSONO chaired a group of experts who attempted to tackle the difficult problem of production for upcoming spatial audio formats, including object-based representation and the conversion of content between different formats. Among the most fascinating of the sessions at the 130th was Eddy Brixen's workshop "What Every Sound Engineer Should Know about the Voice," which included vigorous demonstrations of the CVT (Complete Vocal Technique) by Cathrine Sadolin of the Complete Vocal Institute in Denmark.

Tutorials provided educational opportunities for everyone, including a primer on managing tinnitus as a working audio professional, given by Neil Cherian and Michael Santucci. Unstoppably entertaining and informative was Ben Supper of Focusrite, who gave a two-hour roundup of binaural modeling systems for rendering loudspeaker stereo over headphones in "You, a Room, and a Pair of Headphones: A Lesson in Binaural Audio." We also discovered how to gain and keep a career in the live music industry from Andy Reynolds, owner of LiveMusicBusiness.com.

## TECHNICAL TOURS

So popular were the technical tours, organized by Richard Milard, that some of them were run twice. Both British Grove Studios and BBC's Broadcasting House put on two tours for visitors to the convention, British Grove being a purpose-built facility completed in 2005 that is home to a pair of original EMI mixing desks as well as a collection of vintage microphones. The BBC also hosted visitors at its Maida Vale Studios where most of its music and drama output has been recorded, as well as being the home of the world famous BBC Radiophonic Workshop. Among other famous London venues included in the list of available tours was the Royal Opera House at Covent Garden, which now incorporates highly sophisticated audio and video facilities in the basement, and the Royal Festival Hall, recently given revitalized acoustics by Larry Kirkegaard. William McVicker, the curator of the hall's organ, demonstrated the acoustics using the partially reinstalled Harrison instrument, the remainder of which will be brought back in 2015.

For those with an interest in the historical aspects of sound, tours to the British Library Sound Archive and the Science Museum Reserve Collection were attractive. The former holds more than a million discs and 200,000 tapes, featuring some 3.5 million recordings, while the latter contains a rarely seen collection of small and medium-sized artifacts relating to the audio industry.

## STUDENT EVENTS AND CAREER DEVELOPMENT

John Krivit, chair of the Education Committee, and Daniel Duboy of the Student Delegate Assembly staged a full program of events for students, including sessions designed to assist with career development. Opening the proceedings on Friday, Melvyn Toms of JAMES (Joint Audio Media Education Services) chaired a session entitled "The Changing Audio Professional" during which panelists debated the decline in apprenticeships and the growth in formal audio education over the past 30 years. A Student Science Spot where budding audio engineers could share their designs and project was open throughout the convention. The Education and Career/Job Fair offered an opportunity for companies and institu-

tions to display their offerings to potential students and employees.

One of the most popular elements of the student track at conventions is the recording competition. In London there were a number of chances for students to gain feedback on their work from industry professionals. Student Recording Critiques were moderated by Ian Corbett and generously sponsored by PMC. The recording competition entrees categorized as Sound for Visual Media, Traditional Acoustic Recording, Traditional Multitrack Studio Recording, and Modern Multitrack Studio Recording." At the start and end of the convention, the Student Delegate Assembly (SDA) met to hear the results of the competitions and of the election for a new vice chair, Philip Waldenberger of the Vienna Student Section.

## SPECIAL EVENTS

Heather Lane coordinated a series of special events that offered something to interest everyone.

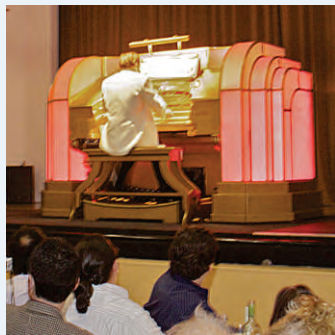
Welcoming delegates on the first evening of the convention, Fraunhofer IIS invited all visitors to meet for a reception in a social atmosphere to catch up with friends and colleagues from the world of audio. Jürgen Herre announced the expansion of Fraunhofer's International Audio Laboratories Erlangen, a joint venture with Friedrich-Alexander University. A number of new professorships are being established, based at the university in Erlangen-Nürnberg, and there are job openings for Ph.D. students as well as postdoctoral researchers.

Recounting the life story of MP3 coding, Fraunhofer's Karlheinz Brandenburg was the proud presenter of the Richard C. Heyser Memorial Lecture. Hosted by the AES Technical Council, Brandenburg's lecture, "How to Provide High-Quality Audio Everywhere: The MP3 story and More...", tackled the story of how high-quality audio could be transmitted over phone lines. Psychoacoustic coding was born and subsequently the Internet transformed the distribution of music to consumers. Although Brandenburg had been told

along the way that his work would kill the music industry, he was not so sure that it had turned out that way. Certainly it is different these days, but there is a multitude of legal sources of music, and many people have access to terabytes of it. The new challenge is how to find the gems in a vast archive of material, which is where MIR (Music Information Retrieval) comes in.



Karlheinz Brandenburg, third from left, receives a certificate to mark his Richard C. Heyser Memorial Lecture. He is flanked by the officers of the Technical Council: from left, Jürgen Herre and Michael Kelly, vice chairs, and Bob Schulein, chair.



Guests at the convention banquet enjoyed music played on the Mighty Wurlitzer cinema organ.



Malcolm Atkin (left) discusses acoustic treatment for small spaces, and Barry Marshall (right) explains the recording legacy of Phil Spector, at special events organized in association with APRS and DV247.



Delegates enjoy the convention banquet at the Musical Museum.



Dave Fisher, Peter Filleul, Dennis Weinrich, Barry Marshall and Elliott Randall explain how they "Didn't get where they are today..." in a joint event with APRS.



The 131st convention committee and staff: top row, left to right, Peter Mapp (chair), Josh Reiss (papers), Natanya Ford (workshops and tutorials), and Florian Camerer (broadcast events); second row, Daniel Deboy and John Krivit (education), Martin Wöhr (facilities), Richard Millard (technical tours), and Alice Clifford (student volunteers); third row Thierry Bergmans (exhibition) with Maurice Patist (PMC), Michael and Mark Williams (publications), and the student volunteer team.

Music has always been closely associated with audio, and many AES members are proficient musicians too, which is probably why two events at the 130th were particularly well received by the assembled company. Graham Blyth's organ recital took place on the first evening, following the Fraunhofer reception, at Lincoln's Inn Chapel. The Chapel lies at the heart of London's great legal establishment and was the proud recipient of a new three-manual organ by Kenneth Tickell in 2005. Graham opened his program with the "Great C major Prelude and Fugue" by Bach, followed by a variety of more recent works including Franck's "Fantasie in A" and a complete performance of Widor's 5th Symphony, culminating in the well-known "Toccata." Continuing the musical theme, the convention banquet was held at the Musical Museum in Brentford, which houses a collection of remarkable mechanical instruments including player pianos, orchestrions, and violin-playing machines. Upstairs in the concert hall, where delegates had an excellent dinner, was installed a mighty Wurlitzer on a rising stage. This organ had been moved from the Regal Cinema in Kingston and restored to its former glory, enabling it to be played by the museum's resident

organist to the delight of the audience. Later in the evening, the AES' own Francis Rumsey was allowed to attempt his own organ medley to whoops and cheers from the floor, including selections from "My Fair Lady" and ending with the old British favorite "I Do Like to be Beside the Seaside".

Taking advantage of the AES convention's presence in London, the APRS in conjunction with DV247 staged a series of events aimed mainly at the recording business. Thanks to the efforts of Peter Filleul and his colleagues, delegates could enjoy workshops such as "The Recording Legacy of Phil Spector," moderated by Barry Marshall and a series of three Talkback-Pro events. One moderated by Wes Maebe, looked into the myths and mysteries of DSP, aiming to "clear the cloudy mists that envelop proprietary toys." Also, the MPG hosted "Where Does the Buck Stop? QC in the Manufacturing Chain," moderated by Tony Platt in a very topical session.

### STANDARDS AND TECHNICAL COUNCIL

Thanks to Richard Chalmers, AES Standards Committee chair, and Mark Yonge, Standards manager, a busy schedule of stan-

dards meetings had been planned for the 130th Convention. These included working groups on digital audio measurements, file exchange and interfacing, as well as audio metadata, grounding, and connectors. Reports on these meetings can be found at [www.aes.org/standards](http://www.aes.org/standards). The Technical Council, under the chairmanship of Bob Schulein, was also busy with a series of Technical Committee meetings and a plenary meeting of the full Technical Council on Monday. Further information can be found at [www.aes.org/technical/](http://www.aes.org/technical/).

For a complete postconvention listing of events, go to [www.aes.org/events/130/130thWrapUp.pdf](http://www.aes.org/events/130/130thWrapUp.pdf). A CD-ROM with all the 130th papers can be purchased at [www.aes.org/publications/conventions](http://www.aes.org/publications/conventions). Individual papers can be purchased from the AES E-Library at [www.aes.org/e-lib](http://www.aes.org/e-lib).

## COMMITTEE AND BOARD MEETINGS

The twice-yearly conventions are also an excellent opportunity for members of the AES governing body to meet and undertake the business of the Society. Informal committee meetings were held during the course of the 130th, including Publications Policy, Conference and Convention Policy, Education, Membership, Laws and Resolutions, and Nominations.

A public meeting of the Regions and Sections Committee took place on Sunday under the chairmanship of Francis Rumsey, with delegates from AES sections in Europe and around the world. Participants got to hear about the excellent work of energetic section committees in reviving their sections or launching new activities, including new groups in different parts of the UK.

On the final day of the convention the AES Board of Governors met for an informal meeting, under the chairmanship of Jim Kaiser.

## BEHIND THE SCENES

Without the dedicated support of key players behind the scenes, conventions such as these would be difficult to stage, which makes the Society extremely grateful to Martin Wöhr, facilities chair, and the band of student volunteers coordinated by Alice Clifford. The exhibition was organized by Thierry Bergmans, while press relations were handled by Howard Sherman. Publications Sales were managed by Michael Williams and membership for the Europe region was administered by Sue Williams.



Delegates devour the reading matter at the publications stand.



Left: Søren Bech, Jan Abildgaard Pedersen, and Christof Faller take part in a meeting about AES publications. Right: Francis Rumsey chairs a meeting of the AES Regions and Sections Committee.



Left: AES president Jim Kaiser talks at a meeting of audio educators. Right: Richard Chalmers and Mark Yonge lead a standards meeting.





## AES BOARD OF GOVERNORS

- 1** From left, Diemer de Vries (past president), Garry Margolis (treasurer), Jim Kaiser (president), Bob Lee (secretary), Jan Abildgaard Pedersen (president elect)
- 2** Søren Bech (Publications Policy chair), Kimio Hamasaki (VP, International), Roger Furness (executive director)
- 3** Bob Schulein (Technical Council chair), Jay Fouts (legal advisor), Wiesław Woszczyk (Laws and Resolutions chair)
- 4** John Krivit (Education chair), Bob Breen (VP, Eastern U.S. and Canada), Bożena Kostek (VP, Central Europe)
- 5** Jim Anderson (Awards chair), Peter Mapp (convention chair), Bruce Olson (governor)
- 6** Richard Chalmers (Standards chair), John Vanderkooy (editor), David Josephson (governor)
- 7** Frank Wells (VP, Central U.S. and Canada), Francis Rumsey (Regions and Sections chair), Ville Pulkki (VP, Northern Europe)