AES 132nd Convention
Budapest, Hungary

26–29 April 2012

For the first time in its history, the Audio Engineering Society held its European convention in Budapest, capital of Hungary. Between April 26 and 29 the world's audio engineers gathered to listen, learn, and connect in this beautiful eastern European city.

János Gyori, convention chair, assisted by a dedicated team of volunteer committee members, had assembled a full program of technical sessions alongside an attractive selection of special events and social opportunities.

From left, Bob Moses (executive director), Jan Abildgaard Pedersen (president), and János Gyori (convention chair)

OPENING CEREMONY

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The opening ceremony of the convention included an opportunity to honor those whose achievements and service to the Society had led to their nomination for AES awards, as well as a stimulating keynote address by John Buckman. Welcoming delegates at the outset, the Society's new executive director, Bob Moses, told his audience that he was excited to be in Budapest and that a lot of "heavy lifting" had been done by Roger Furness, deputy director, to ensure the success of the event. He offered his thanks to Roger and reminded delegates of his wish to hear the needs of the audio community, in order to ensure that the AES could respond appropriately in the future.

Jan Abildgaard Pedersen, AES president, launched the convention saying, "Dear friends, dear AES members. we are here because we are passionate about what we do. The AES has gold in its hands that is worth preserving." He asked again to hear what the community wanted the Society to do for it in future and thanked Roger Furness for his exceptional service as director until the end of 2011. He was also keen to praise the headquarters staff for their dedication, "performing miracles" under considerable pressure, as well as the large number of volunteers to which he offered many thanks.

In his introduction to the convention, János Gyori remembered his hopes that one day an AES convention might be held in his home city. When he had attended the London convention in the previous two years he had been reminded about that city having the first underground railway in the world. As the first underground railway on the European continent had been built in Budapest, might the next convention be held there? That thought, he said, had become a reality. Budapest has a rich scientific and cultural tradition, he said. Numerous scientists worked there, including György Békésy, who was awarded the Nobel Prize for his research on the function of the cochlea. Also, famous composers such as Bartok and Liszt have put the city on the international map. It was a privilege, he said, to greet the highly respected AES, and he thanked all those who had worked hard to make the event a success. In particular he wanted to offer warm thanks to his colleague and experienced committee advisor, Gabor Heckenast, who at the age of 87 was the doyen of this convention.

Introducing the awards that would be presented, Diemer de Vries, chair of the Awards Committee, explained that although a few would be honored here the majority of recent awardees had opted to receive theirs at the U.S. convention in San Francisco. Bozena Kostek, editor of the *AES Journal*, was pleased to present the Student Paper Award to Marton Marschall and coauthors Sylvain Favrot and Jörg Buchholz) for their convention paper "Robustness of a Mixed-Order Ambisonics Microphone Array for Sound Field Reproduction," which would be presented on Saturday in the spatial audio session. Bozena also presented the convention's peer-reviewed paper award to two groups: first to Nicolas Sturmel and his colleagues for a paper on linear mixing models for active listening in studio conditions, and to Max Neuendorf and a large number of MPEG researchers for a paper on the recent standard for Unified Speech and Audio Coding.

Vesa Välimäki from the Finnish Section was presented with the Fellowship Award for his contributions to the development of advanced signal processing for audio applications, and Nathan Brock received the Board of Governors Award in recognition of his chairing the AES 44th International Conference on Audio Networking last November.

KEYNOTE ADDRESS

An inspiring keynote address followed, given by John Buckman, pioneer of numerous audio-related enterprises that exemplify imaginative business models suited to the present age. Buckman is the founder of Magnatune.com, a subscription-based music service for consumers that has an eclectic roster of artists, uses Creative Com-

An attentive audience awaits the keynote speaker, John Buckman.

Diemer de Vries, Awards Committee chair

Left, Jan Abildgaard Pedersen presents the Student Paper Award to Marton Marschall. Right, Max Neuendorf and colleagues receive the 132nd Peer-Reviewed Paper Award.

Nicolas Sturmel was the cowinner of the 132nd Peer-Reviewed Paper Award.

The AES Fellowship is presented to Vesa Välimäki.

The Board of Governors Award is presented to Nathan Brock.

AWARDS PRESENTATION

mons licensing, and adopts artist-friendly business practices.

Almost everyone in the audience, he said, makes things. The problem, though, is that people's attention these days is so diverse that you have somehow to grab it straight away with something that gives rise to a "wow!" "Whoops," on the other hand, is the danger of people walking away because you got something wrong and failed to hold their attention for long enough. "Whatever," the third "W," signifies the typical consumer response that there is too much else going on for them to be interested. Perhaps surprisingly, Buckman recommended not listening to our current customers too much—it is the next customers we should be trying to imagine. One example of a successful "wow" that worked commercially had been a list of audio jobs that people didn't want to do, such as cleaning up recordings. The service was cheap, by the hour, and not presented in a frighteningly offputting and over-professional way. If something looks too "professional" it can scare ordinary people away because they think it will be too expensive and might not be in their league.

With Magnatune, Buckman had decided that the company had to own the rights to all the music on the site. His "we are not evil"

"Wow, whoops, or whatever?" asks John Buckman.

slogan turned out to be the wow factor here because the RIAA and other record labels appeared to be predatory by comparison. iTunes, however, improved its model and eroded Magnatune's market, so they changed to a $15 per month subscription model for unlimited downloads. Spotify then became a major challenge to that. Other examples followed, but the broad concept Buckman has used involves doing all the work himself initially, after which the ideas are turned into recipes that someone else can do. Essentially he believes that if he can't do a job himself then he will get ripped off.

The audience greatly enjoyed John Buckman's keynote, thanking him with enthusiastic applause and taking away much food for thought.

TECHNICAL PROGRAM

Ville Pulkki and Gyorgy Wersényi, papers cochairs, had worked with authors and session chairs to put together 22 separate paper and poster sessions covering all the major areas of audio engineering (see p. 648 for an order form with all the 132nd papers, which are also available in the AES E-Library at www.aes.org/e-lib). Natanya Ford, responsible for workshops and tutorials, had coordinated an informative program consisting of over 30 sessions.

A new and growing category of presentation, the engineering brief (eBrief), initially conceived by former *Journal* editor John Vanderkooy, gave a strong showing. eBriefs are intended to be application-oriented, covering topics such as studio experience, equipment construction, new loudspeaker concepts, room acoustic measurements, analysis of audio equipment, and project

Bozena Kostek (fifth from right), *AES Journal* editor, together with a large contingent of students from Poland.

Karlheinz Brandenburg addresses a packed workshop on open questions in spatial audio.

Nicolas Sturmel presents his winning paper on linear mixing models.

Matthias Frank explains sound quality evaluation of a codec for digital wireless transmission.

Among the other authors who presented papers in lecture sessions were, clockwise from left, Agnieska Roginska, Josh Reiss, and Magda Plewa.

studio startups, to name just a few. Relaxed reviewing of submissions considers mainly whether they are of interest to AES convention attendees and are not overly commercial. Contributions in this category included an evaluation of subjective differences between digital audio workstations, rapid prototyping of audio DSP algorithms, and suspension creep models for miniature loudspeakers.

Among the notable papers, Christopher Lowis and his colleagues from BBC Research discussed a voice-classification system intended for young people to navigate online content. In a fascinating presentation he showed a number of examples of the sounds children use to describe certain images or objects, such as animal noises, and how one can train a support vector machine using audio signal features to classify such sounds. There was also consider-

able emphasis on capturing and reproducing 3-D audio signals, or surround sound with height, including presentations by Toru Kamekawa and his colleagues, Michael Williams, and James Barbour. Barbour's presentation described a unique personal reproduction array, known as the Equidome, with speakers around and above the listening position, with software capable of moving sounds around the space. Workshop 12, chaired by Frank Melchior and Florian Völk, also majored on this subject, asking "Spatial Sound Reproduction with Height: Why, Where, How, and When?" of a panel of experts including Michael Kelly of DTS and Nicolas Tsingos of Dolby. Karlheinz Brandenburg and his panel, including Jens Blauert and David Griesinger, also touched on the question of elevated sound sources in a standing-room-only Friday workshop on open questions in spatial audio.
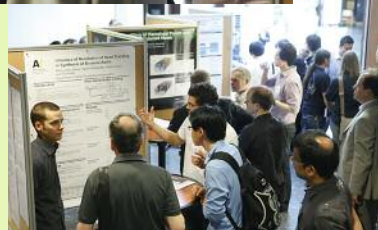
Because of the international regulation efforts in broadcast program loudness, a strong emphasis arose on the topic in

Nadia Wallaszkovits chairs a workshop on the replay of historical magnetic tape.
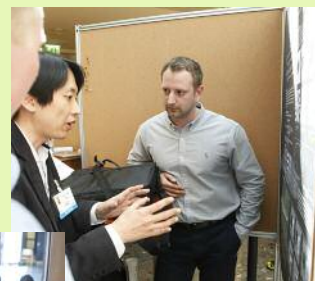
Among the authors presenting papers in poster sessions were, clockwise from top left, Ana Maria Torres, Martin Olsen, and Mikko-Ville Laitinen.

Panelists in the workshop on spatial sound reproduction with height: from left, Stephen Mauer, Johann-Markus Batke, Jan Plogsties, Kimio Hamasaki, Frank Melchior (cochair), Nicolas Tsingos, Norbert Niemczyk, Michael Kelly, and Florian Völk (cochair).

MUSHRA Reloaded workshop panelists: from left Poppy Crum, Thomas Sporer, Judith Liebetrau (chair), and Frederik Nagel

Marek Walaszek presented a tutorial on mixing techniques for electronic music.

Delegates listen intently at a workshop.

Budapest. Papers included a description by a group from Italy of the HELM (high efficiency loudness model) for broadcast content, as well as another attempting to define the "listening comfort zone." Because we still have relatively little idea what metering methods provide useful indications of "hearing annoyance," the authors concentrated on trying to find measures that usefully represent this perceptual phenomenon. EBU loudness champion Florian Camerer contributed further to the discussion of this topic in his Saturday workshop, during which the panel debated how, when, and where EBU Recommendation R128 would be put into practice.

Of great interest to participants in the 132nd Convention were workshops on two major topics in current audio development. The game audio workshop chaired by Michael Kelly included a substantial section from a pair of presenters from Nemesys Games who

From left, Gary Gottlieb, Darcy Proper, Ronald Prent, Jim Anderson, and Andres Mayo took part in workshops and tutorials on recording and mastering.

looked at the pros and cons of selecting different audio engines for game development. They based this around their current title, "Ignite," considering the challenging task of implementing car engine sounds. "Audio Hardware in Smartphones," chaired by Antti Kelloniemi, dealt with the rising quality expectations for these devices and the need for them to be kept small and affordable. High quality noise reduction and echo cancellation is expected, along with multichannel audio capture with wide frequency response and dynamic range. (See www.aes.org/events/132/program for the complete program of events.)

EXHIBITION

A modest exhibition complemented the technical program, coordinated by Thierry Bergmans. Star of the show was a stand presented by Mercedes-Benz on which was launched their Front Bass system, installed in a couple of Mercedes SL Roadsters that had been driven down from Germany. Bass loudspeakers had been installed in specially constructed enclosures located between the engine compartment and the front footwells, giving rise to a new bass listening experience compared with the conventional rear parcel shelf and door loudspeakers. Delegates could sign up for individual listening sessions, which were fully booked throughout the convention. Coupled with the car sound installation was the Signature Sound music production DVD, designed to offer an immersive listening experience tailored specifically for the car's audio system and the locations of the listeners. This was also described in a special session on future directions in multichannel, during which the team involved in the production described how the music had been specially mixed and mastered at Skywalker Sound by Leslie Ann Jones.

Charter Oak presented its compressors and equalizers along with its new H1000 tube microphone. Crane Song was there with its tape emulation plug-ins and audio outboard gear, as was David Josephson of microphone specialists Josephson Engineering. Microtech Gefell presented its line-up of vintage microphones and studio condensers, while Profusion promoted audio semiconductors including a digital volume control, and a Class D amplifier from Abletech and audio DSP by Dream. The Roland Systems Group and Neutrik also had stands, Neutrik promoting its Powercon, True 1, and Opticon advanced connectors. Solid State Logic was represented by its distributor in Hungary, Audio Monde TSAM, and Delta Senselab was explaining its audio listening test package.

In demo rooms, Auro Technology was showing its Auro 3-D surround system, which encodes height information into conventional surround mixes, enabling it to be extracted and routed to additional elevated loudspeakers for greater immersion. This was part-

A convention visitor studies information about Mercedes-Benz Signature Sound.

Making connections on the Neutrik stand.

Star of the show: Mercedes SL sports car with Front Bass.

Students discover the latest in mixing technology.

Delegates experiment with Charter Oak's many microphones.

Bookings are taken for the Auro 3D demonstration.

EXHIBITION

nered by a session in the special event on future directions in multichannel, during which Gregor Zielinsky of Sennheiser discussed recording techniques for this novel system with a selection of panelists. In a second room Bloomline Acoustics, represented by Leo de Klerk, demonstrated an innovative pair of omnidirectional loudspeakers constructed using a downward and/or sideways-facing cone. With the cone facing sideways the stereo image was said to be good, while the result was more spacious when the cone was facing down. A combination of the two elements is possible, combined with an inverted woofer to spread the radiation. Continuous Phantom Imaging is the term coined to represent the concept. A key fac-

tor that is claimed involves no change in the head-related transfer function as the head moves, leading to more neutral tone color.

SPECIAL EVENTS

Providing a number of highlights in a packed program, the special events at the 132nd Convention included a mixer party on the first evening, where friends and colleagues from the world of audio could reunite in convivial surroundings.

A Graham Blyth double bill demonstrated the multifaceted talents of this AES Fellow, both in a Richard C. Heyser Memorial Lecture and an organ recital. Blyth's lecture on Friday evening, enti-

tled "In Pursuit of Elegant Simplicity: Life, Luck, and Learning in Music and Audio," described how he became a design engineer in the audio industry, the development of the mixing console from a personal perspective during his 41 years in the business, and his approach to microphone preamp design. He emphasized the role of the analog engineer in a largely digital world, as well as touching on the musical challenges inherent in designing high-quality digital classical organs. The organist emerged on Saturday evening at the oldest church in Pest (Pest is one half of the joint city Buda-Pest), where Liszt's own musical Sunday mornings often began. On an organ built around 10 years ago in the French symphonic style by Hungarian builders Varadi & Son, Blyth opened with Bach's Prelude and Fugue in B minor, followed immediately by Franck's Chorale No. 2 in the same key. The recital concluded with the majority of Vierne's 1st Symphony, ending up with the ebullient and famous Final movement.

On the Saturday evening, following Blyth's recital, a banquet was laid on at the Academy Club in the Hungarian Academy of Sciences. This elegant and exclusive building was a perfect setting for dining and mixing with friends and colleagues, while taking in the breathtaking views of Buda Castle and the River Danube by night. An exciting choice of seasonal dishes was offered combining traditional Hungarian flavors with modern presentation.

TECHNICAL TOURS

Sandor Steinbach had arranged five technical tours catering to a wide range of interests. The first one, to the Hungarian Parliament, introduced the sound and voting systems, as well as an HDTV network for broadcasting and archiving events. There was also a tour of the LAST (Laboratory of Acoustics and Studio Technology) at Budapest University of Technology and Economics, taking in its facilities for electroacoustics and audio. Demonstrations were provided of an aircraft noise simulator, along with the simulation of air flow in flue organ pipes. Two tours took visitors to the Béla Bartók Concert Hall at the Palace of Arts, one to learn about the variable acoustics engineered by Russell Johnson and the other to discover all about the studio facilities associated with this complex. A Studer networking system links both halls to the studio and programs can be transmitted to radio and TV stations via an outside broadcast truck or over dedicated lines. The final tour took in Focus-Fox Studio, a sound-for-picture screening room and studio that aimed to

fulfill both Dolby and THX requirements in a comfortable setting. Digital and film projectors were shown as well as a two-operator ICON console and Pro Tools HD system with Dolby 3-D audio.

STUDENT EVENTS AND CAREER DEVELOPMENT

As is customary during both AES conventions each year, the Student Delegate Assembly (SDA) met on a number of occasions. Coordinated by Education Committee Chair John Krivit and chair of the SDA in Europe Magdalena Plewa, the education events in Budapest were a resounding success attended by large numbers of students. In particular, the recording competitions attracted substantial attention, with contributions from entrants in four different categories. A panel of distinguished judges provided feedback on recordings made by students, in front of a packed hall, with the three top finalists in each category presenting a short summary of their mixing intentions and recording techniques. Gold, silver, and bronze medals were awarded, the results of which can be found on the AES website at http://www.aes.org/students/awards/recording/#132, including prizes from a range of sponsors including Schoeps, Sonic Studio, Celemony, and Charter Oak.

During the Education Forum on Friday, representatives of the Education Committee and SDA looked at strategies for making connections with the professional world and discussed the curriculums and philosophies of audio education programs. An Education and Career/Job Fair on Saturday offered institutions the chance to present their wares to prospective students in a table-top session. Companies attending the convention could also talk about the prospects for jobs in their field with those looking for their first employment in this competitive industry.

STANDARDS COMMITTEE AND TECHNICAL COUNCIL

Behind the scenes at conventions there is an extensive program of meetings to plan and execute the technical activities of the Society. Bruce Olson, chair of the Standards Committee, together with Mark Yonge, standards manager, ran a full program of standards committee meetings during the 132nd Convention, culminating in the plenary meeting on the last day. Francis Rumsey, chair of the Technical Council, together with his vice chairs, Bob Schulein, Jürgen Herre, and Michael Kelly, fostered the council's planning of

Technical Council officers present Graham Blyth with a certificate on the occasion of his Richard C. Heyser Memorial Lecture: from left, Francis Rumsey, Michael Kelly, Graham Blyth, and Jürgen Herre.

A group of happy delegates enjoy the brilliant sunshine before boarding the van en route to a 132nd technical tour.

Members of the convention committee outside the convention center: from left, Domonkos Timár, Gyorgy Wersényi, Natanya Ford, János Gyori, Roger Furness, István Matók, and Ville Pulkki.

Middle row: from left, Domonkos Timár (student volunteers coordinator), István Matók (facilities chair) and János Gyori (convention chair); Gyorgy Wersényi and Ville Pulkki (papers cochairs); Gábor Heckenast (committee advisor) and Sandor Steinbach (technical tours chair).

Bottom row: from left, John Krivit and Magdalena Plewa (student events cochairs); Natanya Ford (workshops and tutorials Chair) talking with Judith Liebetrau and Frederik Nagel.

CONVENTION COMMITTEE

upcoming activities at conventions and conferences, as well as its publications and policies, outreach, and organization.

COMMITTEE AND BOARD MEETINGS

Conventions are also an opportunity for the Board of Governors of the Society (see p. 602), along with its committee chairs, to meet and plan the strategy in areas such as publications policy, conference policy, and awards. On the evening of the last day of the convention the Board met to undertake the formal business of the organization, followed the next day by a strategy meeting of broader scope designed to enable wider-ranging discussion of the future direction of the AES.

Peter Cook (Regions and Sections chair) holds forth at a meeting of the Regions and Sections Forum.

Bruce Olson (right), Standards Committee chair, Mark Yonge (center), standards nanager, and John Grant at a standards meeting.

From left, Jan Abildgaard Pedersen (president), Joel Brito (VP Latin America), and John Krivit (Education Committee chair)

Bob Moses (executive director) considers the issues at the Publications Policy Committee meeting.

Jan Ablidgaard Pedersen (president) during the Convention Policy Committee meeting.

Diemer de Vries, Conference Policy Committee chair, sports one of the bright orange hats designed for the 45th Conference held in March in Finland.

THANKS TO...

BOARD OF GOVERNORS

Front row L–R: Bob Moses (executive director), Peter Cook (Regions and Sections), Jan Abildgaard Pedersen (president), Andres Mayo (Special Advisory Group), Kimio Hamasaki (VP International Region), Robert Breen (VP Eastern USA/Canada)

2nd row L–R: Frank Wells (VP Central USA/Canada), Theresa Leonard (Membership), Bob Lee (secretary), John Krivit (Education)

3rd row L–R: Roger Furness (deputy director), Agnieszka Roginska (Convention Policy), Nadia Wallaszkovits (VP Central Europe), Diemer de Vries (Conference Policy), Wieslaw Woszczyk (Laws & Resolutions), Ben Kok (governor)

4th row L–R: Jim Anderson (governor), Garry Margolis (treasurer), Umberto Zanghieri (VP Southern Europe), Bozena Kostek (editor), Joel Vieira De Brito (VP Latin America)

5th row L–R: Ville Pulkki (Publications Policy), Bruce Olson (Standards), Francis Rumsey (Technical Council), Steve Green (business development manager), Gary Gottlieb (governor), Jim Kaiser (past president, Nominations)