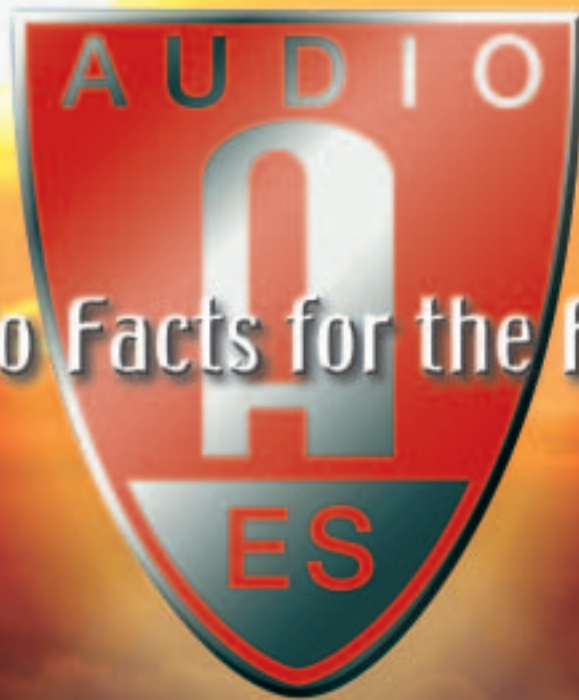


Preliminary Program

116th CONVENTION
& PRO AUDIO EXHIBITION

AUDIO ENGINEERING SOCIETY



Audio Facts for the Future

Berlin
Germany
08 - 11 May 2004

EXHIBITION • PAPERS • WORKSHOPS • TECHNICAL TOURS
TUTORIALS • EXHIBITOR SEMINARS • SPECIAL EVENTS

www.aes.org

116th@aes.org

Preliminary Program 116th CONVENTION

INTRODUCTION

Berlin, the capital of Germany, invites you to come to the 116th AES Convention. It will take place at Messe Berlin from Saturday, 08 May to Tuesday, 11 May 2004. Messe Berlin is easy to reach from all parts of the world on a cost-effective basis. Also, it is easily reached by train or car and is close to the city and hotels.

This Convention offers the visitor the largest range of pro-audio technology on display this year in Europe. Nearly 300 companies will show their newest products. In the Technical Program (Papers, Posters, Workshops, Tutorials and Exhibitor Seminars), you will hear about both high level research topics and practical information that you can use in your day-to-day work. The large number of topics is concentrated into a four-day program.

This Convention is very important for engineers, scientists and those from the recording, broadcasting, film, theatre and live sound worlds. It is the place to make new contacts and to get the latest information for your future.

The city of Berlin, located in the middle of Europe, welcomes the new countries of the European Community, which will become member states of the EU at the beginning of May 2004. This also gives an opportunity to open up new business connections and to expand the world of pro-audio.

We can only give you an overview of the wealth of events taking place at this convention. Please go to the AES website at www.aes.org for the most recent and expanded information. The 116th AES Convention in Berlin is a must for your calendar. We look forward to seeing you there.

REGISTRATION AND HOTEL RESERVATIONS

These can be made on the Internet at www.aes.org, or on the enclosed forms. Advance registration offers a reduced fee and gives faster entry to the Convention. On-site registration is also possible.

PRE-CONVENTION SYMPOSIUM

The Effects of Multi-channel on Radio Operations

On the day prior to the Convention a one-day symposium will take place of particular interest to broadcasters. Radio operations are clearly affected by multi-channel sound and this symposium will explore both challenges and problems.

AES EXHIBITION AND EXHIBITOR SEMINARS

All the important manufacturers in Pro-Audio will be exhibiting the very latest in equipment, including many brand new releases, on the exhibit floor or in demo rooms. The AES Exhibition is the only time you will see these exhibitors together under one roof.

At the 114th Convention in Amsterdam, a new feature was introduced: Exhibitor Seminars. This type of presentation allows the industry to explain and demonstrate new product developments in a different framework than in a Paper or Workshop, or even the exhibition. The Exhibitor Seminars allow the visitor to explore the recent product developments in a very detailed way and will act as a link between the Exhibition and the Conference Program.



EXHIBITION OPENING HOURS

Saturday, May 8	10:00 h - 18:00 h
Sunday, May 9	10:00 h - 18:00 h
Monday, May 10	10:00 h - 18:00 h
Tuesday, May 11	10:00 h - 17:00 h



SPECIAL EVENTS

Friday, May 7

- AES MULTICHANNEL SYMPOSIUM - The Effect of Multichannel on Radio Operation

Saturday, May 8

- OPENING CEREMONIES - Opening Remarks - AES Awards Presentation - Keynote Address by Raina Konstantinova

This is the opportunity for the Society to honor those who have made significant contributions in the field of audio and the AES awards will be presented here. The keynote-speaker *Raina Konstantinova*, Director of the EBU Radio Department, will speak about the radio landscape in Europe as she sees it and digital strategies for the future.

- MIXER PARTY

There will be a social get-together on Saturday evening in the new South-Entrance Atrium of the Messe Berlin, where you can meet old friends and get to make new ones. There will be music and a cash bar. Entrance is free of charge.

Sunday, May 9

- SING-ALONG MOZART – HAUS DES RUNDFUNKS

Advance booking is required. After receipt of your booking you will be sent the score, enabling you to practice before you join the actual rehearsals and sing-along.

- HEYSER LECTURE by *Kees Schouhamer Immink*

The lecture titled "From Analog to Digital" will be followed by a reception hosted by the Technical Council.

- ORGAN CONCERT

To be held in St. Matthias Cathedral, famous for its excellent acoustics, this will give an opportunity to relax after the working hours at the convention. Graham Blyth, known to many for his past AES organ recitals, will play several pieces from his treasure trove.

Monday, May 10

- AES BANQUET

On Monday evening (20:00 h), an informal Convention Banquet will take place in the old Telephone Exchange Room situated in the Berlin headquarters of Deutsche Telecom, dating from 1880. Don't miss this excellent opportunity to meet with pro-audio friends in a relaxed atmosphere with music, good food and wine.

For all program details and latest information go to www.aes.org/events/116

PAPERS AND POSTERS

The Papers program this year is more vibrant than ever. With some 100 Papers to be presented in 18 sessions it is a packed program. In addition, another 90 Posters divided over 10 sessions will be shown, where engineers and developers can demonstrate their latest work in a more practical way than in a normal paper and it can be combined with demonstrations on a laptop computer or headphones.

Saturday, May 8

- **AUDIO NETWORKING**
- **SPATIAL PERCEPTION AND PROCESSING - PART 1** (focus on spatial perception in virtual space)
- **AUTOMOTIVE AUDIO & INSTRUMENTATION AND MEASUREMENTS**
- **AUDIO ARCHIVING, STORAGE, CONTENT MANAGEMENT**
- **SPATIAL PERCEPTION AND PROCESSING - PART 2** (focus on novel rendering and control techniques)
- **AUDIO IN COMPUTERS & AUDIO VIDEO SYSTEMS**
- **ANALYSIS AND SYNTHESIS OF SOUND - PART 1** (focus on analysis)

Sunday, May 9

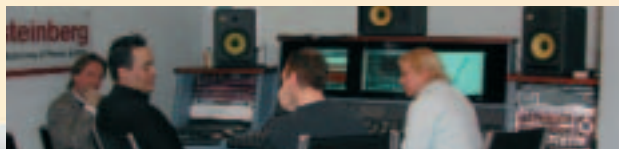
- **ANALYSIS AND SYNTHESIS OF SOUND - PART 2** (focus on synthesis)
- **SIGNAL PROCESSING & AUDIO IN BROADCASTING**
- **LOW BIT-RATE AUDIO CODING - PART 1** (focus on standards)
- **MULTICHANNEL SOUND**
- **LOW BIT-RATE AUDIO CODING - PART 2** (focus on new technologies)
- **SPATIAL PERCEPTION AND PROCESSING & ANALYSIS AND SYNTHESIS OF SOUND**
- **SPATIAL AUDIO CODING**
- **PSYCHOACOUSTICS, PERCEPTION, AND LISTENING TESTS**

Monday, May 10

- **SIGNAL PROCESSING - PART 1** (focus on algorithms and equalization)
- **LOUDSPEAKERS - PART 1** (focus on drivers and horns)
- **ROOM AND ARCHITECTURAL ACOUSTICS & MUSICAL ACOUSTICS**
- **LOUDSPEAKERS - PART 2** (focus on systems and applications)
- **MULTICHANNEL SOUND & WAVE FIELD SYNTHESIS**
- **SIGNAL PROCESSING - PART 2** (focus on analysis and reproduction)
- **AUDIO RECORDING AND REPRODUCTION & ARCHIVING AND CONTENT MANAGEMENT**
- **MICROPHONES**

Tuesday, May 11

- **PSYCHOACOUSTICS, PERCEPTION, AND LISTENING TESTS**
- **AUDIO RECORDING AND REPRODUCTION, HIGH RESOLUTION AUDIO**
- **LOUDSPEAKERS & MICROPHONES**
- **INSTRUMENTATION AND MEASUREMENTS**
- **ROOM ACOUSTICS AND SOUND REINFORCEMENT**
- **LOW BIT-RATE AUDIO CODING**



WORKSHOPS

These offer information about current technologies in a more practical and interactive way. Discussions between the panelists as well as with the audience form the backbone of these events, which give real-world solutions to everyday practical problems.

Saturday, May 8

- **AURALIZATION, TOOL OR TOY** - *Jan Voetman, Ingolf Bork, Dorte Hammershoi, Christoph Moldrzyk, Jens Holger Rindel, Lise-Lotte Tjellesen*
- **THE DO'S AND DON'TS OF MICROPHONES** - *Martin Schneider*
- **MULTICHANNEL IN AUTOMOBILES** - *Tim Nind*
- **PERCEPTION OF LOUDSPEAKER NONLINEAR DISTORTION: AN OPEN DISCUSSION** - *John Stewart, Michael Keyhl, Wolfgang Klippel, Steve Temme*

Sunday, May 9

- **WAVE FIELD SYNTHESIS: BASICS AND AUTHORIZING CONSIDERATIONS** - *Karlheinz Brandenburg, Frank Melchior, Renato Pellegrini, Guenther Theile, Diemer de Vries*
- **SUBJECTIVE MICROPHONE EVALUATIONS** - *Jürgen Wahl*
- **COMPARISON OF EXISTING ARCHIVING TOOLS** - *Klaus M. Heidrich, E. Dohlus, W. Grieger, Rainer A. Kellerhals, Karl W. Pieper, Niko Waesche/Yvonne Graf*
- **INTERFACING LOUDSPEAKER AND ROOM** - *Jan Abildgaard Pedersen, Andrew Goldberg, John Mourjopoulos, Todd S. Welti, Rhonda J. Wilson*

Monday, May 10

- **DIGITAL RADIO MONDIALE** - *Peter Senger, Martin Diz, Heinz-Peter Friedrich, Olaf Korte*
- **HIGH SPEED AUDIO NETWORKING** - *Peter Henkel, Markus Berg, Martin Pistor, Henrik Svantesson*
- **SOUND SYSTEMS FOR HEARING IMPAIRED PEOPLE** - *Birger Kollmeier, Birger Kollmeier, Inga Holube, Torsten Niederdränk, Stefan Launer*
- **TOURING SOUND SYSTEMS: DO CURRENT SPEAKER CONCEPTS MEET THE USER'S REQUIREMENTS: AN OPEN DISCUSSION** - *Uli Mall, Tony Andrews, Christian Heil, Evert Start*

Tuesday, May 11

- **FORENSIC AUDIO** - *Eddy B. Brixen, Durand Begault, Werner A. Deutsch, Wes Dooley*
- **THE ROLE OF MULTIPLE LOW-FREQUENCY SIGNALS IN THE PERCEPTION OF REPRODUCED SOUND** - *William Martens, Jonas Braasch, David Greisinger, Geoff Martin, Robin Miller, Gunther Theile, Todd Welti*
- **MEASURING & VERIFYING THE SPEECH INTELLIGIBILITY PERFORMANCE OF VOICE ALARM & EMERGENCY SOUND SYSTEMS** - *Peter Mapp, Wolfgang Ahnert, Thomas Steinbrecher, Peter Swarte*
- **ADVANCED RECORDING AND REPRODUCTION PARADIGMS COMPATIBLE WITH 5.1 MEDIA** - *Ralph Glasgal, Angelo Farina, Dave Malham, Robin Miller, Itai Neoran, Diemer de Vries*

TUTORIAL SEMINARS

Another successful innovation at the 114th AES Convention, which will be repeated at the 116th were the Tutorial Seminars, where the principles of audio are explained in subjects like digital audio, room acoustics, audio level measurements and setting up a 5.1 playback system. These seminars offer essential information about the most important topics of today's audio technology and are intended both as an introduction to, and a reminder of, these topics for people from all backgrounds in Pro-Audio.

Saturday, May 8

- **THE BASICS OF DIGITAL AUDIO: A SEMINAR WITH DEMONSTRATIONS** - *Stanley P. Lipshitz, John Vanderkooy*
- **ALL ABOUT COMPRESSORS** - *Ed Simeon, Ben Georgiades, Tobias Lehmann, Steve Parr, Günther Pauler*
- **BASICS OF SOUND REINFORCEMENT BY USING DIFFERENT LOUDSPEAKER TYPES** - *Wolfgang Ahnert*
- **PRACTICAL ASPECTS OF WIRELESS MICROPHONES** - *Peter Arasin*

Sunday, May 9

- **WORKING WITH MICROPHONES: A PRACTICAL REVIEW** - *Ron Streicher*
- **WEB TV – MULTIMEDIA THROUGH THE INTERNET** - *Eckhard Meyer*
- **LOUDSPEAKERS** - *Neil Harris, Juha Backman, Wolfgang Klippel, Neville Thiele, John Vanderkooy*
- **SURROUND SOUND DESIGN IN TV** - *Florian Camerer*

Monday, May 10

- **ALL ABOUT MICROPHONE PREAMPLIFIERS** - *John La Grou, Geoff Daking, George Massenburg, Crispin Taylor*
- **THE CENTER CHANNEL CHALLENGE** - *Jeff Levinson*
- **GROUNDING AND SHIELDING** - *Bill Witlock, Jim Brown, John Woodgate*
- **HOW TO SET UP 5.1 SURROUND** - *Andrew Goldberg or Christophe Anet*

Tuesday, May 11

- **ALL ABOUT AUDIO DATA REDUCTION** - *Karlheinz Brandenburg*
- **SPECTRAL PROCESSING - FUNDAMENTALS AND DIGITAL AUDIO EFFECTS** - *Xavier Jerra, Udo Zoelzer*
- **LISTENING TESTS IN PRACTICE** - *Nick Zacharov, Søren Bech, Durand Begault, William L. Martens, Sean Olive, Gilbert Soulodre, Thomas Sporer*



STUDENTS PROGRAM

With a very full program, the AES once again highlights the importance of education for students and newcomers alike. This year, the Convention committee has made the students' events and the rest of the conference program fit together so that it is easier to choose which events interest you. More information at www.aes.org/students

Saturday, May 8

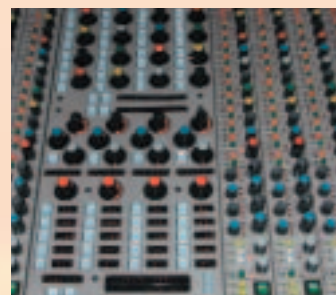
- **OPENING & STUDENT DELEGATE ASSEMBLY MEETING - 1**

Sunday, May 9

- **EDUCATION FAIR**
- **STUDENT POSTERS**
- **LIVE RECORDING OF ORGAN CONCERT**

Monday, May 10

- **RECORDING COMPETITION**
- **STUDENT PARTY**



Tuesday, May 11

- **EDUCATION FORUM**
- **STUDENT DELEGATE ASSEMBLY MEETING - 2**

TECHNICAL AND SOCIAL TOURS

Tours, always a popular part of an AES convention will include recording studios, broadcasting stations, concert halls and social tours around Berlin and to Meissen.

Friday, May 7

- **KONZERTHAUS BERLIN**

Saturday, May 8

- **PHILHARMONIE BERLIN**
- **POTSDAM - SANSSOUCI**

Sunday, May 9

- **TELDEX STUDIO**
- **INTERNATIONAL CONGRESS CENTER BERLIN**
- **STUDIO NALEPASTRASSE & STAGETEC COMPANY**

Monday, May 10

- **BMW MOTORCYCLE PLANT**
- **TRANSMITTER STATION NAUEN**
- **RADIO BERLIN BRANDENBURG**
- **BABELSBERG FILM SOUND TOUR**
- **INNER CITY TOUR AND BOAT TRIP**

Tuesday, May 11

- **TV TOWER BERLIN ALEXANDERPLATZ**

Wednesday, May 12

- **KAMMERMUSIKSAAL DER PHILHARMONIE**
- **DAY TRIP TO MEISSEN & DRESDEN**

HISTORICAL DISPLAY

This will be on the exhibition floor, presenting an exhibit of carefully-selected artifacts from the early days of audio technology and includes demonstrations. Focus this time is on the Babelsberg Film Studios, and their 92-year history in (sound) film making. An extensive series of lectures is held in the historical corner. They are not restricted to Babelsberg's history, but cover subjects as far apart as "History of Audio Effect Units" and "Acoustic Reconstruction of Buildings in the Ancient City of Olympia". A full listing can be found on the website at:

www.aes.org/events/116/historical

STANDARDS AND TECHNICAL COUNCIL

Meetings of the Standards and Technical Committees occur throughout and before the Convention. For more information see www.aes.org/standards/meetings and www.aes.org/technical

For all program details and latest information go to www.aes.org/events/116

EXHIBITORS AT THE AES 116th CONVENTION

A P.R.S.	GB	FOCAL-JM LAB	FR	PRIMEDIA BUSINESS	US
ACM	DE	FRAUNHOFER IIS	DE	PRIMERA	US
ACME / AUDIO PRO	BE	FRIEND-CHIP	DE	PRISM SOUND	GB
ACOUSTA	AT	FUNK TONSTUDIOTECHNIK	DE	PRO AUDIO VISIE	NL
ADAM AUDIO	DE	G ENELEC	FI	PRO AUDIO ASIA	GB
AEQ	ES	GHIEMMETTI	CH	PROAUDIO.DE	DE
AETA	FR	G.R.A.S. SOUND & VIBRATION	DK	PRO AUDIO GUIDE	DE
AGM DIGITAL	DE	GRUPPE 3	DE	PRODUCTION PARTNER	DE
A&G SOLUZIONI DIGITALI	IT	H AFLER	US	PRODYS	ES
AKG	AT	I DT	FR	PSI AUDIO	CH
AKZENT AUDIO	DE	IMAS PUBLISHING	GB	PSP	PL
AMBIENT RECORDING	DE	INMARSAT	GB	R ADIO LINK	GR
AMPTOWN-ASC	DE	INNOVASON	FR	REALISASON MAGAZINE	CH
AMS NEVE	GB	J +C	CH	REFERENCE LAB.	IT
APOGEE	US	JÜNGER AUDIO	DE	RESOLUTION	GB
ARBOR	NL	K ABELTRONIK	DE	RIEDEL	DE
ASL INTERCOM	NL	HOME STUDIO / KEYBOARDS	FR	ROHDE & SCHWARZ	DE
AUDIO DEVELOPMENTS	GB	KLEIN + HUMMEL	DE	ROSENDAHL	DE
AUDIO ENGINEERING	GB	KLIPPEL	DE	RTW COLOGNE	DE
AUDIO LIMITED	GB	KS DIGITAL	DE	RYCOTE	GB
AUDIONICS	GB	L AKE PEOPLE	DE	S ADIE	GB
AUDIO ONE	DE	LAWO	DE	SALZBRENNER STAGETEC	DE
AUDIO PRECISION	US	LE GUIDE RADIO	FR	SANKEN	JP
APT	GB	LINE UP	GB	SCHAKO	DE
AUDIOSCOPE 2K	IT	LINN PRODUCTS	GB	SCHOEPS	DE
AUDIO-SERVICE	DE	LIPINSKI	US	SD SYSTEMS	NL
AUDIO-TECHNICA	GB	LIVEN	US	SENNHEISER	DE
AVALON	US	LIVE SOUND	US	SHOW MASTER	RU
AVT	DE	LSK STORAGE	DE	SMART MEDIA SOLUTIONS	NL
B ELDEN WIRE & CABLE	NL	LUNDAHL TRANSFORMERS	SE	SOLID STATE LOGIC	GB
BMS	DE	M MAGIX	DE	SONIFEX	GB
BRAINSTORM	BE	MANDOZZI	CH	SONO MAGAZINE	FR
BRIDGECO	CH	MANLEY LABS	US	SONOVISION	FR
BRÜEL & KJAER	DK	MARIAN	DE	SONY	GB
BSS	GB	M-AUDIO	DE	SONY PRO-AUDIO LAB	GB
BURMESTER	DE	MAYAH COMMUNICATIONS	DE	SOUND AND VISION	DE
C ADAC	GB	MAYCOM	NL	SOUNDCRAFT	GB
CALREC AUDIO	GB	MB QUART	DE	SOUNDFIELD	GB
CANFORD AUDIO	GB	MECASTEP	FI	SOUND ON SOUND	GB
CB ELECTRONICS	GB	MEDIARTE	DE	STAGETEC	DE
CEDAR	GB	MEDIEN BULLETIN	DE	STUDER	CH
CHARLY BOHAIMID	DE	ME-GEITHAIN	DE	STUDIO MAGAZIN	DE
CIRRUS LOGIC	US	MERGING TECHNOLOGIES	CH	SYPHA	GB
CLEAR-COM	US	MT GEFELL	DE	T AMURA CORPORATION	JP
CLYDE	GB	MILLENNIA	US	T.C. ELECTRONIC	DK
CONCEPT-A	DE	MOGAMI	JP	TC HELICON	DK
D AG 2000	DK	MODULATION SCIENCES	US	TEAC / TASCAM	DE
GEOFFREY DAKING	US	MUSICAM USA	US	TSL	GB
DALET	FR	MUTEC	DE	TELOS	US
DANGEROUS MUSIC	US	MWA	DE	THAT CORPORATION	US
D.A.V.I.D.	DE	MYTEK	US	THX	US
DCS	GB	N AGRAVISION	CH	TOTAL PRODUCTION	GB
DELEC	DE	NETIA	FR	TRANSTEL	DE
DHD	DE	G. NEUMANN	DE	TRINNOV	FR
AVID TECHNOLOGY	GB	NEUTRIK	LI	TUBE-TECH	DK
DIGIGRAM	FR	NHT PRO	US	U LTRASONE	DE
DTS	GB	NOA AUDIO SOLUTIONS	AT	UNITED ENTERTAINMENT MEDIA	GB
DK-AUDIO	DK	NTI	LI	UNIVERSAL AUDIO	US
DOLBY	GB	NTP TECHNOLOGY	DK	VCS	DE
DPA	DK	O MNIA	US	VDT	DE
DRAWMER	GB	ORBAN / CRL	US	W SDG-E	CH
D&R	NL	OTARI	DE	WAVE DISTRIBUTION	US
DSPECIALISTS	DE	P ANPHONICS	FI	WEISS	CH
DYNAUDIO ACOUSTICS	DK	PEAK MAGAZINE / INSIGHT	NO	WISYCOM	IT
E ELA AUDIO	NL	ELECTRONICS	NO	WK-AUDIO	DE
EBH	DE	SUPER AUDIO CD	NL	Y AMAHA	DE
ELECTRO-HARMONIX	US	PMC	GB	YAMAHA CORP.	JP
EMM LABS	CA	Z ENON MEDIA	DE	YOU/COM	NL
EUPHONIX	GB	ZPLANE.DEVELOPMENT	DE		
EHR COMMUNICATIONS	AU				
F AR	BE				