



INFORMATION ON NEXT MEETING

## *History of surround sound*

*(Joint meeting with SGA/SSA)*

Saturday, 26<sup>th</sup> of March 2005, 16h00 at in the main auditorium of SDS Studio AG,  
194 Schermenweg, 3170 Ostermundigen (Bern)

**SPEAKER:** Tom Holman, TMH Corporation

**ORGANIZER:** Terry Nelson

**LANGUAGE:** English

### Biography:

Tomlinson Holman started his 'official' career at Advent Electronics (High End Hi-Fi) before taking up the post as Technical Director for Skywalker Ranch, the studio complex founded by George Lucas following the initial success of "Star Wars".

During his 15 years at Skywalker, Tom was involved in many developments for film sound and these naturally included the THX Program for cinemas and dubbing stages (and later, Home THX).

Since leaving Skywalker, Tom is the president of TMH Corporation and is actively pursuing the promotion of his 10.2 multichannel sound system.

Tom Holman is involved in various education programmes and is a professor at the University of Southern California. He is a Fellow of the AES, BKSTS and SMPTE as well as a member of the Acoustical Society of America and the IEEE.

He holds a Technical Achievements Award (or Technical Oscar) for his work and research on cinema sound systems and has written various books on film and television sound.

For further information, please visit the sites:

[www.tmhlabs.com](http://www.tmhlabs.com)

[www.theoscarsite.com/whoswho9/holman\\_t.htm](http://www.theoscarsite.com/whoswho9/holman_t.htm)

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### Schedule:

Doors open:	16H00
Start of presentation:	16H30
Refreshments – aperitif:	17H30
End:	19H30
Optional dinner:	20H00

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The Swiss AES wishes to thank SDS Studios AG for their kind collaboration in providing the auditorium.

The presentation will also be open for non-members of the AES and the SGA. To cover our expenses, we will charge a small entrance fee from non-members only (15.-- adults, 10.-- students and retired). Non-members subscribing to AES membership before the event will not have to pay. We look forward to welcoming you on the 26th of March!

## REPORT ON PREVIOUS MEETING

# *Surround Sound Downmixing*

Thursday, 20<sup>th</sup> of January 2005 at Studer Professional Audio GmbH, Regensdorf

**SPEAKER:** Helmut Wittek, IRT Munich

**REPORTER:** Attila Karamustafaoglu

20 people gathered on this Thursday afternoon in the Seminar room of Studer Professional Audio GmbH to welcome Helmut Wittek.

The first part was his speech about the downmixing problem and its solutions. To begin, he explained what a downmix is. There are several variants like a manual mix, and a variety of automatic variants like transaural, ITU, matrixed and spatially coded. He explained that there is a large motivation for automatic variants due to the additional cost every production would have if two mixes would have to be made, a two-channel stereo and a surround mix. Then he explained the various variants and how they work. For instance, the matrixed algorithms were explained, which turn the phase of the rear signals by 90 degrees and allow the decoding matrix to separate the signals better when an upmix is made. Interestingly, there is also a lot of activity in the development of spacial coding where the downmixed signal is encoded (e.g. into MP3) and the binaural cues are included in the ancillary data path. With this procedure, standard players play it back as from a standard downmix algorithm but special decoders can extract the binaural cues and apply them to the signal to recreate a surround signal again.

A further part was assigned to the issue of localization errors in downmixed signals when

the recording was made with surround microphones. It has been shown that existing surround microphones can differ heavily in their behaviour related to localization errors when downmixing is applied. This is actually Helmut Wittek's research field where he refined the well known OCT microphone setup towards the OCT-2 setup which is downmix compatible unlike many others. Most explanations during the speech were supplemented with nicely prepared listening examples which were strictly played back using a two-channel only loudspeaker setup.

After the main speech, the audience was split into two halves and had the opportunity to listen to some original surround signals and their downmix in the demonstration studio next door.

All demonstrated sound examples and a presentation on the topic as well as many tools for surround microphones can be downloaded at Helmut Wittek's and Dr. Günther Theile's very educative website:

<http://www.hauptmikrofon.de>

After the meeting the discussions of this interesting topic went on in the restaurant Feldschlösschen nearby. The Swiss AES Section wants to thank Helmut Wittek again for this very interesting evening.