



INFORMATION ON NEXT MEETING

Acoustic Substitutions in integrated Recording Techniques

*Zürcher Hochschule der Künste, Mediacampus, Baslerstrasse 30
8048 Zurich (Info see <http://www.zhdk.ch/>)*

Wednesday, 9th of January 2008, 18:00h-20:00h, Doors open 17:15h

SPEAKER: Omid Bürgin, São Paulo, Brazil, www.omidburgin.com

ORGANISER: Joël Godel

LANGUAGE: English

This lectures shows, how one can create excellent recordings, integrating all aspects involved in the recording process, such as musician, instrument, room acoustics, room placement, microphone techniques, signal flow and others. The common believe within the semi-professional recording industry is, that one has to acquire very expensive equipment and has to invest heavily in room acoustics, to do so. Relying too much on equipment and software can actually harm the overall technical and artistic outcome of the project. There is a clear tendency: the more one acquires knowledge of acoustics and production techniques, the more one strives in finding original, home-grown solutions. This lecture was elaborated after working for over a decade within the most professional studios in Los Angeles and thereafter in developing Brazil, where local more holistic solutions are required. Swiss born Recording Engineer, Music Producer and Acoustician operates a very successful Acoustic Firm, Recording Studio and Recording School in São Paulo Brazil. His teachings, projects and productions, reflect his many years of Studio Experience in Los Angeles, where he worked as a musical producer, sound engineer, composer and film music production supervisor. 10 years ago Omid C. Bürgin brought his extensive working experience as a music producer, sound engineer, composer, arranger, sound designer and musical

director for movie soundtracks, gained in L.A. studios to Brazil.

Author of several acoustic designs for medium and large-sized studios, auditoriums and churches, Omid has gained solid credibility in the Music Industry. Constantly updated on the latest market trends and researches, his projects embrace his international experience, while being creatively tailored to the Brazilian scenario. Omid has lectured acoustic, audio and music production courses for many world-class schools, such as UCLA Extension, Musician's Institute (MI - Hollywood), *Santa Marcelina* and *University of São Paulo (USP)*. Today, Omid divides his time between his own Acoustic Design Firm and Recording Studios and his international lectures and workshops at respected Institutions, such as the *New York University (NYU)*, *SAE Institute Harvestworks*, *Hamburg University*, *Humboldt University*, *Tischmeyer*, among others.

Organisation:

17:15h Doors open

17:30h Refreshment

18:00h Meeting

20:00h Q+A, discussion

20:15h Optional dinner

Please register as usual at:

www.swissaes.org /programme /sign up

REPORT ON PREVIOUS MEETING
HD suisse – A Technical Backstage View
Wednesday, 12th of December 2007

SPEAKERS: Thomas Saner, SRG SSR idee suisse, GD T+I
David Roth, tpc ag, Engineering
Hansueli Egli, SRG SSR idee suisse, Media Services TOP
Beat Schär, SRG SSR idee suisse, Media Services Distribution

REPORTER: Gabriel Leuzinger

The recent launch of “HD suisse”, the first high definition tv channel of swiss broadcast company SRG SSR, obviously found huge interest also in the swiss audio community: nearly 60 people gathered at the largest meeting room of SF/tpc in Zurich. For this special meeting, swiss AES section welcomed 12 members of the swiss VDT section.

Despite known for its follower strategy, SRG SSR announced a new and very unique channel in HD just last January this year and went officially on-air on 3rd of December. With the 1280x720/50p format chosen and with four audio channels in Dolby Digital, the new channel called **HD suisse** takes a real leadership in Europe.

Thomas Saner, Head of Technical Department at GD T+I of SRG SSR in Bern, first explained the technical and commercial requirements for the channel: the four SRG SSR TV stations have to deliver the content for the shared channel, which serves a 24h program to all 4 language regions. Consequently 4 audio channels in Dolby Digital (2.0, 5.0, or 5.1) have resulted as a technical requirement. As one of the first stations in Europe, SRG SSR has chosen the 1280x720/50p format, which is also a very strong EBU recommendation for HDTV broadcasters today. Video was specified to be MPEG-4 (H.264) encoded at a bitrate of max 13 Mbit/s and the whole channel has to be multiplexed with the other SD programs into current transponder 85 of SRG SSR for DVB-S transmission.

HD suisse technical project manager David Roth informed about the project and its organization, which included continuity, contribution and distribution as well as upgrades of the “Proteus” program planning tool, the master control room and the current contribution network. He went deeper into the new workflow of HD suisse and the practical implementation of the disk based playout. Due to the 24 discrete audio channels it was decided

to store the audio tracks as Dolby E streams on the playout server, ready for transfer to distribution. Since cabling had been provided ready for HD, the recently completed master control room (see newsletter 101) of tpc needed just minor HD upgrades, especially on digital frame synchronizers, cross bars and monitoring. Due to different formats on the production side, signal paths of the master control room must be able to deal with mixed SD and HD formats (1080i25 and 720p50).

Hans Ulrich Egli started with an overview of the services and the different networks, which are operated by the contribution department Technical Operations (MSC TOP). The backbone rings permanently interconnect all main TV and radio stations of SRG SSR and allow add/drop of signals at all major event sites of Switzerland like sport stadiums, theaters etc. Due to lower delay and higher quality, most video and audio services on the backbone are transmitted as transparent signals (uncompressed). For HD suisse a codec with slight compression has been evaluated to transport the 1.5 Gbit/s HD signal with a delay of only 8ms over the transparent 270 Mbit/s SD transmission path. For remote sites without permanent backbone connection, mobile uplink equipment is used for contribution. Due to high cost of satellite links, bitrates are much lower at around 40 Mbit/s, using MPEG-2 for HD.

Beat Schaer explained the HD suisse distribution signal path starting from the master control room through HD MPEG-4 encoding to multiplexing with SD programs and DVB-S satellite uplinks for transmission to end users. Comprehensive tests had been executed to evaluate the currently best encoder system available for a videobitrate of 13 Mbit/s. The four Dolby E streams are deembedded, decoded and fed to four Dolby Digital encoders before these AC-3 outputs are passthrough added to the video service inside of the MPEG-4 encoder. Conditional access trigger signal

together with SI-data for EPG and its trigger signal is sent as XML files to the multiplexing system. Extensive monitoring, integration into the Network Management System (NMS) and a sophisticated ASI compliance recording system, which allows storage of the entire DVB transport stream up to 4 months, completes the distribution system.

After the tour through HD suisse continuity room and distribution control centre, David Roth was talking about the experiences gained during the project. As expected, the final picture quality was found very high, which matches with early feedback of enthusiastic customers. Usage of very high quality cameras is essential. On the audio side, especially Dolby audio was found quite challenging: Dolby E can be destroyed everywhere in the chain and is very demanding in keeping lipsync. Other issues are Dolby E guardband and the fact, that Dolby E

uses 40 ms frames where a 50p frame is only 20 ms, which leads to 50% probability of destroyed Dolby E frames at switching or editing points. And finally, the very good Dolby Digital feature of dialogue normalization results in 11 dB lower loudness in comparison with MPEG/PCM sound. This level difference needs to be compensated in the settop box (Dolby Bulletin 11) to get sound of equal loudness if changing between Dolby and non-Dolby programs.

After these very interesting presentations, about 15 members concluded the evening in a restaurant in Zurich-Oerlikon. AES swiss section would like to thank all speakers and thanks SF for the very appreciated hospitality. The complete presentation can be downloaded as pdf-file from <http://www.swissaes.org/> -> programme -> download material.

David Roth received the Dipl.-Ing. degree (MSEE) in 1982 from Swiss Federal Institute of Technology (ETH) Zurich, Switzerland and continued studies in business administration at Kaderschule St. Gallen. He was with Studer ReVox at R&D, as project manager responsible for CD players. Since 1998 David Roth is with tpc as head of engineering department and additionally since 2006 he leads the technical project of HD suisse.

Hans Ulrich Egli is with SF and SRG SSR since 1985 and held several leader and project manager positions for CNCT and contribution networks. Since 2001 he is responsible for the backbone video/audio of contribution and distribution. Actually he is project manager for the contribution part of HD suisse. Hans Ulrich Egli holds a degree of eidg. dipl. Informatiker Business Solutions.

Beat Schaer received the Dipl.-Ing. degree (MSEE) in 2003 from Swiss Federal Institute of Technology (ETH) Zurich, Switzerland and the M.B.E. in business and engineering in general management from the Steinbeis University Berlin, Germany, in cooperation with the European School of Business (ESB), Germany, the Indiana University, Terre Haute, and the University of Kitakyushu, Japan, in 2004. He is with SRG SSR since 2004 and as project manager he was responsible for the DVB-S satellite uplink and playout project SATRA. Actually he is project manager for the distribution part of HD suisse.

