AES SWISS SECTION NEWSLETTER

115th. Issue

INFORMATION ON NEXT MEETING

N/ACIP – Audio Contribution over IP

Location: Hotel Ador, Laupenstrasse 15, 3001 Bern

Thursday, 12nd of June 2008, 1800h – 1930h

SPEAKER: Mathias Coinchon, Senior Engineer, EBU
Secretary of EBU N/ACIP and N/VCIP groups

ORGANIZER: Attila Karamustafaoglu **LANGUAGE:** English

In broadcast, the use of ISDN lines for contributing audio from remote locations to a studio has been the predominant method in the industrial countries worldwide in the 90's and the early years of this millennium. But with the rapid growth of the internet, many services are being migrated to it. In this context, ISDN is being shut down in several major countries soon. This means that audio contribution is also making the transition to either managed Ethernet networks or the public internet.

Mathias Coinchon from the EBU and Lars Jonsson are together with major partners driving an initiative to standardize the transport of encoded and linear audio data over IP networks under the name N/ACIP. This is to avoid incompatibilities requiring that sender and receiver equipment from the same manufacturer is used. A standard will allow that reporters and radio and television studios can freely interchange audio data with little negotiation about device types and protocols used at both ends. With the utilization of standardized protocols such as SIP, RTP and UDP the way is paved for a successful ascent of N/ACIP.

We are happy to welcome Mathias Coinchon who will give an introduction to the standard and some technical insights into it.

Biography of Mathias Coinchon

Mathias Coinchon was born in 1975 and graduated in 2000 in communication systems engineering from the Swiss Institute of Technology in Lausanne (EPFL), Switzerland, and the Eurecom Institute in Sophia-Antipolis (France). He developed his diploma thesis at BBC R&D in Kingswood Warren, studying and developing propagation analysis solutions for Digital Radio Mondiale (DRM) field trials. He then joined as technical project manager, a startup company called Wavecall, which is active in the development of a physical propagation prediction tool for the mobile telecommunication industry. After Wavecall, Mr Coinchon spent four years at RSR public swiss radio, first with responsibility for contribution and then in charge of a group dealing with distribution, contribution and IT networks. During this period, he was also actively involved in the technical study group of the Swiss broadcasting corporation (SRG-SSR idée suisse) for the re-launch of DAB digital radio in Switzerland. Since 2006 Mathias Coinchon has been a senior engineer in the EBU Technical Department. He is currently secretary of the N/ACIP and N/VCIP groups dealing with audio and video contribution over IP. He is also involved in digital radio matters and is vice-chairman of the WorldDMB technical committee. His other areas of work include audio, distribution, open-source software, IP-based TV studios and traffic information. In his spare time, he is involved in helping a community radio station.

Please subscribe as usual at www.swissaes.org / programme

REPORT ON PREVIOUS MEETING

Loudspeaker phase distortion

Thursday, 3rd of April 2008, 17h30 at Studio des Nouveaux Monstres,
Av. du Silo 9, 1020 Renens (VD)

SPEAKERS: Alain Roux and Marc Chablais - Relec SA
Samuel Harsch - Harsch Acoustic
Veronique Adam - AudioNetworks SA (Goldmund)

REPORTER: Veronique Adam

26 people gathered on this Thursday afternoon in the "studio des Nouveaux Monstres" in Renens (near Lausanne), in order to attend a meeting about loudspeaker phase distortions.

The three scheduled presentations explained how loudspeaker phase distortions may be significantly heard and put forward different solutions to correct them. After the three presentations, the audience had the opportunity to attend some phase distortion listening tests.

The first part was devoted to psychoacoustics and analogue phase corrections. Alain Roux and Marc Chablais began their speech with some theory explaining how phase distortion may be calculated. Then, they summarized the works of J. Blauert & P. Laws about the threshold of perceptibility of group delays. They ended their presentation with a sum up of the past ten years work about the perceptibility of PSI Audio users, giving some technical reminder and explanations on analogue treatments procedure.

The second part was assigned to a digital solution of group delay distortion correction arising from a two-way loudspeaker system crossover. Veronique Adam explained a correction method based on the inversion of a IIR all-pass filter having a group delay response corresponding to that of the system crossover to be corrected. The method was validated under *Matlab* and implemented in DSP. This method was presented at the AES convention in Vienna (2007).

The third part showed a method for implementing quasi-linear phase loudspeaker using standard IIR crossover. Samuel Harsch talked about different well-known ways of loudspeaker crossover phase correction (FIR, all-pass filters,...) and explained that these methods show the disadvantage of knowing precisely the impulse response of the loudspeaker. To get round this problem, he presented his own method, providing an easy way to create a quasi-linear phase loudspeaker only by using a standard IIR crossover.

After the meeting, the discussions about this interesting topic went on in a friendly Italian restaurant nearby.

The Swiss AES wishes to thank again warmly the "Studio des Nouveaux Monstres" and Antoine Petroff for their kind collaboration, as well as the speakers Alain Roux, Marc Chablais and Samuel Harsch.