<u>Minutes of the AES Technical Committee on Coding of Audio Signals</u>

7th Meeting at the 109th AES Convention, Los Angeles, 22 Sept 2000

Meeting called to order 5:45 PM by J. Johnston, TC Co-Chair with some difficulty after the end of S. Lipshitz's controversial talk and the resulting enthusiastic debates.

The agenda was approved as listed in the annex (see below). An attendance list was circulated, also attached as an annex. Those wishing to join the reflector should mail to hrr@iis.fhg.de after the convention.

The main activity for this convention is the Workshop on Coding Artifacts. There was a quick summary of the workshop and participants, as documented in the convention program.

A workshop on MPEG-7 Audio, "Just what IS MPEG –7 Anyhow"? is proposed for the Amsterdam convention. J. Herre will start the effort and attempt to get a workshop chair soon.

The Paper Chair for the upcoming NY 111th Convention (Jim Johnston) pointed out emphatically that tutorial, basic, and technical session proposals are strongly encouraged. The matter was deferred to the mail reflector after the LA convention.

The following people are responsible for sections of the CD ROM audio clips and accompanying text:

Pre-echo	done	Markus Erne
double-speech / temporal voice smearing	missing	Thomas Boltze
BMLD artifacts	done	Jim Johnston
Loss of stereo image	done	Jürgen Herre
Birdies / hi-frequency limitation	done	Antonio Pena
Aliasing	done	Markus Erne
Music material over speech codec	done	Heiko Purnhagen

It was noted that Thomas Boltze was not responding to repeated attempts of contacting him regarding his commitment for supplying the double-speech / temporal voice smearing material. It was decided to drop him from the list of contributors. Instead, Gerald Schuller was kind enough to take on his part. Heiko Purnhagen was considering to contribute artifacts related to parametric coding of audio.

David Ranada suggested including tandeming artifacts on the CD ROM. He also pointed out that the terms we use for describing distortions will become the common usage, and suggested to be careful in both consistency and technical meaning of the terms that we choose.

The report on trends in audio was updated, a copy is attached.

Other business: There was an early call for paper session proposals expressed for the 111th AES convention

The meeting was closed at 6:25 PM.

Respectfully, Jim Johnston, J. Herre, Co-Chairs.

Agenda:

1) Approval of Agenda

2) Opening Remarks of Chairmen

4) Review of membership list, invitations and nominations.

5) Review of activities for current convention

- Richard C. Heyser Memorial Lecture

- Workshop on Coding Artifacts

- Other activities

6) Review of / proposals for activities at upcoming conventions, conferences, workshops etc.

- 110th AES convention Amsterdam

- Proposal for MPEG-7 audio tutorial/overview

7) Status and further progression of TC CD ROM project

8) Update of "Report on Trends in Audio"

9) Any Other Business

10) Next Meeting

12) Closing of the Meeting

List of Attendees:
- James D. Johnston
- Jürgen Herre
- Karlheinz Brandenburg
- Werner Oomen
- Markus Erne
- Louis Fielder
- Heiko Purnhagen
- Ye Wang
- David Ranada
- Thumpudi Raveen
- Gerald Schuller
- Sanae Hotani
- Bernd Edler
- Frank Baumgarte
- Pete Schreiner

Trends in Audio Coding:

Technical Committee on Coding of Audio Signals

Report on Trends in Audio / Coding issues:

Audio coding has moved into widespread use, and professional applications, and is starting to reach the consumer market very rapidly. This has a variety of implications:

- The consumer can choose various options:
    - Quality of delivery
    - Means of delivery
- There is a demand for consumer tools that handle the compressed audio (players, encoders, juke box, conversion / editing utilities).
- A major topic of discussion is how use low-rate Internet connections for piracy-free e-commerce (see MPEG-21 standardization). This is part of the problem of how to use the Internet, and how to move current business models into the Internet, or come up with new business models for those older models that the Internet obsoletes. Some demands of this new business form are:
    - Watermarking of audio, including compressed audio
    - Encryption and scrambling of compressed audio
    - Copyright control, 1-play, buy-per-copy, free-to-distribute, all need to be supported w/o allowing piracy by the AVERAGE consumer.
    - Identification of signal sources, distribution methods, "who bought it first"
- The trend to integration of compressed audio, video, film, and graphics, and integration of the demands of the various media (see MPEG-4 concepts).
- Simple synthetic audio is moving from the music maker into the general market and is being usedas a transmission method (see MPEG-4 Structured Audio for an emerging technology).

„Solid-state" audio is proliferating, and lots of transcoding may be necessary in the future. Some methods for coding control, metadata, and transcoding control are already being developed, and more will become necessary.

In the near future we will see audio services over both mobile wireless networks and satellite radio, enabled by audio compression technology.

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