

Summary: "Creative Sound Solutions" – Meeting #03

At the **meeting on August 10, 2021**, 14:00 – 15:10 more detailed discussions and planning of webinar events took place, and ideas for project themes were aired as well. A summary of the meeting is included below:

Proposals for Webinars

#	Subject	Background
1	'Sound in virtual/augmented reality' (VR/AR)	<p>A webinar is planned for September 30, 2021 and is basically lined up with speakers:</p> <ol style="list-style-type: none"> 1. Stefania 2. Cheol & Finnur 3. Yann Copier (Generation of 3D sound using "game engines", <p>All have confirmed. We need a short abstract from each, 2-3 lines, from each, and a short Bio. The two first presentations will be approx. 30 minutes each, the third presentation by Yann may last long. The total duration should be decided and put into the program. Reasonable correct timing is essential.</p>
2	Dubbing challenges	<p>Some research on the issue of loudness calibration indicate that in classic music, loudness will be approx. at the standard level whereas in "rock music" & "Pop" is typically increased by approx. 17 dB on your headphone.</p> <p>The challenge is editing with more documentary type of programs, e.g. interviews including ambient noise, voice over, etc. And what about the many people receiving audio through streaming to their smart phone, how to ensure calibrated leveling? An issue is also, when you do interviews, how do you break out and ensure re-calibration, since speech intelligibility may be lost in the process? Adding to the challenges is when in noisy environments we are using headphones with noise cancellation. How is that influencing the process?</p> <p>Proposed speakers:</p> <ul style="list-style-type: none"> • Sean Olive, senior fellow, Harman International, LA, USA. • Henry John Michaelsen, GiLyd ApS <p>Followed by a panel discussion including, e.g.</p> <ul style="list-style-type: none"> • The two speakers • Morten Brandstrup, TV2 • Eddy Bøgh Brixen • Allan Holmberg <p>What we want to get out of the webinar is introduce a shifted focus from "dubbing" to instead doing "things-right-first time".</p> <p>Dubbing is up to 80% trying to resolve problems that should have been avoided from the start. So instead, it may e.g. be better to spend more money on renting better equipment rather than spending money on exhaustive dubbing work.</p>

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2	Dubbing challenges (continued from previous page)	<p>Furthermore, the industry is suffering from a shortage of key personnel in this area. If we can contribute to improve efficiency by reducing dubbing, users are likely to gain from this in terms of productivity.</p> <p>In a sense, the webinar could be seen as a start of a change in a business/political approach. In that context, we need to also engage the press, i.e. magazines, etc.</p> <p>Furthermore, as an idea the webinar could be followed up by an R&D project under 'Danish Sound Cluster' aiming at proving a change in approach to ensure productivity. Key users may even be willing to contribute financially to such a project.</p>
3	5G microphones and new recording techniques (present wireless spectrum may be lost to other services)	<p>EU project 5G-RECORDS (https://www.5g-records.eu).</p> <p>Speakers confirmed for September 22nd, 2021. Speakers:</p> <ul style="list-style-type: none"> • Dr. Maria Dolores (Lola) Pérez Guirao, Jan Duerre and Norbert Werner (Sennheiser) • Jonas Næsby (Sennheiser, DK) • Michael Pihl (TV2) <p>Moderator:</p> <ul style="list-style-type: none"> • Morten Brandstrup, TV 2 <p>The first speakers will be located in the Nokia Lab and we may have some demonstration of the use of 5G microphones.</p> <p>A challenge to the Telco industry is that the current spectrum (Sub700) used for e.g. wireless microphones, television signals, communications, etc. may be crippled at the upcoming international radio frequency conference in 2023. Some of the bandwidth is likely to be assigned for 5G applications. It is great for 5G microphones, but a blow to many current usages.</p> <p>The webinar will have two focus themes:</p> <ul style="list-style-type: none"> • The new microphone technology (5G) • The political issue of wireless bandwidth usage <p>Especially the second focus area, bandwidth assignment, may prove a huge challenge, particularly in Denmark, where bandwidth assignment sometimes deviates in strategy to that of other nations. It could lead to differences in bandwidth availability, when crossing borders, and hence become a technological challenge.</p> <p>The webinar is likely to have elements of '<i>breaking news</i>' and <i>political themes</i> so the press, people related to bandwidth assignment and others should also be invited. We need assistance in identifying people that should be invited.</p>
4	AI-based solutions	<p>A follow-up webinar on AI (first one was on June 16, with Prof. Lars Kai Hansen, DTU Compute, speaking on "AI and audio") is postponed, since two AI based webinars are in the pipe from WG 3, 'Future Sound Solutions'.</p> <p>A possible AI webinar within the scope of our WG could later focus on 'AI and signal processing' and involve e.g. following speakers:</p> <ul style="list-style-type: none"> • Cumhur Erkut, AAU (differential DSP from Google) • Efen Fernandez Grandes & Cheol-Ho Jeong, DTU (Cheol: virtual reality production)

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5	Across boundary solutions, i.e. involve artistic perspectives in audio technical solutions.	<p>Still in early planning phase. Our focus is on technical issues, less on artistic ones.</p> <p>Possible contributors:</p> <ul style="list-style-type: none"> • Jenny Gräf Sheppard, Leader of the Ambisonics Research Lab at the Laboratory for Sound, Kunstakademiet. • Stephen Mcevoy, Teaching Assistant, Kunstakademiet • Yann Coppier. • Stine Lyngedall (contact Finn Agerkvist, DTU) • Nicolas Becker, Academy Award for Best Sound (“Sound of Metal”) <p>If available, we may also consider using Nicolas Becker as speaker at SoundDay 2021.</p> <p>An example of successful merging of technology and artistic focus was cited: Microphone designed by Rørbæk Madsen, B&O.</p>
6	Intelligent microphones	<p>Consensus that “Intelligent microphones” and “Sensors of the future” (proposed by WG 3 ‘Future Sound Solutions’) are two separate topics. ‘Intelligent microphones’ are about signal processing, establishing metadata, ensuring such data in the stream, etc. whereas ‘sensors of the future’ basically focus on hardware technology.</p> <p>Dilemma: Cameras for video recording, even in smart phones, have a lot of support, making videorecording easy and relatively ‘professional’ for even the novice user. However, with microphones there are no similar support. E.g., in using two adjacent wireless microphones there is no support for interaction, and what about auto leveling? How can we change this dilemma?</p> <p>Speakers:</p> <ul style="list-style-type: none"> • Stefan Heise, Jabra • Eddy Bøgh Brixen <p>Potential contributors:</p> <ul style="list-style-type: none"> • Invisio • Shure Microphone • Sennheiser • Surveillance industries, e.g. Wave Science Technology (Keith Mackelweave?) <p>The topic is not yet mature.</p>
7	Multichannel headphones	<p>An area of high interest and focus of several developments (create good 3D sound perception, achieve “center” impression I sound, etc. (</p> <p>Potential speakers:</p> <ul style="list-style-type: none"> • Pauli, Eton Audio GmbH • Tom Ammermann, New Audio technology • Sean Olive, senior fellow, Harman International, LA, USA. <p>Topic is still not mature</p> <p>More speakers may be necessary.</p>

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8	Optimal sound environments for "large room offices"	<p>Current sound design of "big office workspace" aims at a workspace with good acoustical damping, low background noise, low reverberation time, no ventilation noise, etc. As a result, however, basically an in-humane silent work environment is obtained, where no one dares even to drop a clip on the table (too noisy ☹).</p> <p>New trend is now to bring back noise to the office to mask some of the inconveniences. It may even be necessary to introduce the use of headsets to overcome the challenge, although the use of headsets in this context is far from desirable. However, it proves necessary, if e.g. more people simultaneously are active in the room on separate video meetings, and similar activities.</p> <p>Possible demonstrator facilities that could be presented:</p> <ul style="list-style-type: none"> • Novo + Meyer Sound • Sonic College atrium at their new campus (Meyer Sound) <p>Topic not yet mature, needs practical implementation data. Possible results for use in webinar: End 2021:</p>

Proposals for collaborative projects

#	Subject	Background
A	Intelligent microphones	Development of intelligent microphones, 5G, Metadata, *fingerprint' identification, etc. See also webinar comments in webinar theme #3
B	Training courses	<p>Training courses focusing on optimal recording 'in the field', at an advanced level but also at a more general level to reduce subsequent editing significantly.</p> <p>Needs to be focused, e.g. for broadcast, including how the production works in broadcast.</p>
C	Headsets emulating multichannel sound. Alternatively better editing options in headsets (e.g. for TV sound)	<p>Headset with true "room" impression. Today's headsets allow for use of 7.1 sound, but is in reality poor in emulating e.g. "front" sound. "Rear" sound appears OK, but headset basically still only offer "mono" in the ear. Necessary to obtain better headset technology, if multichannel sound in headset should have a future. Essential to obtain an impression of "Dolby ATMOS in a big room".</p> <p>Multichannel sound has been around for 30 years, but users are basically only exposed to stereo in headsets.</p> <p>A huge potential could exist, if "true room" perception emerges, hence avoiding the need for huge rooms with ATMOS conditions.</p> <p>In TV broadcast, the need is more towards a stable "center-sound picture". Currently the challenges are that basically all TV sounds are edited in huge rooms, where may be 40 people are sitting side-by-side editing, and hence are forced to using headsets during editing. However, during the editing, they need to arrive at a good sound as experienced by a viewer on a traditional TV set.</p> <p>The next generation of young people will only see TV on an iPad or an iPhone and obtain sound through earpieces or simple headsets. Believes that the need for true "room sound" thus may diminish significantly.</p> <p>The real challenge is that you no longer obtain the sound from huge "B&O speakers" pointing towards the viewer/listener, when watching TV. Instead sound comes from small loudspeakers at the back of the TV set pointing away from the viewer/listener. Hence, there is a need for a calibration unit that could simulate and adapt the sound in a room, that is far from ideal in a sound context and where the TV set is placed incorrectly from a sound perspective.</p>
D	Optimal sound environments for "large room offices"	<p>Current sound designs of "big offices" aims at a workspace with good acoustical damping, low background noise, low reverberation time, no ventilation noise, etc. As a result, basically an in-humane environment is obtained, where no one dares just to drop a clip on the table (too noisy ☺).</p> <p>Possible pre-project based on the challenges outlined under webinar theme #8</p>

Other ideas and needs

We need contact details of Academy Award winner Mikkel E.G. Nielsen.

Other issues:

- We need people with more artistic background in the Working Group.
 - Gamers?
 - Music producers?
- Physical events?
 - AAU, DTU, "Lydens hus"
 - Set-up of "Erfa groups"
 - Presenting new technology
 - Show case for startup companies
 - Networking in general
- Joint events with others?

Next meeting

Tuesday October 5, 14:00 to 15:00

Appendix: Participants in the meeting

Stefania Serafin	AAU-CPH	Professor
Rune Palving	Den Danske Filmskole	Head of "tone meister" education
Cheol-Ho Jeong	DTU Elektro, Elektroteknologi	Assistant professor
Morten Brandstrup	TV2 Danmark A/S	Head of News Technology
Lars Tirsbæk	Sonic College, UCSYD	Underviser
Eddy Bøgh Brixen	ebb-consult	Konsulent, ejer
Birger Schneider	CHAMAJ Consult ApS	Director/owner
Torben Vilsgaard	Danish Sound Cluster	CEO
Shelley Uprichard	Danish Sound Cluster	Project Manager

One person was absent.