

Summary: "Creative Sound Solutions" – Meeting #18

The working Group meeting #18 took place Thursday, August 22, 2024, 14:00 – 15:00

Agenda:

1. Webinars & Physical events during 2024:
 - a. Follow-up on proposals and ideas from meeting # 17 including additional comments and proposals.
 - b. Proposals for possible speakers
 - c. New themes?
2. Collaborative projects, update of proposals, indication of possible project consortia.
3. Information from Danish Sound Cluster
4. A.O.B.

Ad 1 Proposals for Webinars & In-Person Events

#	Subject	Background
12b	Using game audio engine in other applications than gaming	<p>Event completed on April 9, 2024</p> <p>https://danishsoundcluster.dk/audio-development-using-gaming-engines/</p>
18	Use of sound by artists	<p>Eddy has worked on creating an event, where artists are talking about how they use sound, what tools they use for creation of sound, and what challenges they face in doing so.</p> <p>Potential speakers:</p> <ul style="list-style-type: none"> • Jonas Olesen, author of the book "Pionerer og outsiders" (on Danish electronic music) • Eliza Bozek, Independent artist, e.g. using voice cloning in her sound scapes. • Nanna-Karina Schleimann, uses her own voice in acoustic set designs/sound set designs. She also uses binaural technology for her performances. <p>Timing: 2024, H1.</p> <p>Challenge:</p> <p>Normally, everyone contributes to webinars and the like. without remuneration. When we involve artists, the situation is a bit more complex, as many artists do not have a large income, nor an organization that finances them.</p> <p>Danish Sound Cluster does not currently have the funds to be able to finance the participation of artists. In Eddy's presentation, at least one artist wants to be remunerated for his participation.</p> <p>We in the cluster might get some opportunities to support this kind of thing if we obtain support for the next 4-year period. Here, it is set up that DSC can also support SME companies, of course also individuals.</p> <p>We are parking the item until we have more information about what our future options for support will be. A clarification is expected to be in place at the beginning of 2025.</p>

#	Subject	Background
19	'Audio description', also referred to as 'visual description' or 'video description' ("synstolkning" in Danish)	<p>Background:</p> <p>Audio description is a means to inform individuals who are blind or who have poor vision about visual content essential for comprehension. A narrator (audio descriptor, AD) handles key visual elements of live theatre, television, movies, museums, and other media to enhance the enjoyment primarily by blind and visually impaired consumers. AD describes body language, expressions, and movements, making a program clear through sound.</p> <p>The topic area is shifting from 'niche topic' to 'mainstream' (supported by emerging US and EU legislation? - although not yet enforced).</p> <p>Many modern types of equipment, e.g. coffee machines employ soft touch buttons rather than classic mechanical switches. Difficult in use for blind people. Audio Descriptors could be used to overcome challenges in such applications.</p> <p>EU Directive imposes requirements related to audio descriptions (Directive (EU) 2019/882, European accessibility act ?). It applies broadly to public service channels, video network municipalities, etc., but is not yet fully implemented in national laws (to be enforced by 2025?)</p> <p>Potential speakers, listed at a previous meeting:</p> <ul style="list-style-type: none"> • Stein Erik Skotkjerra, personally blind, has years of experience in how use of websites can be improved for blind people. He can provide insight on audio support. Has his own consultancy company in Aalborg and Copenhagen. • Gavin Kearney. York University, R&D in visual descriptions (Rune) • Brian reports the audio description is an emerging challenge to many in the broadcasting communities (Brian will look for possible candidates). • Jenny Lay-Flurrie - Microsoft Chief Accessibility Officer ? <p>Broadcasters seem to be focusing on the area, but the situation is complex and there is uncertainty as to whether there are legal consequences if you do not comply with the requirement for visual interpretation.</p> <p>Technically, it is complex how to even include visual interpretation in existing broadcasts. It is not speech-to-text, but a big planning and editing job to make the text for visual interpretation. It is not expected that AI can be used immediately, as you must have a complete overview of the story to create the text. In principle, the visual impression must be transferred to the audio world.</p> <p>We imagine that the topic is so big and so broad that it can form the basis for several events with different aims. A start could, for example, be that we get a few of the people who are already working on the subject to introduce what they do and use visual material that shows the workflow. Then more people understand what we are up against. Nick will try to make suggestions as to who it could be.</p> <p>Another idea could be to hold a physical event, e.g. at one of the big media houses, such as DR or TV2, these do not themselves need to participate with opinion but must primarily add premises to make it more attractive to interested parties. Here, for example, be a panel debate.</p> <p>The topic could be expanded to include "accessibility" in general. In principle, it is exciting that we are talking about creating an audio event for people who hear well - but who see poorly. Normally, our target group is more people who are hard of hearing, but here it is the other way around. And we have not actually intervened with this group at all today</p>

#	Subject	Background
		<p>Cont'd from previous page</p> <p>A suggestion was put forward that a person like John Heilbrunn, a blind sound technician, who has worked for the Danish Society for the Blind, could be interesting to include.</p> <p>Birger also mentioned that a company like "Site improve" Havneholmen 33, 6 sal, 1561 København V, tel.: 33 36 93 50 has at least previously worked with visual interpretation/accessibility of websites.</p> <p>It was also suggested to include media companies such as Disney, Warner and others, as they are already considered to be working intensively with the challenge.</p> <p>We will discuss the presentation further at the next meeting.</p>
20	Inclusivity, a way to bridge diverse abilities.	<p>A webinar aiming at using sound for inclusion of people with different handicaps.</p> <p>Possible speaker:</p> <ul style="list-style-type: none"> • Doga Cavdir, Ph.D at AAU-CPH, <p>We need to identify an event where this can fit in. May be related to pos. 19 or "Women in sound engineering".</p> <p>The topic may no longer be relevant, since Doga is not associated with AAU-CPH today. We may consider to drop the topic.</p>

#	Subject	Background
21	"Immersive Audio"	<p>Background:</p> <p>At present, many buzz words appear related to immersive audio – and many misunderstandings exist.</p> <p>Request for ATMOS content, but many studies only support “old 5.1 techniques”, etc.</p> <p>Two important dilemmas in relation to immersive audio:</p> <ul style="list-style-type: none"> • How can we get creators of music and film to think “immersive” in their planning and development of sound strategies? • How are ATMOS and similar immersive audio solutions received at the end-user? <p>More formats support immersive audio. Dolby’s ATMOS dominates, but other formats like SPACE MAPS, MPEG 4 (Frauenhofer) and others are also in use. Transfers between formats can be obtained using ADM.</p> <p>Potential sources:</p> <ul style="list-style-type: none"> • Sonic College. At recent “Sonic Days”, immersive audio was addressed. Sonic College is deeply involved in the area and arranges 8 concerts per year related to this. Sonic College is willing to participate (Lars Tirsbæk) • VEGA offers ATMOS support. Sonic College cooperates with Vega on the topic and one of the Sonic concerts is given at VEGA. (Jeppe & Lars). • RADAR in Aarhus is another live event theater supporting 3D immersive audio. Cooperates with SONIC College. • SONIC College cooperates with “Jazz i Trekanten”, http://jazzitrekanten.dk/forside/ also on 3D immersive sound. • DR has equipped its studios 2, 3 and 4 with ATMOS. Currently most focus on classical music, also in relation to DR Concert Hall (Joakim will identify potential speakers at DR). • BBC R&D efforts in relation to ATMOS (Morten to provide contact details) • Sharin Foo, Rytmisk Musikkonservatorium & “Raveonettes” lead singer (Stine) <p>VEGA has experience in the use of 3D in live events. Contact Kevin at Vega (he has been involved in production and pre-production of 3D immersive sound events during 2023). He has worked with artists like Peder Albrechtsen, Troels Abrams, and others in the focus area. See https://www.vega.dk/om-vega/immersiv-lyd-i-ideal-bar/</p> <p>It is proposed to focus on two events, one on live music using Immersive sound the other on e.g. Broadcast: Classical music recording in 3D immersive sound.</p> <p>See also proposals: 21a “Immersive sound in Live events” and 21b “Immersive audio in Broadcast”</p> <p>Comments from previous discussion</p> <p>What are people doing in relation to immersive audio?</p> <ul style="list-style-type: none"> • People claim they use ATMOS, but what are they really doing in relation to ATMOS apart from employing an ATMOS encoder? • What is the future of immersive sound? • Lack of rules, only ATMOS. If sound passes through the ATMOS encoder, it is ATMOS? <p>Cont'd next page</p>

	<p>Cont'd next page</p>	<p>In past use of surround sound, e.g. 5.1 we at least had rules on how to organize, evaluate sound scapes, etc.</p> <p>Where are we now?</p> <p>Many papers on immersive audio appear from Academia:</p> <ul style="list-style-type: none"> • Many academia set-ups often have very fine environments for immersive audio. • What is the situation in production? • What facilities do people have once they leave universities and production schools? <p>Debate on 22 August 2024</p> <p>Focus on immersive audio for concerts and other live events. Today, the number of people who produce immersive audio is limited compared to many other audio formats. People who today use headsets and Apple-produced material seem to prefer music upmixed in immersive format and downmixed in binaural format. It seems to be a trend that what you request for audio in your ears is "immersive", even though what you get is only 2 channels after it has been packed down in some manner.</p> <p>Some producers see it as both a task and a problem. Several have reservations because they have always been used to working in stereo. It seems to be primarily the "image world", which is interested in immersive audio production and is pushing for it.</p> <p>There are indications that e.g. Apple and Spotify are starting to demand from the artists that audio materials must be delivered in an immersive format. But what do they get? Not everything is produced in a truly immersive format, but you package something that can meet the requirements. Morten Lindberg from Norway mixes everything in the format in which the audio material is to be delivered, because he considers that the automatic algorithms are not good enough for the quality he wants.</p> <p>Morten Lindberg could be a good bet for a participant in the event. He is a 'purist' and represents one part of the field. His strategy is to place microphones and everything else correctly so that there is only need for moderate extensive post-editing work. When 'record' is pressed, the basic work is done, apart from details such as the number of channels.</p> <p>At AES in Le Mans in January, there was a focus on the challenge of how to arrange one's speaker arrays and use de-correlation filters, i.e. Adam Hill from UK. There are techniques and technologies that can be used to create something at "live events".</p> <p>A schism is emerging between tool developers and artists. In reality, there are not many who have heard immersive sound in the natural format, while many have heard it in headphones, with the limitations of 2 channels.</p> <p>Dolby Atmos takes up a lot of focus, but new formats from Google and Samsung also come into play. One challenge is that you can create sound in 10 speakers, but not necessarily create a "space of sound" between 10 speakers.</p> <p>We must distinguish between 'immersive' and 'envelopment'. Strictly speaking, immersive simply means that sound is created from many channels, while envelopment is about being enveloped in sound. Many do not understand the difference. It doesn't take much to have sound created for many speakers, but</p>
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		<p>when does the listener experience feeling like they have been placed in a "room of sound", feeling enveloped in sound?</p> <p>A strategy for us could be that we do more events on the topic of immersive sound. Initially we focus on defining what immersive and envelopment of sound means. In reality, we probably should focus initially on a workshop on the subject, including definitions. We could arrange it as an 'on-line event', but where e.g. Jeppe manages the event and where we break into groups. DSC will be able to undertake such an on-line event.</p> <p>It could be combined with involving a few experts, e.g. an expert like Morten Lindberg, who looks at both 'source' and 'technique' in a convincing way. His approach is very artistic, high-quality sound. In Sweden, they have tried to follow up precisely on Morten Lindberg's approach to sound. Conversely, cinemas have to a large extent Dolby Atmos because Dolby has managed to establish itself in the market. In the 'live' industry, other solutions are tried, and what about theater performances? Genelec, for example, tries with other solutions.</p> <p>One approach could focus on the chain "creator to recipient" format. Many, who are responsible for the sound, sit with their headphones and create the final sound. But how can you succeed with good immersive sound under those conditions? In VEGA, they try to tackle the problem in a more envelopment manner. They offer the musicians alternative conditions. VEGA should be included, and Lars Tirsbæk might be able to help here.</p> <p>In a theater context, approaches are included using arrays which are moved around. This means that post-production can be reduced to a minimum, as most of the sound is already ready during the actual recording.</p> <p>People at home-studio level, procuring productions for e.g. Spotify where they must deliver something based on immersive often resort to automatic solutions as it at least meets the requirements. Alternatively, we also need to focus on the artistic approach and high sound quality.</p> <p>In the next meeting, we will seek to make the subject more concrete, e.g. a first event based on a workshop. Here it would be good to also include Sonic College in the conversation.</p> <p>The complexity of large events, e.g. football matches, gradually become so large that one is forced to use algorithms to control the recording. It makes sense in such more automatic situations, while when it comes to the artistic perspective, approaches should be different. Automatic solutions may not suffice here. Many want to have an influence and not just leave everything to automatic solutions.</p>
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#	Subject	Background
21.a	“Immersive sound in Live events”	<p>Here we could get contributions from:</p> <ol style="list-style-type: none"> 1. VEGA: Practical experience in live events using 3D immersive audio in concert (Kevin: production challenges, artist and their willingness and ability to contribute) 2. “Jazz i Trekanten”. This organization cooperates with Sonic College and performs four of its annual 'live' concerts in Sonic College's 3D immersive room. Here, collaboration is achieved between amateurs, students from Sonic College and professional musicians, and there is a lot of experimentation with form and content. Contact: Jens Munch, tel.: 2667 6713, info@jazzitrekanten.dk <p>Contact with the target group can be supported with help from Sonic College, VEGA (Kevin), Music conservatories, Aarhus Sound Association, RADAR, etc.</p> <p>General themes of focus:</p> <ul style="list-style-type: none"> • How Is 3D Immersive sound useful in live events? • What er the technical challenges? • What are the limitations? <p>Sonic College is willing to support in this event, Lars.</p> <p>Not discussed in the meeting of August 22, 2024</p>
21.b	“Immersive sound in Broadcast”	<p>How is 3D immersive sound utilized in broadcast today?</p> <ul style="list-style-type: none"> • DR is currently active in recording classical concerts in its concert hall in ATMOS. • TV2 seems to be running similar experiments. <p>Not discussed in the meeting of August 22, 2024</p>
24	Follow up event on Sound in museums (follow up to event to “Use of sound in museums” transmitted on November 22, 2023)	<p>Given the success of the first event we aim for a follow-up event. Some of the elements in a follow-up event could be:</p> <ol style="list-style-type: none"> 1. Danish Use-cases, e.g. as originally proposed by Birgitte Folmann and Lars Tirsbæk, Sonic College. 2. New content from the international project collaboration on the theme between Sonic College and other international Universities (UK and others) Birgitte Folman. Sonic College also plans a conference on the topic in late 2024. 3. Industry Challenge: Why are no Danish Design bureaus involved in sound design related to audio guides, etc. Basically all work of this nature in Danish museums tends to be handled by Tinker Imagineers in the Netherlands, www.tinker.nl. Tinker does an excellent job, but why do Danish design bureaus shy away? Possibly an issue for a panel debate. <p>Actions: Jeppe and Lars try to propose an event, possibly also call a meeting with Birgitte Folmann.</p> <p>Status?</p> <p>Not discussed in the meeting of August 22, 2024</p>

#	Subject	Background
25	Sustainable "Live event" Industry	<p>Sustainable "Live event" Industry</p> <p>How can we create sustainable concerts? Today, artists tour around the world with a large faith of musicians, speakers, processing equipment and the like. It's basically not sustainable.</p> <p>Can we do things in a different way?</p> <p>'Taylor Swift' has e.g. chosen to play her concerts in cinemas where good sound equipment is already available. Can it replace the big concert tours, and how will the audience experience the lack of atmosphere and excitement in "Live Events"?</p> <p>At the recent SONIC Days conference, Ralf Zuleeg, Director of Soundscape, D&B Audiotechnik, pointed out that we are doing things wrong by shipping large amounts of equipment and many people around the world for "Live-Events". It is not sustainable. Should we declare the "Live Event" with touring musicians dead?</p> <p>Jochen Sommers, Abrahamsen, stated that you don't need to transport the speakers around. You can use the local sound systems, but the processors must be brought around for "Live events", he thought.</p> <p>When you can do AI based concerts with ABBA, Elvis and others, can't today's artists also perform at AI concerts without everything having to be moved around?</p> <p>Topic for further discussion. Perhaps a "Debate event"?</p> <p>Not discussed in the meeting of August 22, 2024</p>
26	AI in Music revisited	<p>Follow-up to the webinar <i>on "AI created music and the threat to artistically generated music"</i> could revolve around two elements:</p> <p>Workshop - physical event</p> <p>Here the participants can have the opportunity to try out new methods, talk to others about challenges and be inspired. Contact is important. Could possibly be carried out as a "Teams" event, but a physical event is preferable.</p> <p>Stefania Serafin would like to make premises available for a physical event.</p> <p>Cumhur Erkut, has recently held such an event at the music conservatory. Reported to have been successful. We could involve Cumhuhr Erkut in such a physical event.</p> <p>Follow-up with a focus on new AI tools</p> <p>Some in the design industry have already started to become redundant due to the use of AI. Lars reported on a couple of his former students who have been replaced by AI solutions.</p> <p>Adobe has recently come up with a new "drag & drop" tool that makes using AI simple, even for novice users. Possible to achieve "studio quality" sound, even if the sound is recorded on-site with poor quality. Can meet some of the challenges we have previously talked about in connection with dubbing.</p> <p>The release of "John Lennon's new song number" on a Beatles release is another example. In Hollywood, Peter Jackson and Disney have been working for some time on being able to extract sound from mono recordings and from there create many new "mono channels". Still a bit of a secret.</p> <p>And what about descriptive AI tools such as Chat-GBT etc. similar tools for describing desired music and from this input into music generation tools.</p> <p>Yet another issue is "Virtual Concerts" with deceased and living artists are another area.</p> <p>Not discussed in the meeting of August 22, 2024</p>

Next meeting

Wednesday October 23rd, 2024, 14:00 to 15:00

Appendix 1: Participants in the meeting

Eddy Bøgh Brixen	EBB-Consult	Consult/owner
Morten Brandstrup	TV2 Danmark A/S	Head of News technology
Nick Dunkerley	Hindenburg Systems ApS	Creative Director
Stefania Serafin	AAU-CPH	Professor
Birger Schneider	CHAMAJ Consult ApS	Director/owner
Jeppe Lindegaard	Danish Sound Cluster	Project manager

Appendix 2: Working Group Achievements: Events, proposed and developed by the working group

#	Title	Comments	Event type	Date
1	Creating sound for VR applications		Webinar	September 30, 2021
1	'Sound in virtual/augmented reality' (VR/AR)	Workshop at AAU-CPH	Workshop	February 24 2022
2	Dubbing challenges		Webinar	March 29, 2021
3	5G technology in Proaudio		Webinar	September 2, 2021
4	Audio AI – State of the art and perspectives in spoken document understanding		Webinar	June 16, 2021
5b	Bringing creativity into your engineering work		Webinar	April 26, 2022
6	Intelligent microphones		Webinar	February 23, 2022
7	Multichannel headphones		Webinar	January 11, 2022
10a	NGA ADM Immersive delivery		Webinar	February 8, 2022
10b	ADM Technology		Webinar	February 15, 2022
12.a	Audio in Games		Webinar	October 27, 2022
8	Acoustics in Open Plan Offices		In-person Event	March 23, 2023
17	Haptics and Bone Conduction		Webinar	April 13, 2023
5a	Creative Use of Immersive Rooms		Webinar	June 13, 2023
11b	"Podcasting – Technology and Potential		Webinar	September 06, 2023
22	AI in Music & Sound		Webinar	October 26, 2023
9	"Use of sound in museums"		Webinar	November 22, 2023
12b	"Using game audio engine in other applications than gaming"		Webinar	April 9, 2024

Appendix 3: List of Themes currently on hold

Addressed or proposed in previous meetings but for the time being put on the list of potential topics until the topics are better matured - or the need better identified.

#	Subject	Background	Proposers
11a	<p>"Women for sound engineering"</p> <p>Electronic sound & music, focus on females</p>	<p>Background for theme:</p> <p>General challenge that we have a poor gender balance in audio areas, i.e. too few females.</p> <p>Events will be inclusive/open to everyone but have an all-female focus/i.e. those who identify as female program. Include female students.</p> <p>See details in meeting summary of Meeting #09, 2022-08-30</p>	<p>Stefania Serafin, Shelley Livingstone Stine Marie Hasse J Sofia Dahl (AAU) Lars Tirsbæk Eddy Bøgh Brixen</p>
13	<p>Dubbing challenges II</p>	<p>Efficient tools are available and the market for such tools develops fast in current years, supporting improvement of even poor-quality audio raw material.</p> <p>However, the entire scene of production is changing rapidly, and a webinar could focus on:</p> <ul style="list-style-type: none"> • The professional market of tools. (entire work process is supported using new tools such as Adobe Premier, Avid Media Composer, Black Magic editing, etc.) • A more general tool market for less skilled users lacking deep audio engineering background. • Trends in support tools: Getting inputs from major suppliers of tools on what the trends are in tool technology and what can we expect for the coming years from the suppliers. 	<p>Lars Nørretranders Nick Dunkerley, Morten Brandstrup</p>
14	<p>Ethics in audio production</p>	<p>Ethics is becoming more and more important – also in relation to audio generation (risk of "deep fake" exists). Several cases of restricted sound exist. In general, if sound in relation to documentation is compromised through reconstruction, "hell breaks loose".</p> <p>Involve documentarists in radio/TV production.</p> <p>In a metaverse world, we might imagine a fully immersive, hyper-realistic virtual world that caters to all our senses.</p> <p>General agreement that challenges related to ethics in sound will become a more and more vital issue. Various types of AI support will allow creation of virtual sound, for example creation of voices of deceased people or other types of virtual sound creating. Ethical challenges follow naturally in the wake of many technological developments, and the use of AI in sound is no exception in this regard. It is crucial to start the debate early in this development, so that the area does not develop into a Wild West area.</p> <p>For example, the Danish association for Speakers and Readers, www.Danishvoices.dk are concerned with the situation on voice cloning.</p> <p>Possible contributors:</p> <ul style="list-style-type: none"> • Anders Kjærulff, Danish journalist, radio host, debater and lecturer, • Brit Ross Winthereik, DTU, professor in the Division for Responsible Innovation & Design, • Danish Voices, www.danishvoices.dk, • ETHOS lab, ITU, ethos@itu.dk • Morten Holm, tonemeister. • Kyogu Lee, Professor, Principal Investigator, 	<p>Lars Nørretranders Lars Tirsbæk Nick Dunkerley Morten Brandstrup Rune Palving</p>