

Summary: "Creative Sound Solutions" – Meeting #21

The working Group meeting #21 took place Thursday, March 6, 2021, 14:00 – 15:00

Agenda:

1. Webinars & Physical events during 2025:
 - a. Follow-up on proposals and ideas from meeting # 20 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
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, since 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 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>Postponed until we have clearer information on possible funding of artists in DSC events. Clarification is envisaged in mid-2025.</p>

#	Subject	Background
19	<p>'Audio description', also referred to as 'visual description' or 'video description' ("synstolkning" in Danish)</p> <p>New Theme</p>	<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 own consultancy company in Aalborg and Copenhagen. • Gavin Kearney. York University, R&D in visual descriptions (Rune) • Brian reports the audio descriptions 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>Debate 6 March 2025</p> <p>Agreement that we try to implement the event on "Visual Interpretation" (Danish. "Synstolkning") as a physical event, and that we hope that it can be implemented at DR (Denmark Radio).</p> <p>Program:</p> <ul style="list-style-type: none"> • Introduction to Visual Interpretation • A few presentations from 'Voice over artists' (actors with experience in the field. • Demonstration of tools for use in 'visual interpretation' • Panel discussion <p>If possible, we could follow up with a guided tour of some DR facilities.</p>

		<ul style="list-style-type: none"> • Expected number of participants: 30-50 • Language of the event: Danish • Date of event: September 2025 <p>Actions:</p> <ul style="list-style-type: none"> • Contact details for people with experience in 'Voice-over' (Nick to Jeppe) • Contact details for the 'Indaler-forbundet' (Nick to Jeppe) • Inquiry to DR about premises (Joachim) • Possible guided tour (Joachim) • Provision of tools for 'Voice-over' (Nick/Hindenburg Systems) • Detailed planning (Jeppe)
20	Inclusivity, a way to bridge diverse abilities.	<p>A webinar aiming at using sound for the 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>Currently put on hold.</p>

#	Subject	Background
21	<p>“Immersive Audio”</p> <p>New Theme (general)</p> <p>Cont’d next page</p>	<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 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.</p> <p>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>In past use of surround sound, e.g. 5.1 we at least had rules on how to organize, evaluate sound scapes, etc.</p>

#	Subject	Background
21	<p>"Immersive Audio"</p> <p>Cont'd from previous page</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 actually 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 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 ht 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</p>

		<p>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 largely have 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> <p>Debate on 23 October 2024</p> <p>At the recent AES conference in New York, there was clear support from leading sound experts for, among others grammy award winners such as George Messenbourg and Bob Katz, that the strategy pursued by Norwegian sound engineer and music producer Morten Lindberg in making channel-based recording of 'envelopment'-based concerts is the right way forward. Morten Lindberg starts from understanding the music and its balance. He places his microphone arrays correctly in relation to the music to be recorded, and he avoids post-mixing music as much as possible - rather make a new recording.</p> <p>There is also a growing understanding that full bandwidth at low frequencies is important, as phase differences in relation to direct sound and a room's indirect sound have an influence on how people experience the 'envelopment' of the music. Many distance themselves from the use of ATMOS, as the technology is considered to 'colour' the music too much.</p> <p>Interesting reasons for participating in a webinar include:</p> <ul style="list-style-type: none"> • Morten Lindberg, Norwegian music producer • Thomas Lund, Genelec, Aarhus • Richard King, McGill University, Canada • Mikkel Nymand, music technician at DR, stands among other things. for mixing the 'Thursday concerts'. <p>We have received an inquiry from Rytmsk Musikkonservatorium, Morten Büchert, to take part in 3 events that the conservatory is planning in March thru May, 2025. The focus is on 'concerts', 'studio recordings' and 'gaming'. DSC will</p>
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		<p>meet and coordinate with Rytmask Musikkonservatorium. Eddy assists Jeppe in the first dialogue meeting.</p> <p>After the meeting with Rytmask Musikkonservatorium, to take place in week 46, we assess again how much we have to do ourselves in the area and how much we have to do together with the conservatory.</p> <p>Debate December 11, 2024</p> <p>DSC already had the first webinars on 'immersive audio' a few years ago. The webinars were quite general. Since then, a lot has happened in the area. There seems to be a need to go into more depth with sub-areas.</p> <p>The DSC secretariat is mostly in favor of not making new webinars in the area, as the new terms from the Danish Business Agency have less focus on knowledge dissemination. Instead, it would make sense to hold events together with the Rhythmic Conservatory. Here is an invitation, see previous meeting debate, to 3 physical events on immersive audio with a focus on:</p> <ul style="list-style-type: none"> • Studio production • Live events • Broadcast <p>Denmark is currently not strong in the domain of immersive audio. A lot is happening abroad and there seem to be good opportunities to get access to information from abroad. Physical events together with the Rhythmic Conservatory will have good opportunities to show the actual use of immersive audio. This will require that participants show up physically, which will probably lead to many outside the country not having easy access to information. At the same time, it places demands on equipment and premises.</p> <p>Eddy, Lars and Joakim have indicated that they are willing to participate in meetings with the Rhythmic Conservatory on the subject. It is anticipated that a disadvantage may be that it is more difficult to involve someone like Morten Lindberg, one of the foremost experts, when it comes to the use of immersive audio in relation to classical music. He is currently busy. However, participation in a webinar may be a possibility, although participation in a physical event in Denmark is probably less likely.</p> <p>It was emphasized that the record industry is an important partner to involve, as the record companies have the finances to spread the use of immersive audio. Unfortunately, the record industry is currently mostly concerned with continuing to use stereo mixing, so it may be a challenge to get that part of the industry involved, even for physical meetings.</p> <p>If DSC itself is to organize an event on immersive audio within, for example, broadcast, it would be appropriate to organize it on locations at a broadcast venue, for example, DR. More people may show up, if there is also the opportunity to have a tour to the DR facilities afterwards.</p> <p>Joakim will check on the possibility of hosting an event at DR.</p> <p>Debate 6 March 2025</p> <p>There has been no contact with the 'Rhythmic Conservatory' regarding their invitation to joint events in the area since the last meeting. Jeppe assesses that the topic is still interesting for a joint action with the 'Rhythmic Music Conservatory' and will make contact as soon as possible (to Morten Büchert)..</p> <p>Four people from the working group have expressed a desire to be part of the meeting with the 'Rhythmic Conservatory', namely: Eddy, Joachim, Lars and Rune.</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 are the technical challenges? • What are the limitations? <p>The subject awaits what we arrive at in Area No. 21. Several interesting things are happening at the moment. Among other things, there were sound scapes in connection with 'Østre Gasværk's' construction of:</p> <p>"The Wall"</p> <p>"Songs from Copenhagen"</p> <p>"The Wall" performance was by far the best.</p> <p>Debate 6 March 2025</p> <p>At this time, it is uncertain whether this topic can stand on its own or should be part of what we are talking about with the “Rhythmic Music Conservatory” (see point 21).</p> <p>Lars stated that he had just received information that ‘Vega and ‘Godset’ in Kolding had received funding from the ‘Art Foundation’ to continue working with new formats in the area. However, he was unsure how extensive the work was planned.</p> <ul style="list-style-type: none"> • Action: Lars will try to obtain more details about the support in the area and pass it on to the working group at the next meeting. <p>Lars also stated that the ITU had just released a new standard on ADM under ITU the day before. It is an update to a previous standard. This is about defining a standard that can ensure that results in the areas are utilized across the board:</p> <ul style="list-style-type: none"> • Broadcast • Live Music • Music Production. • Action: Lars follows up on the new standard and reports at the next meeting what impact he sees it will have on the affected areas.

#	Subject	Background
21.b	"Immersive sound in Broadcast" New Theme	<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>Immersive sound is still in its infancy in DR.</p> <p>DR's symphony orchestra has contracts with 'Deutsche Grammophon' and there are increasing demands for inclusion in ATMOS and others. So, there is a focus on this development. Still only claims to a limited extent -, but increasing.</p> <p>At DR, the concert hall does not yet really support ATMOS recording, but studios 2, 3 and 4 do, at least scaled ATMOS. However, DR is still stepping on the 'kids' shoes' in the new development in terms of requirements, where it makes sense to use the new techniques, etc.</p> <p>See above debate (point 21.a) on March 6 2025</p>
23	Sound and Learning	<p>The use of sound to support teaching in primary school is an untapped potential. From time to time, primary schools try new methods to support teaching, but the use of sound seems to be a rather overlooked area, and how to exploit the potential of that effect seems to lack.</p> <p>The primary school domain is not part of DSC's focus, but everyone who works professionally with sound for the primary school is, be it research environments and companies that seek to develop methods for the use of sound in e.g. elementary school. There is a clear parallel to the domain of hearing aids. Private users of hearing aids are not within DSC's focus, but companies that develop and produce hearing aids largely are. So, with the use of sound in primary school.</p> <p>Many children and young people have learning difficulties because they may suffer from dyslexia, concentration when reading, etc. Some students are then "left on the platform" during the school course because they are unable to understand a text in writing. It also causes problems in other subjects, e.g. mathematics, because today's tasks are based on a lot of text, which the students must understand before they can solve the actual task. The result is that some pupils never get a proper primary school education, simply because they are unable to read a text. They may receive a diagnosis, but it would have been better if they had instead had alternative methods that could support learning. It doesn't have to be that way.</p> <p>For several students, it turns out that when they are unable to acquire material through reading, using alternative solutions, e.g. sound support, they achieve success if the wording of the task, text, etc. be muted. There are good examples of students who cannot read properly into primary school courses, turning out to be able to cope with teaching well when they have sound support for learning. Most children have e.g. a mobile phone that can be used to record sound with. Can such approaches come in play; can we cultivate that use? The technique of using just the mobile phone for sound recording is used in several other contexts quite professionally. Sound can really do something when you become aware of the potential.</p> <p>The area is a very interesting area, which DSC should support the opportunities in and the spread of, perhaps support smaller projects, but above all ensure that there is sufficient political and professional focus on the potential of utilizing sound to support learning. For example, it would be interesting if students who have challenges with the written part could hand in assignments, including exam assignments in oral form. It certainly requires changes to regulations, i.e. the inclusion of a political dimension.</p>

		<p>Today, up to 25% of young people have a diagnosis in one area or another. If one could reduce this with another form of learning, a lot would be gained.</p> <p>Nick participates in a discussion forum on the subject, where the focus is on children with reading/writing difficulties. Sometimes, the challenge is the teachers rather than the children. Ideally, it would be great if you could make the primary school course better through the use of sound. Nick will try to identify people who could participate in a webinar event.</p> <p>It is essential to create visibility for the area's opportunities. This is where DSC has a mission. A first step could be a webinar in the area, preferably with an associated panel discussion.</p> <p>Debate December 11, 2024</p> <p>The aim of the topic is not to make initiatives for schoolchildren, but to focus on the part of the industry that makes professional solutions to support learning supported by sound - also for example, use in schools, and in other places. One place to turn to if we want to understand the issue better about the challenges in the 'Folkeskolen' could be to involve Katrine from the "Struer" project.</p> <p>The debate came to be about the fact that we in the world that we ourselves perceive as the professional also have challenges. There was a report about a larger organization that wanted to do E-learning around the topic of "sound" in its own organization. The organization has professional sound people, but they wanted to use people from outside so as not to compromise their own employees if the E-learning project did not lead to success.</p> <p>They focused on using AI to, among other things, create a workflow. AI tools could support development in connection with workflow for 'sound & learning', or as we saw it instead, 'learning sound'. Much has been lost, for example in connection with the widespread use of podcasts, where the sound is often poor, and where those who make podcasts have not gained sufficient knowledge of how to make good sound.</p> <p>At the same time, it is the experience of several members of the working group that there is plenty of information on the subject on YouTube, but a substantial part of the existing information is poor and often misleading. Unfortunately, what happens is that bad information is passed on, and so often becomes even worse because the basis on which it is built is erroneously from the state.</p> <p>How can we ensure that better and more relevant information is made available to, among others, people who want to make podcasts?</p> <p>Debate 6 March 2025</p> <p>The topic is difficult to get a handle on. Kathrine in Struer (Jeppe has contact details) is trying to coordinate activities in the area, and we agree to contact her to get clearer knowledge about what is happening in the area before we decide whether there is a role for DSC to do a webinar or a physical event in the area. Since the target group is diffuse, it is estimated that a webinar could be most interesting.</p> <p>Target group: Our target group is not the needs of schools directly, but the professional service industry, which makes solutions for learning in schools.</p> <p>Nick stated that the Ministry of Education currently has plans to use audio in connection with documenting the final exam, but the details are not clear to us at the moment.</p> <ul style="list-style-type: none"> • Action: Jeppe to contact Kathrine in Struer before the next meeting, so that we can be better prepared on the topic.
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#	Subject	Background
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>Debate December 11, 2024</p> <p>Sonic College is still interested in contributing to a new event about sound in museums. They also have an ongoing project in the area that could be interesting to report on. Lars is no longer involved himself, so a new venture must depend on a conversation between Jeppe, DSC, and Birgitte Folman at Sonic College.</p> <p>At the same time, we must be aware of new things happening in the area. Among other things, Struer Museum, together with the National Museum and a third institution, has formed a 'Knowledge Center' within sonic cultural heritage. Jeppe continues to talk to Birgitte Folman at Sonic College</p> <p>Debate 6 March 2025</p> <p>Jeppe has arranged a meeting in Copenhagen with Birgitte Folman from Sonic College in Kolding in connection with follow-up on 'sound in museums'. In the same topic, it is also planned to involve the new center in Struer, SOKU, the national knowledge center for sonic cultural heritage (https://www.sonicheritage.dk/da/om/).</p> <p>We are waiting until the planned meeting with Birgitte Folmann has been held.</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 at "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>Debate 6 March 2025</p> <p>The sustainability issue has also reached the audio industry, and many subareas are being looked at, for example in connection with concerts. Smaller speakers (but louder sound), sustainability in connection with concerts in general, for example 'Roskilde Festival' (Lars Lindgren).</p> <p>At the recent 'Melodi Grand prix' for both children and adults, there was a focus on many things based on a sustainability principle, for example: Power consumption (remember to turn off equipment that is not in use), reduced lighting consumption, consumption of food and drinks, and everything.</p> <p>In a possible event, we should involve people who are involved in festivals, as there is a great focus on sustainability in connection with holding concerts.</p> <p>But it also has a knock-on effect in the way that there is an increasing focus on doing 'remote' production, so that, for example, you don't need to have a sound engineer out in the field during recording, but that person can sit at home and control the sound processing.</p> <p>Unfortunately, one then runs into the fact that 'remote' control of audio equipment is still a fairly underdeveloped area, which in itself could form the basis for a webinar. Not least DR and TV 2 experience that it is an area that is still only in its early stages of development, and where many improvements are needed. This therefore gives rise to at least two new topics in addition to 'sustainability':</p> <ul style="list-style-type: none"> • Remote' control and synchronization of audio (see new topic 27) • Use of wireless spectrum for audio recordings (see new topic 28).

#	Subject	Background
26	AI in Music revisited	<p>Follow-up to the webinar on "AI created music and the threat to artistically generated music" 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-GPT 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>Debate December 11, 2024</p> <p>Generative sound based on AI affects the understanding of music, and high-tech companies are investing heavily in the area, as it offers great opportunities for increased earnings.</p> <p>We should focus not only on the advantages, but also on the disadvantages. For example, do we destroy the original database by creating new music based on the original database and then let the new music be included with the original material. Because then we dilute the original database by creating new music, which in reality is based on the same original database.</p> <p>In the daily press, there is usually only a focus on the advantages, but we need a more balanced basis. What real advantages does AI provide, and what negative effects does AI entail. Digital solutions are always praised as good, but we see in schools today that they are moving back a bit towards more analog solutions, because digital solutions do not necessarily give good results. Are we starting to see a similar development in the AI area?</p> <p>But topics in the area must be more focused, because the subject is actually very broad. For example, we focus on:</p> <ul style="list-style-type: none"> • Music products • Music design in radio/TV • Or other <p>Some people are concerned that the new opportunity with AI may challenge the education of sound designers. But as has been seen previously, the elimination of technology from previous times has often created new areas of focus, so the</p>

		<p>total amount of tasks is increasing, just with a new focus. Will the same happen with the new opportunities with AI?</p> <p>So, in our focus, we must decide what should be included and what should not be included. For example, should signal processing and challenges with this be included in the debate, should the legal aspect be included or not, etc.</p> <p>We will bring up the topic again at the next meeting, as there is agreement that the topic is important, but also that more focus should be placed on which subtopics we debate, as the topic is very broad.</p>
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#	Subject	Background
27	Remote' control and synchronization of audio New Theme	<p>When recording TV in the field, sound is in many ways a stepchild. Everything is synchronized to the video image, and there is no great challenge in synchronizing. But when it comes to sound, there are great challenges, and if you have to synchronize sound recording from two physically separate places during a TV program, it must today largely be done manually. Therefore, there is a need to gain more control over processes, discuss problems and influence, for example, the ITU to initiate initiatives in the area.</p> <p>A webinar with, for example, a panel discussion could be a way forward, and there is an expectation that there will be a large number of potential participants, in Denmark alone.</p>
28	Use of wireless spectrum for audio recordings New Theme	<p>Wireless microphones are gaining increasing acceptance for recording at major events, such as concerts, sporting events (not least in large indoor events), etc. A few Danish companies and a larger German company have good solutions for wireless microphones. But there are also challenges, as other electronic equipment, such as 5G equipment with strong power radiation, can interfere with wireless microphones. There is a lack of better control over how to use wireless equipment.</p> <p>Until now, microphones have been legally limited to 200 kHz, but is now open for the use of wireless frequencies, which is why the challenge is only now arising.</p> <p>At the same time, there is increasing pressure on the use of the frequency spectrum, as the military, among others, wants to expand their use of the frequency spectrum. So, there are many new challenges that could provide a good reason for a webinar in the area.</p> <p>Action: Jeppe, together with Morten and Joachim, is trying to form a subgroup to get a handle on the challenges.</p>

Next meeting

Tuesday 13 May, 2025, 14:00 to 15:00

Appendix 1: Participants in the meeting

Joakim Moe Jensen	DR	Sound Consult, DR Equipment & Studio OB Production
Lars Tirsbæk	Sonic College	
Morten Brandstrup	TV2 Danmark A/S	Head of News technology
Nick Dunkerley	Hindenburg Systems ApS	Creative Director
Rune Palving	The Danish Film School	Head of the ‘sound meister’ education
Birger Schneider	CHAMAJ Consult ApS	Director/owner
Jeppe Lindegaard	Danish Sound Cluster	Project manager

Appendix 2: List of potential Themes

Addressed or proposed in previous meetings. For the time being placed on the list of potential topics until topics have matured - or been better identified.

#	Subject	Background
11a	“Women in sound engineering” Electronic sound & music	Background for theme: General challenge that we have a poor gender balance in audio areas, i.e. too few females. Events will be inclusive/open to everyone but aim at a better balance in gender.
13	Dubbing challenges II	Efficient tools are available and the market for such tools develops fast in current years, supporting improvement of even poor-quality audio raw material. However, the entire scene of production is changing rapidly, and a webinar could focus on: <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 input from major suppliers of tools on what the trends are in tool technology and what we can expect for the coming years from the suppliers.
14	Ethics in audio production	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”. Involve documentarists in radio/TV production. In a metaverse world, we might imagine a fully immersive, hyper-realistic virtual world that caters to all our senses. 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. For example, the Danish association for Speakers and Readers, www.Danishvoices.dk are concerned with the situation on voice cloning. Possible contributors: <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. • ETHOS lab, ITU. • Morten Holm, tonemeister. • Kyogu Lee, Professor, Principal Investigator,

Appendix 3: 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