

## **Minutes of the AES Audio for Games Technical Committee – New Realities Group**

Online meeting: 13th August 2pm (GMT)

The full meeting can be viewed online here:

<https://www.youtube.com/watch?v=n7PDGrT1s8E>

### **In attendance:**

Gavin Kearney (GK), University of York (Chair)

Stephan Schutze (SS),

Robert Rice, Microsoft (RR)

Garry Taylor (GT), Sony Interactive

### **1. Welcome and introductions**

GK welcomed everyone and participants introduced themselves.

### **2. Upcoming events**

GK gave an overview of upcoming AES game audio events. These included:

- AES Audio for virtual and augmented reality conference, Redmond, Washington, USA

- AES 145th Convention New York, USA

- AES 146th Convention in Dublin, Ireland

- 2019 International Conference on Immersive and Interactive Audio, York, UK

### **3. New Realities update and Wiki development**

At this point SS mentioned that live chat was working with 10 people watching including people from Hamburg, Munich, Australia, Lithuania and Copenhagen. He mentioned that this time was chosen to maximise the number of people.

GK mentioned that another physical meeting will happen at the AVAR conference itself.

GK discussed the development of the WIKI resource that people can contribute. He said that the target was to have an online resource before the York conference next year.

He mentioned that there will be online meetings based on specific topics that can be used formulate the Wiki.

SS said terminology is very important. He said that every big company wants to have their own proprietary terminology, which causes confusion. The Wiki should be a resource to clarify official/agreed upon terminology.

He mentioned that we cannot consider standards until we agree on labels.

GT said the landscape is so new and this symptomatic of where we are. What we decide in the next year for terminology may not be what's agreed upon now.

SS said that because we (the group) have some knowledge, we should be helping define the labels – this does not mean we will not throw away the labels in the future.

GT said that the changing landscape is something we may have to put up with for a while and a WIKI can be kept updated with the stuff we feel is relevant.

GK asked SS how did he decide on the terms he used in his book?

SS said he started with established terms, but even there were issues. He mentioned there was some terminology such as AR where he used two definitions (Augmented and Alternate)

SS asked GT if he felt it was too early to establish terminology?

GT stated he didn't feel it was too early but we need to be prepared that things may be turned upside down.

SS stated that maybe we can have tags such as 'Established term' to define how variable a term is.

GK seconded this concept. He stated that the next online meet should focus on terminology and that he will come up with a initial list of topics that we should look to define terminology for.

#### **4. Standards:**

GK asked for the opinion of the group on standards in the area of VR in light of the upcoming discussion with the standards committee at AVAR.

RR said that there is a grey area for loudness standards.

GT said its important for developers to know best practices. Playstation has -24 loudness standard – no standards on VR audio amplifiers – what works for one might not work for another. PSVR went for -24 to preserve dynamic range necessary for a believable reality and to preserve psychoacoustic cues - e.g. distance

GK asked if the dynamic range or loudness could be at a standardised level for all content?

GT felt that there should be a loudness standard across the board.

SS stated that distance and positioning is based on frequency/amplitude/time cues that the brain must process and we can't throw the Hollywood treatment at it.

SS also felt that before we consider loudness people need to know how to use spatial audio.

GT felt that this group could help people understand the psychoacoustic aspects.

SS gave the example of big budget productions who get it very wrong even on the basics.

GK said that there is a conflict between natural/plausible sound design in VR and the expectation of cinematic style sound coming from games.

SS said that Skywalker sound showed that certain elements of mono, stereo and spatial are required to give a good end result. We should have good content to demonstrate.

GK gave the example that live music recording for VR also has these issues.

GK suggested that there is a good basis here for case studies that could be reported for the WIKI.

GK asked if there particular thing that we should standardise, for example in Ambisonics/HRTFs etc.

SS said that listener preference to things like HRTFs is quite subjective. He mentioned that people enjoy different HRTFs for different applications

GK made the point that HRTF preference can also change over time.

SS said if we want VR to be mainstream the average punter wants to be told what to do and wants to just put in a game and be blown away.

GK said that there is somewhat of a chicken and egg scenario, as content must be created to blow consumers away, but producers also need convincing.

GT said that VR is here to stay for gaming and beyond. What we are lacking the killer app to drive sales. Creators need to experiment with the platforms.

SS said that people are still trying to shoehorn the old ways of doing things to the new formats.

GK asked is there anything on the tools that could be standardised or are there workflows that could help sound designers be more creative

SS said yes there should be – panning/volume etc as a starting point.

GT said that UI needs working on so that tools can be used within a VR framework. GK asked of co-ordinate systems could be standardised.

SS said that it would be hard getting the big engine manufacturers to agree. All the major engines approach things in their own way.

A chatroom Q was asked about the skills required that future sound designers need in this area.

GK said sound designers need to be adaptable and resilient to changes in the landscape.

SS said that one of the biggest problems is that there are not that many people talking about this stuff or game post-mortems. Skills are often things that cannot be predicted only when they are worked on.

RR said that you need learn how to design in the tools not just learn the tools. There are all sorts of tutorials and templates that you can learn from. Scripting experience in c-sharp and c++ are big ones right now.

SS said that skills learned from Spatial audio and VR are directly transferrable to normal console games.

GK suggested that giving people templates and projects is a good way to help educate them and help them experiment.

GK asked was there anything else on standards before the meeting next week.

SS said it may be a little premature for standards but that we just need to keep asking the question.

Chris Stecker (on chat) asked if we should look to standardise how to evaluate the formats?

GK agreed that this was a very pertinent question and gave the example of challenges in evaluating 6DOF VR spaces.

## **5. AOB**

Ben Gallagher (on chat) asked for good examples of sound design

SS said X-Wing is a great example of this. RR gave the example of Stefan's VR regatta sailing experience. He also mentioned WaveVR and AltSpaceVR.

GK mentioned that the next physical meetup will be at 8am on the Tuesday morning of AVAR.

SS mentioned that he will monitor the YouTube video and take forward any comments made after this meeting.

GK closed the meeting and thanked all for their attendance.