On standardization, reproducibility, and other demons (of VR)

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Audio VR is an exciting and relatively new discipline that is unraveling in front of the eyes (or better to say, ears) of a community of researchers and practitioners. Unlike our "cousins" from the visual domain the sound domain has not thrived on developments pushed by the content industry (e.g. cinema, or videogames) and still has to unleash its full potential. Nonetheless the community on one level started developing new systems and applications and on another started exploring the possibilities offered by commercially available systems, and hitting the boundaries of those systems.

With respect to this first group a conspicuous amount of the outcomes point at an exploratory phase where the emphasis is on the possibilities (including reinventing the wheel, but in 3D). To draw a parallel with sound synthesis at large is like focusing on the portion of synthetic sounds that can reproduce a real instrument.

Unlike other more well established fields we are still at the beginning of this journey, and it is now time to promote an agenda that aims at the definition of a commonly accepted set of rules (that might lead to standards) and practices pointing at the reproducibility of research. To continue the parallel with sound synthesis it is now the time to promote an initiative similar to what MIDI did. Providing a technical standard that described protocols, interfaces, and applications was not perceived as a threat, or a limitation for the manufacturers and achieved the important goal of interoperability for the users, allowing them to combine systems in a way that was not possible before.

Even with the adoption of standards the field of computer music is still facing these challenges, we are still unsure if we will be able to use the same instruments, the same softwares, in order to stage historical performances again according to the will of the author. We are probably not going to be able to solve the problem entirely, our best hope is to "mitigate" the problem, and give a set of instruments to approach this topic in 10 years (or 100, or just 1).