

Let's look back at the two days of workshops around the ADM-OSC, which were held in Paris in a foyer of the Maison de la Radio on September 28 and 29, 2023.

The French section of **AES**, in partnership with **Radio France**, organized two days of meetings between hardware and software manufacturers offering object mixing solutions.

This workshop, called "**ADM-OSC PlugFest #1**", should be the first in a series, to exchange and offer the opportunity to test the interoperability of metadata.



Interoperability Testing

Installed in the “Foyer” of “Maison de la Radio” (National Radio Broadcasting House) where stations connected to an IP network allowed the exchange of OSC messages, the volunteer participants formed themselves into transmitter/receiver pairs. This allowed the implemented commands to be tested.

Most of the commands in implementation 0.4 (see https://immersive-audio-live.github.io/ADM-OSC/html/adm_spec.html) proved to be functional.

Some found small problems, got their hands dirty and many of these problems were solved live before the end of the event.

Other more complex questions have been added to the list of "Issues" referenced on GitHub: <https://github.com/immersive-audio-live/ADM-OSC/issues> in order to continue the exchanges later.

Among the main findings, it quickly proved useful to propose default ports and to manage the speed at which messages are sent by the sender (depending on the

network throughput, the parser in OSC reception, the processing time by the rendering engine, etc.).

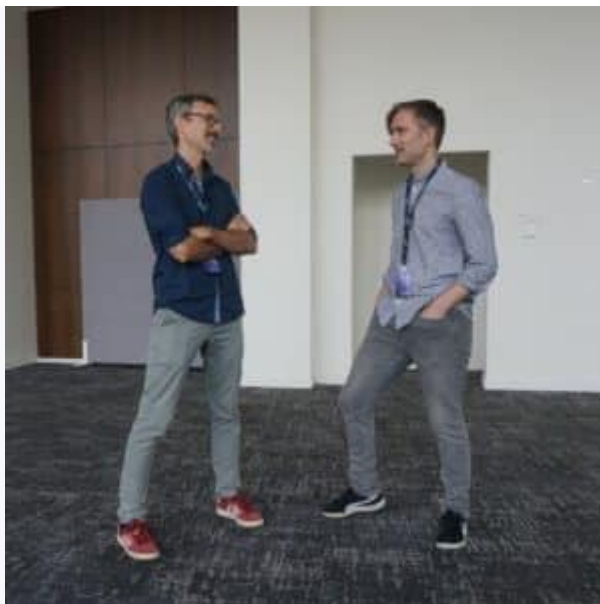
The discussions concluded on the question of the position of the listener for the switch to a "Physic-based" engine in (X, Y, Z) and a "Sweet spot" engine in (A, E, D), etc.

Here are the participants who gladly took part in the game of network musical chairs:

- Adamson Systems Engineering
- BBC
- d&b audiotechnik GmbH & Co. KG
- SOFTWARE ENGINEERING FLOW
- Ircam CNRS
- L-Acoustics
- Lawo AG
- Music Unit
- Open Source Chestnut ADM-OSC Module
- Radio France Innovation
- Tripinlab



In the foreground, an example using Chataigne of a live controller using ADM-OSC <https://github.com/madees/BeatStepAnimator> as well as a prototype of a CV>ADM-OSC module in Eurorack format. Behind, Martin Antiphon from AES France discusses his space synthesizer and binaural rendering engine MyBeeKnows developed with Music Unit. Then, the Lawo mc236 console and its ADM-OSC plugin. Finally, in the background, Hervé Déjardin's 3D stage audio controller.



Guillaume Le Nost (L-Acoustics Creations) and Thibault Carpentier (Ircam/CNRS) amid constructive exchanges.



Hervé Déjardin (Radio France, Son Innovation) and Mathieu Delquignies (AES France, d&b audiotechnik) took great care of the organization.

Visitors and students then joined the workshop participants to attend lectures and debates by representatives of Dolby, Meyer Sound, Noise Maker, RFI Labo, etc. In total, nearly 40 people were present at this first event.

Introduction to the ADM-OSC initiative by

Michael Zbyszynski *(Senior*

Software Developer, L-Acoustics)

The first talk in the conference space showcased the initiative to standardize object-based audio positioning (OBA) data in live production ecosystems, by implementing the Audio Definition Model (ADM) standard on Open Sound Control (OSC).

Find a summary of the previous episodes by Michael Zbyszynski, Hervé Déjardin, David Marston and Guillaume Le Nost as presented at the I3DA 2023 conference (<https://www.i3da2023.org/>) here: https://france.aessections.org/wp-content/uploads/sites/9/2023/10/ADM_OSC_I3DA_Final.pdf

And Michael's presentation here: https://france.aessections.org/wp-content/uploads/sites/9/2023/10/ADM-OSC_PlugFest.pdf



History of the development of the

ADM standard with the EBU, by Matthieu Parmentier

(Head of France.tv access)



Matthieu Parmentier spoke about the motivations and challenges faced by object mixing in the field of radio and television broadcasting, which led to the definition of the *Audio Definition Model* (ADM) standard.

Find out more about the dedicated AES committee:

<https://aes2.org/technical-council/technical-council-committees/technical-committees/aes-technical-committee-on-broadcast-and-online-delivery/>

He also spoke about the open source EBU ADM Renderer (EAR) technology, developed in March 2018 by an alliance of R&D and broadcasting organisations: IRT, BBC, France Télévisions, b<>com and the EBU's Technology and Innovation Department. This specification is also referenced in the work of the International Telecommunication Union (ITU).

A live application example: Eurovision Song Contest 2023, by David Marston *(Senior R&D Engineer*

BBC)

The goal is to share the same object mix live with three renderers during the Eurovision Song Contest 2023. The ADM-CSO has enabled this live interoperability. In parallel, the BBC developed the "Squeezer" tool to transform ADM-OSC metadata into s-ADM format for broadcast.

Find David's presentation here: https://france.aessections.org/wp-content/uploads/sites/9/2023/10/ADM-OSC_ESC_BBC.pdf



The benefits of ADM-OSC standardization for developers, by Gaël Martinet

(Spat Revolution, Flux CEO)

Discussions on the motivations and advantages of establishing an interoperability standard for OSC commands for a software publisher.



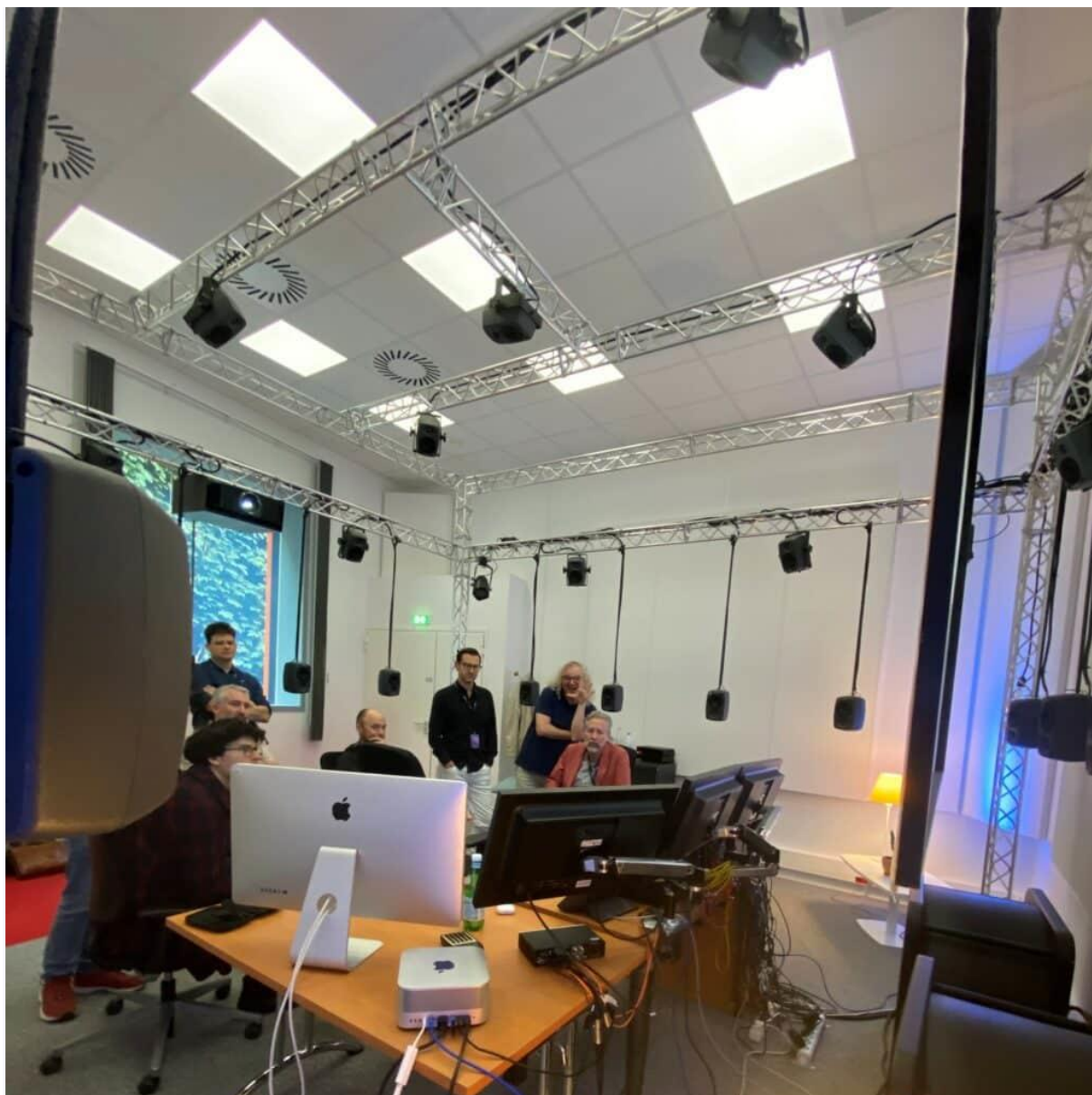
Demos in "Le Cube", by Hervé Déjardin *(Radio France*

Innovation Audio)

Between each workshop, over the two days, sessions were offered in small groups, to demonstrate the production workflow and object mix listening on different rendering engines (Nuendo, Sonic Emotion Waves I, L-Isa, Doby Atmos, Apple iTunes).

Find the workflow set up by Radio France Innovation on this occasion:

https://france.aessections.org/wp-content/uploads/sites/9/2023/10/WORKFLOW_LECUBE_RADIOFRANCE.pdf



Conclusion

Friday morning was dedicated to debates about the "Issues", to document them live on GitHub and to advance some of them.

It also allowed us to conclude these two days by discussing the next steps of the adventure:

Next steps?

What are our goals for ADM-OSC in the next months?

- PlugFest #2? (AES NYC? SF? EBU, #3...)
- 1.0 Spec?
- How do we decide what goes in?
 - Always maps to ADM? Port tx/rx?
- What is ADM-OSC compliance?
- Issues identified from PlugFest #1
 - Any more tickets?

Open issues

- spread/slope/width/size/extend/divergence
- distance (from where?)...bundles...

In short, a beautiful, productive, and friendly first edition, to be continued!
Follow and participate in the evolution of the draft standard on:
<https://github.com/immersive-audio-live/ADM-OSC>