Theoretical Backgrounds of Audio & Graphics

Audio Rendering

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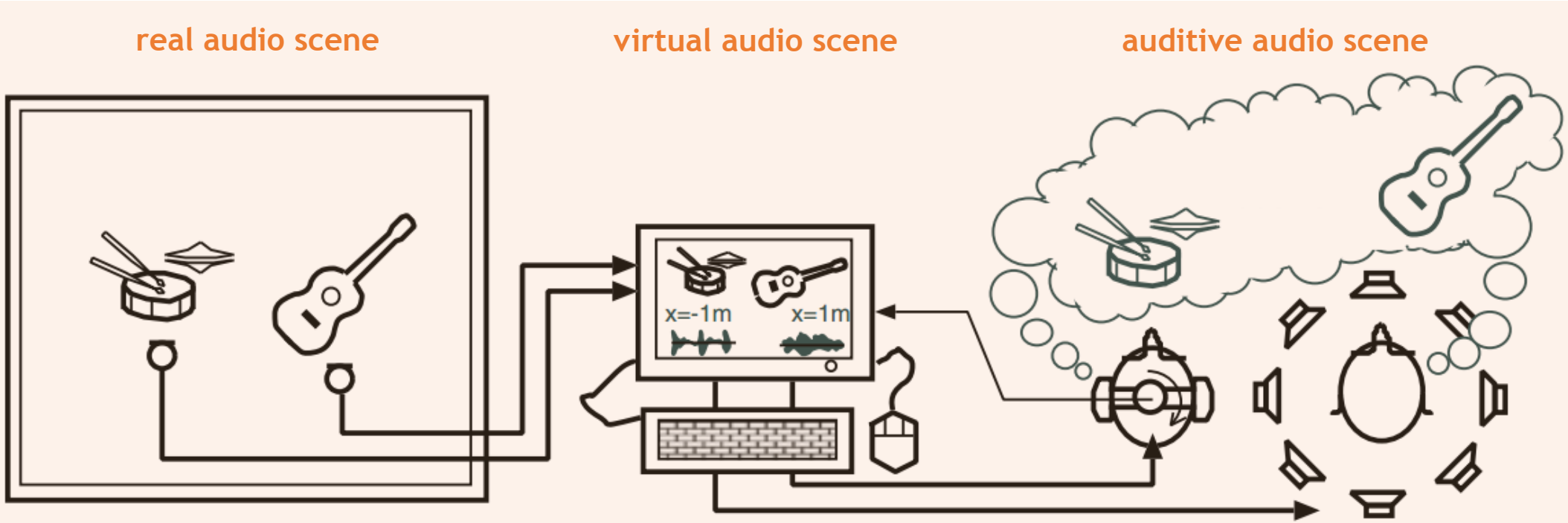
Audio Rendering

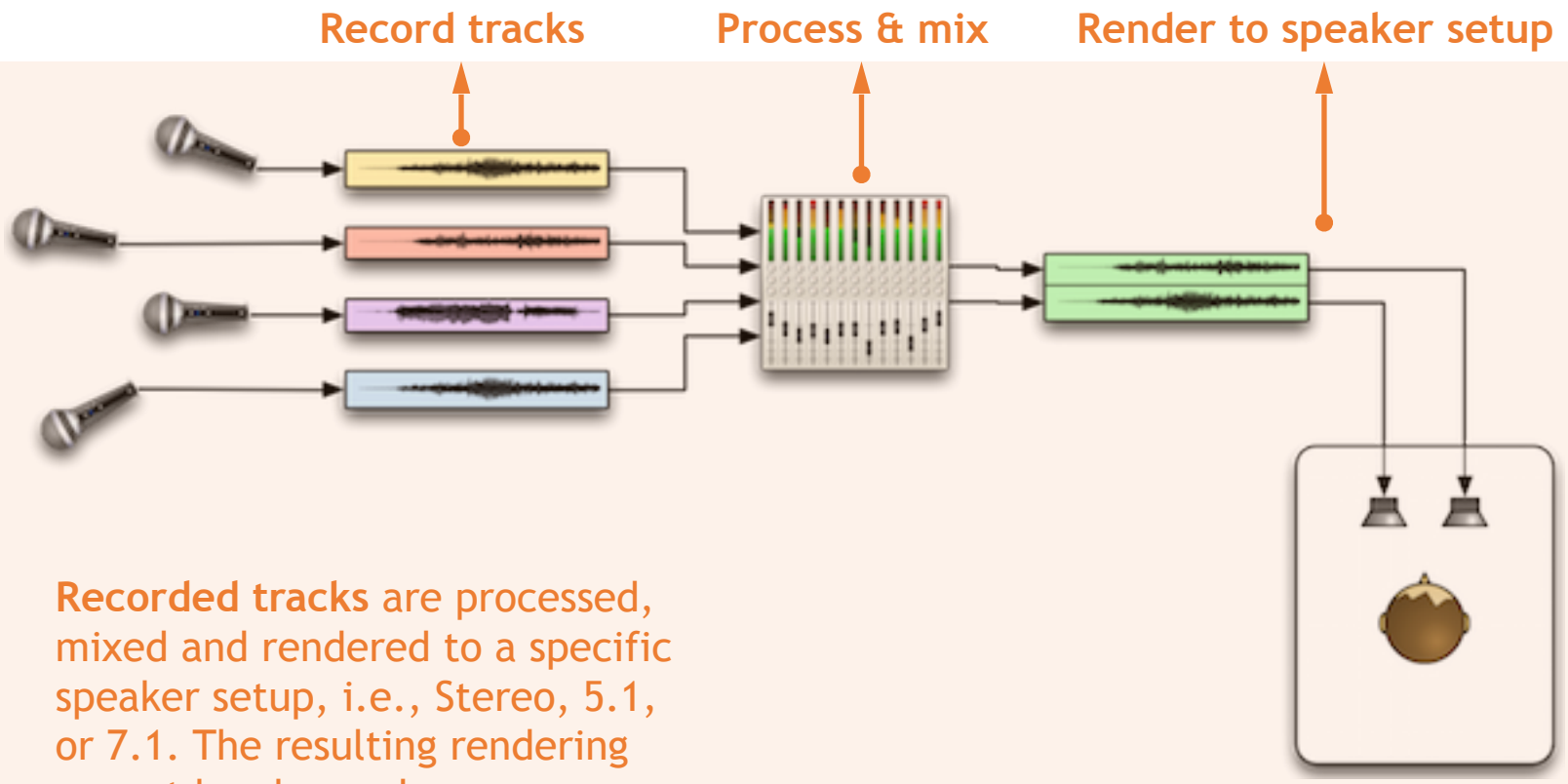
- Central to most digital audio rendering approaches is the realistic simulation of a real audio scene



Frank, M., Zotter, F., Wierstorf, H., Spors, S. **Spatial Audio Rendering**. Moeller, S.; Raake, A. (ed.): Quality of Experience. pp. 247-260, Springer, 2014

Audio Rendering

- Channel-based audio rendering

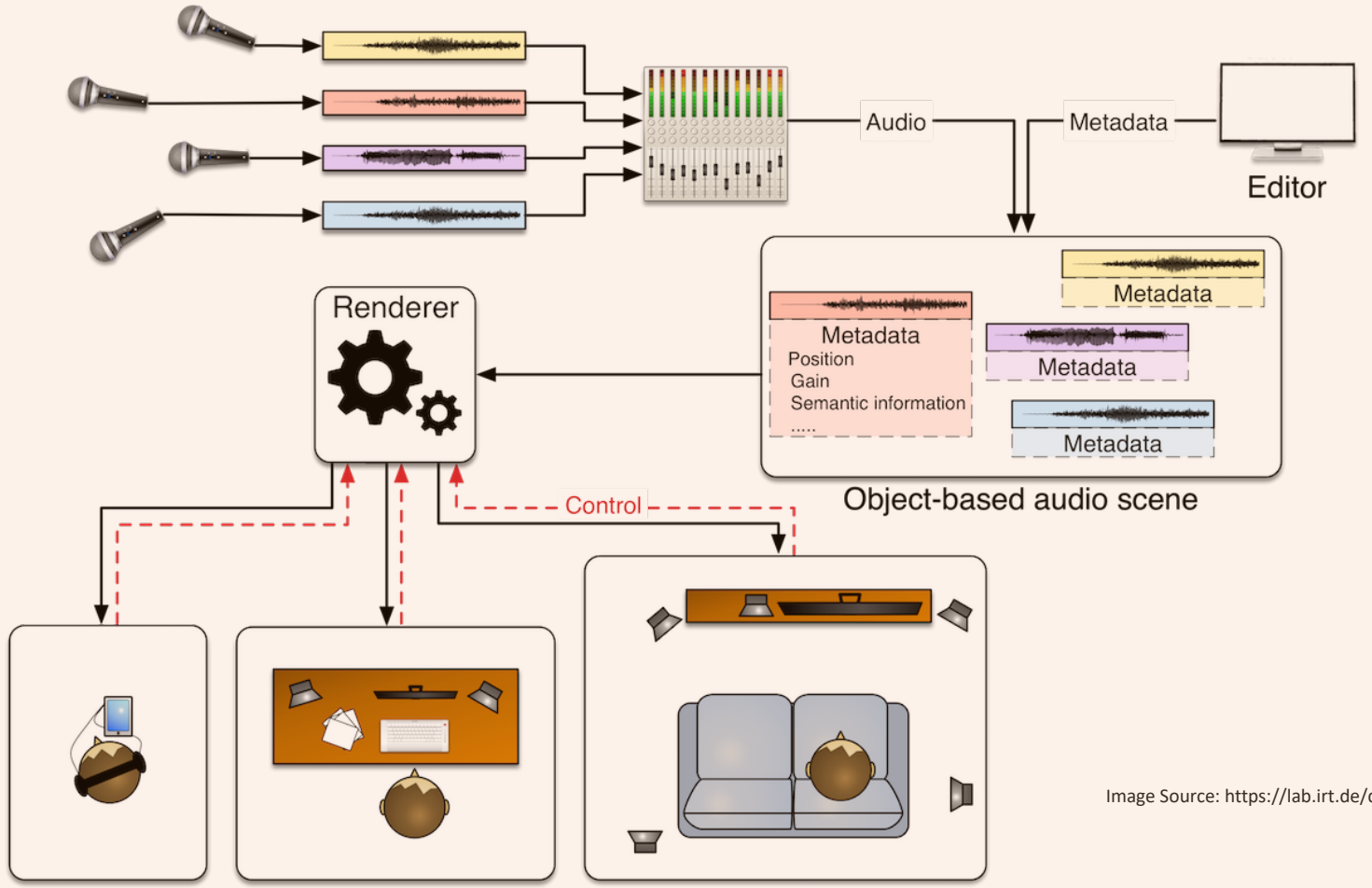


Recorded tracks are processed, mixed and rendered to a specific speaker setup, i.e., Stereo, 5.1, or 7.1. The resulting rendering cannot be changed.

Image Source: https://lab.irt.de/demos/object-based-audio/

Audio Rendering

- Object-based audio rendering



Recorded tracks are combined with meta data like position, direction, etc., to form individual **audio objects**.

A renderer generates loud-speaker signals based on the actual speaker setup and from the object based audio scene.

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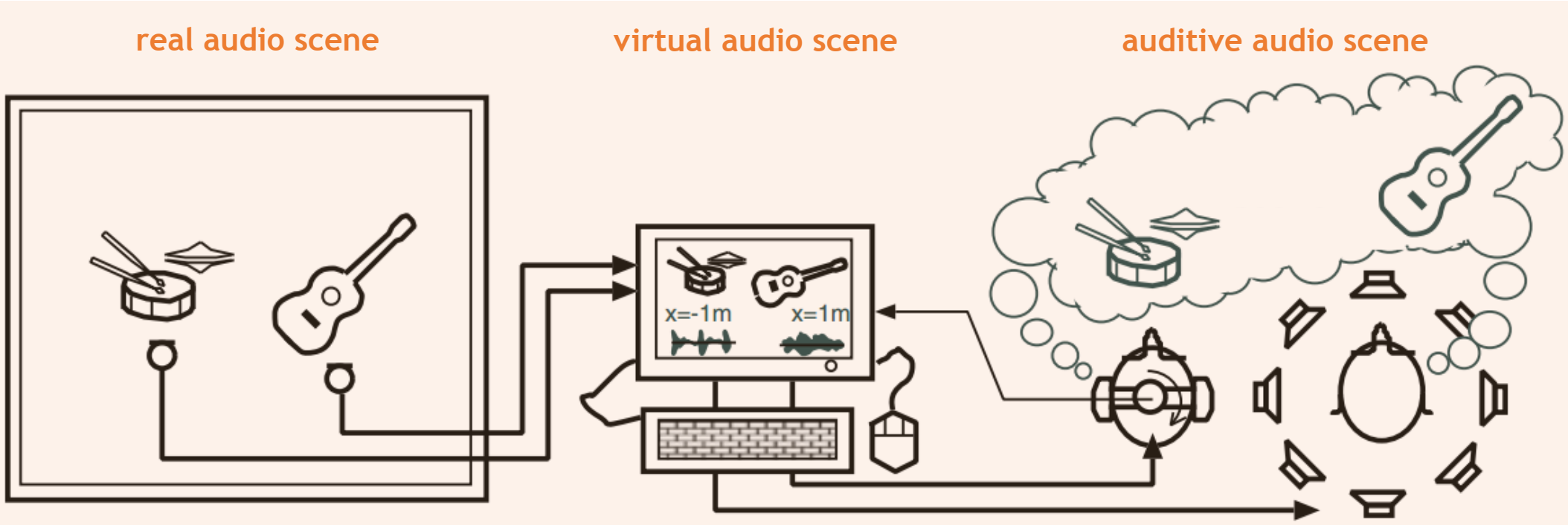
Audio Rendering

- To understand audio rendering, we need to understand the properties of sound, hearing and acoustics, as well as digital audio techniques processing



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