The arrangement of sound sources and their interactions, both with each other and with the surrounding space, has always been an essential part of the composition, performance and reception of music. In particular, creating and manipulating virtual space in electroacoustic music—that is, manipulating the positions and movements of sound sources, as well as the propagation of sound in composed space—raises various technical and aesthetic issues in regard to performance and interpretation. While spatialization has been a fundamental aspect of electroacoustic music since its early stages, and while many tools have been developed and implemented for synthesizing and controlling spatial informations, there is still clear need for more flexible, intuitive and efficient tools, particularly in performance environments. Unlike other quasi-standard user interfaces in production and performance of electronic and electroacoustic music, we learned that live performance artists strive for intuitive and easily customizable interfacing at various levels of complexity.

This paper will describe the concept of a modular toolbox for operating an object-based spatial audio model using multiple protocols and platforms. To this end, a prototypical implementation of hardware/software interfaces and tools for sound spatialization in the context of an electroacoustic live performance on a Wave Field Synthesis (WFS) system will be presented. To outline the aesthetic potentials of this interfacing concept in a performance environment, the paper will focus on aspects of intuition, flexibility and artistic expressiveness, as well as relationships between perceptual possibilities offered by WFS technology and the aesthetic objectives of the composer or performer.