



## ***Integrated sound and kinematics solution***

Motion capture is ideal for a wide range of music applications. Together with integrated sound and kinematics, the system is a total solution for high-end sound applications for researchers. It is based on our software, Qualisys Track Manager (QTM), and our cameras with integrated support for Open Sound Control.

The unique flexibility and portability of the system makes it easy to set up the equipment and transport it to different studios or public venues. The study of music related to body motion and gesture demands special requirements when integrating the motion capture system and external equipment in regard to synchronization and data interchange amongst the different systems.

### FEATURES

- Integrated with OSC
- Hardware synchronized with external system, no drift
- Real-time streaming over OSC or UDP/IP
- Playback with synchronized audio and mocap data
- Analyze functionality
- Support 2D, 3D and 6DOF
- Portable for data capture and analysis
- Supports both active and passive markers

## THE QUALISYS MOTION CAPTURE SYSTEM

The key components of the system are the cameras<sup>1</sup> and the Qualisys Track Manager (QTM) software. The unique flexibility and portability of the system makes it easy to set up the equipment and transport it to different arenas or other venues. Fully objective and quantitative data can be obtained for the calculation of joint angles, acceleration, force, elasticity, deformations, body posture, balance and other parameters.

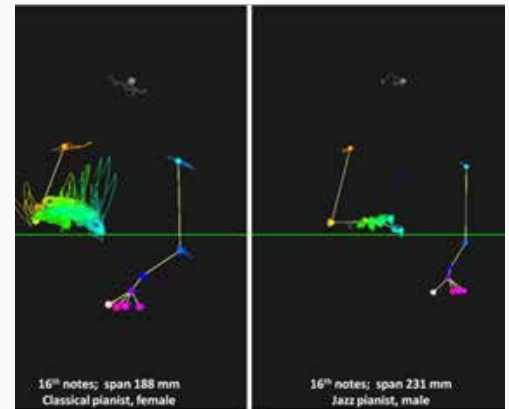
## SYNCHRONIZATION

The cameras have the ability to receive a hardware synchronization signal of any frequency (for example 96 kHz) and have their internal clock locked-on to the external source. The external clock source frequency can be either higher or lower than the desired motion capture frequency. In addition to the ability to synchronize to an external source, some camera systems are also capable of synchronizing any external equipment at a frequency independent of the motion capture frequency.

## DATA FORMAT

QTM has native support for streaming data over Open Sound Control (OSC). The stream of identified 3D data, 6DOF data and/or analog data can be packaged in OSC messages for transport over UDP/IP to an OSC-aware software such as Max/MSP/Jitter. Besides the OSC stream, QTM also has several ways of feeding data to external applications for processing, such as MATLAB.

<sup>1</sup>Miqus have syncing capabilities when connected to the Miqus sync unit



## EXAMPLES OF STUDIES

- Understanding hand and arm motions of pianists and associated forces generated when pressing keys
- Investigating the relationship between physical and musical gestures; more specifically, investigating the role of movement in synchronization and emotional expression using optical motion capture, computational music analysis, computational modeling, and psychological experiments
- Studying differences between various makes of music equipment or musicians

