# KiOP: Touchless gesture-based user interface for medical image viewers

PROBLEM TO SOLVE

During an intervention, the surgeon must be able to consult his patient's radiography at any time.
The radiography are commonly displayed on a computer through a medical image viewer. Currently, the surgeon needs assistance to manipulate these images because of sterility conditions.

SOLUTION

The HUG (Geneva University Hospitals) and Hepia (Haute école du paysage, d'ingénierie et d'architecture de Genève, member of the HES-SO) have jointly developed a software — KiOP— capable of controlling the viewer's main features by simple hand gestures, respecting the operating theater sterility conditions.
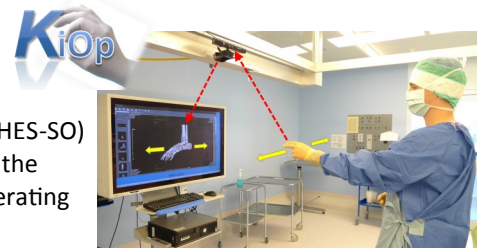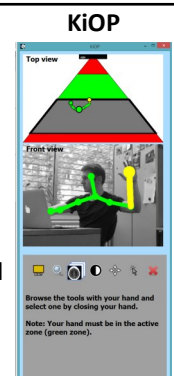

TECHNICAL FEATURES

KiOP works in parallel with a medical viewer (Weasis) sending to it the commands to perform on the images according to the surgeon gestures.
The graphical interface provides visual feedbacks on the user posture in order to give him/her the optimal interaction experience.
KiOP is written in C++ and based on the Qt Framework with a modular architecture. It is designed to handle several gesture detection device types and potentially connect to any medical viewer. The software is designed to be installed on the operating room's PC. It could also be extended to other applications, even out of medical field, where touchless interaction with a computer would be useful.

REFERENCES