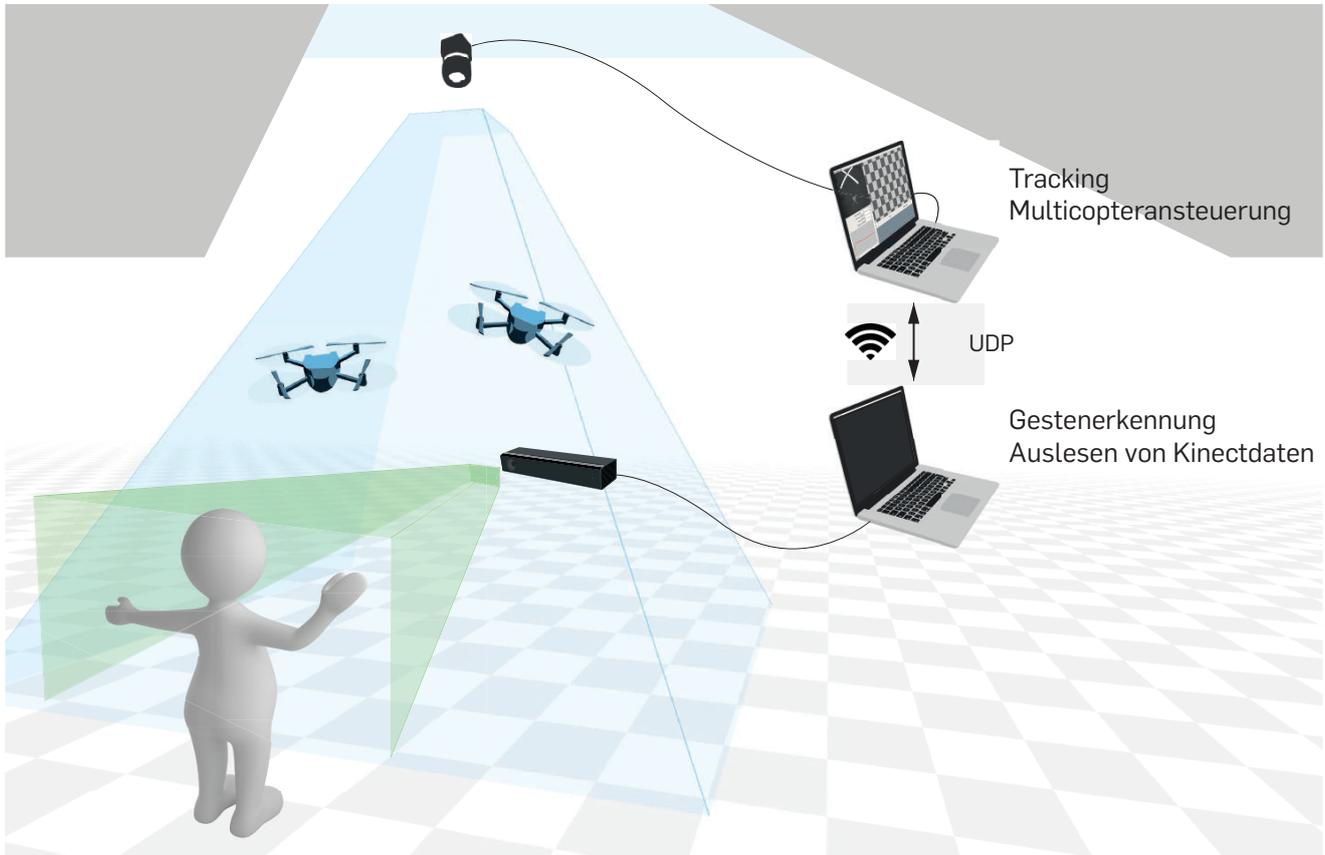




Multi-user Interaction with MultiCopters



While the control of multicopters by remote control requires skill and practice, MIMIC allows a natural and intuitive interaction between human and multicopters.

In addition to gestures for takeoff and landing, the user can control freely the copter by hand, so that it mimics the movements of the hand. This makes it particularly easy to predetermine the movements of Copters.

By pointing with the hand on the copter, a copter is selected by a user and can then be controlled by hand. By bales of fist free control is ended and another user can take control over the copter. It is thereby ensured that a copter can always be assigned to only one user. To select a copter, a user can point on it with his hand. The copter now follows the hand's movement until the user clenches his fist, which stops the hand control.

This enables other users to take control over this copter and also ensures that one copter is only assigned to maximal one user.

MIMIC is integrated in the ICARUS project (Infrastructure for Compact Aerial Robots Under Supervision) of RheinMain University. Position and orientation (poses) of copters are determined using the active optical HSRM (high-speed and robust monocular) tracking developed by the CVMR (Computer Vision and Mixed Reality) working group.

A Microsoft Kinect provides information about the positions and movements of the users. The integration of this information into the common world coordinate system in which the multicopters move, allows direct interaction between users and copters.



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