Reduction of Interaction Space in Single Point Active Alignment Method for Optical See-Through Head-Mounted Display Calibration

Definition

point); the user needs to align with *it* by providing its

Interaction Space is defined as a set of parameters



Improved alignment precision: distribution for standard SPAAM (upper left); distribution in fh-SPAAM (upper right); corresponding Euclidean distances (lower left); average distances over 0.6s (lower right)

Long Qian, Alexander Winkler, Bernhard Fuerst, Peter Kazanzides, Nassir Navab



fh-SPAAM is scored "good" usability from SUS survey of the participants.

Method **Fixed-Head 2 DOF SPAAM:**

The user positions the head on a chin rest for additional stability, and alignments are made by moving a computer mouse (2 DOF), instead of head motion (6 DOF) as in standard SPAAM.



- **Epson Moverio BT-200**

- **Chin Rest** for additional stability
- **ARToolKit** for marker tracking

Acknowledgement:

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[1] M. Tuceryan and N. Navab. Single point active alignment method (SPAAM) for optical see-through HMD calibration for AR. In IEEE/ACM Intl. Symp. on Augmented Reality (ISAR), pages 149–158, 2000.

[2] A. Fuhrmann, D. Schmalstieg, and W. Purgathofer. Fast calibration for augmented reality. In ACM Symp. on Virtual Reality Software and Technology, pages 166–167, 1999.



Technische Universität München

Fiducial Markers at different 3D positions **Computer Mouse** for interactive alignment

