INDIANA UNIVERSITY STUDY INFORMATION SHEET FOR

Virtual Reality vs. Desktop Registration User Interface with Reflective Phase VR Intervention (IRB # 1910331127, Amendment 004)

You are invited to participate in a research study of virtual reality (VR) vs. a more traditional 2D ("Desktop") interface. You were selected as a possible subject because you are 18+ years old, and because you have not participated in this study previously**.** Please read this form and ask any questions you may have before agreeing to be in the study.

The study is being conducted by Dr. Katy Borner (katy@indiana.edu) and Andreas Bueckle (abueckle@indiana.edu) from the Luddy School of Informatics, Computing, and Engineering at Indiana University, and Kilian Buehling (kilian.buehling@tu-dresden.de) from the Technical University of Dresden in Germany. It is funded by the National Institutes of Health under OT2OD026671.

STUDY PURPOSE

The purpose of this study is to explore how users manipulate 3D objects and then optimize their behavior based on visualizations of their own data in VR. We want to know if there are differences in task completion time, accuracy, and user satisfaction between two cohorts: a control cohort that performs all the tasks in one go, and an experiment cohort that gets to inspect data of their own actions in VR before completing the second round of tasks ("Reflective Phase"). In this call for participants, we aim to recruit subjects for the experiment cohort only.

Additionally, we assign our subjects to one out of three conditions: a traditional "Desktop" interface, a VR interface where the user is standing and walking around ("VR Standup"), and a VR interface where the user is sitting at a desk ("VR Tabletop"). To that end, we are collecting data on timing and task accuracy alongside behavioral metrics (such as hand and head positions in VR as well as mouse position in Desktop) and user inputs such as button presses. We will also ask questions about the usability of the tools used across the three conditions. Please note that you have to be 18+ years old. People with an epilepsy diagnosis are not eligible.

PAYMENT

Upon completion of your participation in the study, you will receive $20 in Amazon.com gift cards.

NUMBER OF PEOPLE TAKING PART IN THE STUDY

If you agree to participate, you will be one of ~42 subjects who will be participating in this research.

PROCEDURES FOR THE STUDY

If you agree to be in the study, you will be handed a surgical mask upon arrival at the research site as needed and asked to wash your hands before the experiment. Further safety precautions may need to be implemented as needed, pending policy changes from IU, the Luddy School of Informatics, Computing, and Engineering, or other entities.

If you agree to be in the study, you will come to our research site during a previously agreed-upon timeslot. Then you will complete a pre-questionnaire to gather basic demographic information as well as information about your current usage and comfort with data visualizations, VR, and 3D environments. Subsequently, you will be assigned to one of our three conditions as per the researcher's discretion: Desktop (computer screen), VR Standup, or VR Tabletop. You will then be given instructions on how to use your tool, and then be presented with a set of tasks plus a brief intervention ("Reflective Phase") in VR. Finally, you will be given a post-questionnaire where you can share ideas for improvement. The study will take approximately 45 to 75 minutes. You will be recorded with audio and video, and we will log your actions in the physical world and in the virtual space for later analysis.

RISKS AND BENEFITS OF TAKING PART IN THE STUDY

The risks of participating in this research involve discomfort answering questions about unfamiliar visualizations. Further, some users can experience discomfort from using VR. Some users of VR headsets report motion sickness. Please be aware that you can terminate your participation in the study at any time. You may also tell the investigator if you need to take a break.

CONFIDENTIALITY

Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published and databases in which results may be stored.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the Indiana University Institutional Review Board or its designees, the study sponsor, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP), the National Institutes of Health (NIH), etc., who may need to access your research records.

All research funded by the NIH is automatically granted a Certificate of Confidentiality. Information on these protections are described in the following paragraphs. Some of the details may sound odd in the context of this user study. However, we still want to fully inform you about these protections.

For the protection of your privacy, this research is covered by a Certificate of Confidentiality from the National Institutes of Health. The researchers may not disclose or use any information, documents, or specimens that could identify you in any civil, criminal, administrative, legislative, or other legal proceeding, unless you consent to it. Information, documents, or specimens protected by this Certificate may be disclosed to someone who is not connected with the research:

(1) if there is a federal, state, or local law that requires disclosure (such as to report child abuse or communicable diseases);
(2) if you consent to the disclosure, including for your medical treatment;
(3) if it is used for other scientific research in a way that is allowed by the federal regulations that protect research subjects;
(4) for the purpose of auditing or program evaluation by the government or funding agency.

A Certificate of Confidentiality does not prevent you from voluntarily releasing information about yourself. If you want your research information released to an insurer, medical care provider, or any other person not connected with the research, you must provide consent to allow the researchers to release it.

FUTURE USE

Information collected from you for this study may be used for future research studies or shared with other researchers for future research. If this happens, information which could identify you will be removed before any information or specimens are shared. Since identifying information will be removed, we will not ask for your additional consent**.**

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study, please contact researcher Andreas Bueckle at abueckle@indiana.edu. For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at 812-856-4242 or irb@iu.edu.

VOLUNTARY NATURE OF THIS STUDY

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with the Luddy School of Informatics, Computing, and Engineering.