first.stage newsletter number 1/2019
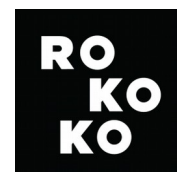
Editorial

Dear Reader,

The third first.stage newsletter presented here contains what happened in our project since our last newsletter. We are very happy about your interest in our project. The consortium has been working together even closer to realise our ideas. After nearly one year of user evaluation within the consortium the previsualisation prototype we have implemented is near to post project commercialisation and will appear on the market soon.

The project result is a user-friendly system that fulfils the needs of professional creatives e.g. directors of theatre productions, previsualising their ideas in a novel way utilizing virtual reality presentations and motion capturing.

Please have as well a look to our website and follow us on Twitter, Facebook or YouTube.

Current activities of the first.stage project

first.stage at FMX2019

In cooperation with our project partner Rokoko, we had the chance to demonstrate first.stage at the FMX 2019 – Conference on Animation, Effects, Games and Immersive Media in Stuttgart. At our booth, we had many fruitful discussions with interested visitors from the scientific sector as well as industry experts. Attending the conference provided essential insights that lay the foundation for further project-related developments.

Evaluation Workshop May 2018

On the 22nd and 23rd of May 2018 the evaluation team met in Bremen with the users of the application partners. How to implement the evaluation script was discussed in depth in Bremen during two interactive days full of questions that were clarified. The outcome was an evaluation plan and road map agreed by all participants. Based on this workshop smooth evaluation is ongoing at the sites of the evaluation partners and results were fed back to several releases of the first stage software.

Central Meeting in Vienna February 2019

On the 25. and 26. of February, the first.stage project partners assembled for the central meeting in Vienna at arx anima's offices. On the first day, we discussed the status of each work package individually and elaborated further steps for the future. The second day entailed a technical meeting with the purpose of identifying bugs and desirable features for the software.

Overview on recent publications

Thomas Fröhlich, Dmitry Alexandrovsky, Timo Stabbert, Tanja Döring, Rainer Malaka: VRBox: A Virtual Reality Augmented Sandbox for Immersive Playfulness, Creativity and Exploration (2018) CHI PLAY '18

Augmented sandboxes have been used as playful and educative tools to create, explore and understand complex models. However, current solutions lack interactive capabilities, missing more immersive experiences such as exploring the sand landscape from a first-person perspective. We extend the interaction space of augmented sandboxes into virtual reality (VR) to offer a VR-environment that contains a landscape, which the user designs via interacting with real sand while wearing a virtual reality head-mounted display (HMD). In this paper, we present our current VR-sandbox system consisting of a box with sand, triple Kinect depth sensing, a virtual reality HMD, and hand tracking, as well as an interactive world simulation use case for exploration and evaluation. Our work explores the important and timely topics how to integrate rich haptic interaction with natural materials into VR and how to track and present real physical materials in VR. In a qualitative evaluation with nine experts from computer graphics, game design, and didactics we identified potentials, limitations as well as future application scenarios.

This paper received the *Honourable Mentions* award at the conference

Timo Stabbert, Thomas Fröhlich, Dmitry Alexandrovsky, and Rainer Malaka: Extending Augmented Sandboxes with Virtual Reality Interaction (2017) MuC '17 Workshopband

Augmented sandboxes are often used as educative tools to create, explore and understand complex models. For the use case of a water cycle simulation, we extend the interaction space of augmented sandboxes into virtual reality to overcome limitations of current systems that include non-interactive 2D projections and shadow problems. We present our ongoing research and the prototypical setup of our VR sandbox consisting of a triple Kinect setup, depth sensing, VR, and hand tracking using Leap Motion. The setup shall help us to explore the space of haptic redirection. Further, we discuss our water cycle simulation use case and interaction scenarios that facilitate VR interaction and visualization.

Dr. Peter Knackfuß

InfoConsult GmbH

Am Kapellenberg 2
D-28759 Bremen

Phone: +49 421 205 31 27
peter.knackfuss(at)infoconsult.net