

Design and Requirement Analysis of a Factory Design Tool

Keywords: Virtual Reality, Factory Design, Software Design, Requirement Engineering

Overview

The Build IT system is a 1998 ICVR project that allows multiple users to design a factory layout using a projection on a table and camera based tracking of input “bricks” that can be used to move virtual objects.

With the advances made in computer hard- and software since then and the current topic Industry 4.0, it is time to review the system in the current context and in comparison to state of the art human computer interaction and provide a foundation for a future renewed system.



Goals

The goal of this thesis is to review the original Build IT system and reexamine the original design choices with respect to current requirements from potential users and also evaluate new possibilities and challenges that opened up with the raise of touch screens, smart devices, networking and so on.

Tasks

- Review the original system, comparable commercial and research projects and the current state of HCI research
- Analyze potential application and requirements for such a tool based on comparable systems and user feedback
- Research current and upcoming hardware and evaluate their possible use in a new Build IT system
- Provide an analysis and recommendations on hard- and software architecture for a new Build IT system to be developed in the future.
- OPTIONAL: Implement a small mock-up to answer specific questions for example with respect to usability

Skills

- Basic understanding in programming
- Knowledge of factory design are an advantage

Results

The results of this thesis have to be summarized in a written report and will be presented to the ICVR group in a 20 min talk.

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