

Optimizing Virtual Superimpositions: User-centered Design for a UAR Supported Smart Home System

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Abstract: With using Ubiquitous Augmented Reality (UAR) technologies information systems take the next step towards getting and presenting virtual information everywhere in 3D space. But especially the UAR visualization implies new challenges for the user of such systems. This article shows one first evaluation concerning the incorporation of user-centered design while developing UAR systems for a smart home scenario. Furthermore, we focus on spatial AR (sAR) displays which do not constrain the user's movements. With the described experiment we evaluated two extracted visualization parameters of sAR information presentation (realism and redundancy of the virtually displayed information) with the help of projected indoor navigation aids (usable in smart homes). Therefore, we tested different forms of superimposed maps and arrows. The results show objective and subjective tendencies and significant effects for schematic and more redundant projective AR presentations.

Keywords: Ubiquitous Augmented Reality, User Interfaces, Visualization, Smart Home, Navigation Systems, Performance Evaluation
