

CSG: A communicative Game for Interactive Floors

Daniel Birnstiel, Patrick Kuhn, Fabian Paul, Lennard Wolf

Hasso Plattner Institute
Prof.-Dr.-Helmert-Str. 2-3
14482 Potsdam, Germany
{ daniel.birnstiel, patrick.kuhn, fabian.paul, lennard.wolf }@student.hpi.de

ABSTRACT

After looking upon the possibilities of interactive floors and taking into account the immense demand for, and market of video games today, we developed *CSG*, or *Cooperative Spaceship Game*. It is meant as a prototype for communicative, interactive floor based games and demonstrates, how playing games at home can once again involve movement of the whole body - and not just the thumbs.

The players' goal is the joint reaching of levels by performing tasks that are created at random. These tasks may involve actions which the player, who was given said task, may not be able to carry out. Thus he/she has to tell their partner(s) to execute it.

Author Keywords

Cooperative Spaceship Game; Communication; Interactive Floors; Body Movement

INTRODUCTION

With the advent of the *Internet of Things* and thus the rising digital Interaction with everything around us, floors will soon become intelligent entities just like our phones are today.

But next to all the productive things we can now do with our devices, we also want to integrate them into our leisure time. Just like touch screens revolutionized the way we play games, interactive floors will again push the boundaries of the way we think about enjoying ourselves through games.

To understand what players want from a game, we interviewed a professional Game Designer, a Game Design Lecturer as well as a few gamers - both casual and somewhat professional. We learned that nowadays players have a lower attention span and thus want to understand the game right away. This is why we started out contemplating different mini games and at some point even considered a mini game collection. But what we saw as the main advantage of an interactive floor based game was the fact that the player might

not be alone, but rather be in the same room with others and cooperate.

This is why we chose to concentrate on three main goals for our project: **Communication**, **Cooperation** and **Discoverability**.

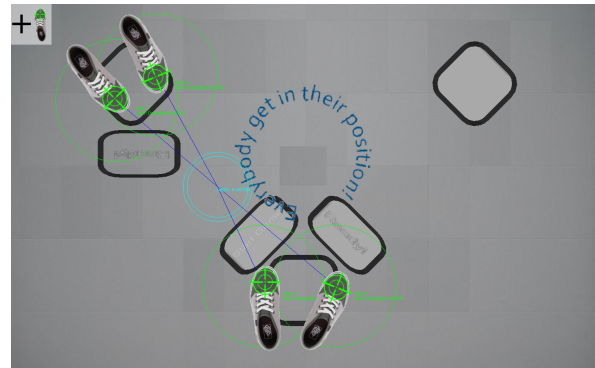


Figure 1. Here you can see the beaming area.

THE CONCEPT OF THE GAME

Hier wird das spielprinzip erklrt

WALKTHROUGH

Hier kommt die Introduction zum Walkthrough

The Beaming Area

Was passiert in der beaming area?

The Gaming Area

Was passiert in der gaming area?

DESIGN

Design Concept 1

Warum ist unser Design das beste fr den job?

Design Concept 2

Warum ist unser Design immer noch das beste fr den job?

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ACKNOWLEDGMENTS

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REFERENCES

1. Adobe Acrobat Reader 7.
<http://www.adobe.com/products/acrobat/>.
2. Anderson, R. E. Social Impacts of Computing: Codes of Professional Ethics. *Social Science Computer Review* December 10, 4 (1992), 453–469.
3. How to Classify Works Using ACM’s Computing Classification System.
http://www.acm.org/class/how_to_use.html.
4. Klemmer, S. R., Thomsen, M., Phelps-Goodman, E., Lee, R., and Landay, J. A. Where do web sites come from?: capturing and interacting with design history. In *Proc. CHI 2002*, ACM Press (2002), 1–8.
5. Mather, B. D. Making up titles for conference papers. In *Ext. Abstracts CHI 2000*, ACM Press (2000), 1–2.
6. Schwartz, M. *Guidelines for Bias-Free Writing*. Indiana University Press, 1995.
7. Zellweger, P. T., Bouvin, N. O., Jehøj, H., and Mackinlay, J. D. Fluid annotations in an open world. In *Proc. Hypertext 2001*, ACM Press (2001), 9–18.