

StarCrash: 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 video games today, we developed *CSG*, or *Cooperative Spaceship Game*. *CSG* is designed as a fun prototype for communicative, interactive floor based games and demonstrates, how playing games at home can once again involve moving the entire body again - and not just your thumbs.

The two to three players' goal is the joint reaching of levels by performing tasks that are randomly given to each player. These tasks can then be carried out by the player himself or he can tell his partners to do it for him since they are closer to the task-subject.

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 revolutionised 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 Jörg Friedrich, a professional Game Designer at AAA Game Development Studio *Yager*, Willy Scheibel, a Game Development Lecturer at *HPI*, as well as Theresa Zobel, a representative of our target group, the casual gamer. From these interviews we learned that:

- The Game mechanics are the very most important part in the success of a game and should mostly be based on already proven concepts.
- Today's players have a low attention span and thus want to understand the game right away.
- Gamers always want to be challenged but not to the point where they get frustrated.
- Next to the challenge, gamers also need a purpose for their actions. This might involve a story or the immersion in a virtual world.
- Pleasing graphics are nice to have but not overly important, especially not photorealism.
- Most Gamers today like to play Cooperative Games rather than Single Player Titles.

This is why we started out contemplating different mini games and at some point even considered creating 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**.

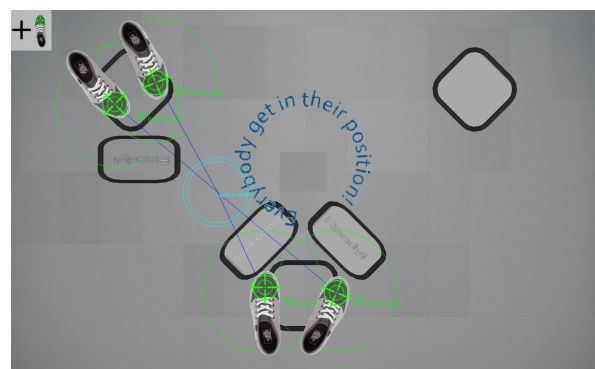


Figure 1. Here you can see the beaming area.

THE CONCEPT OF THE GAME

The game is set on a spaceship, which is on the edge of destruction and the players on earth are the astronauts to save

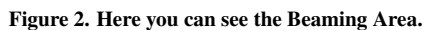
Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than the author(s) must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from one of the e-mail addresses listed on the top of this page.

HPI '15, Jan 2015, Potsdam, Germany
Copyright 2015 ACM #...\$ 15.00.

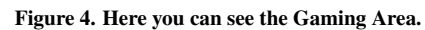
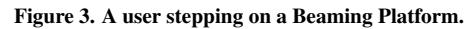
Since these widgets are not always close to the player who got a new task, he will often have to tell his partner(s) to do it for him instead. But a task is only active for a limited amount of time and if a task is not performed in time, it's game over. After a certain number of tasks the players will get to a new and harder level where all controls will change and the game goes on. Winning as such is *not* possible, the motivation is rather staying alive for as long as possible.

In our sample scenario two users A and B want to play a game of GAMENAME with the goal to reach the second Level. As the users enter the floor, they will start out in the *Beaming Area*, as shown in figure?.

1. Users walk to the *Beaming platforms*.
2. *Ready?*-Buttons appear and will change the to a *Ready!* after tapping on them.
3. The first player to step on a *Beaming platform* gets a *Start Game*-Button when everybody has tapped on their *Ready?*-Button.
4. That player can now start the Game by tapping on the *Start Game*-Button.



1. Players A and B follow the arrows to their instruction panels.
2. There, each player reads his instructions and sees their timer counting down.
3. Player A gets task X (see example Task in figureX).
4. Player B gets task Y (see example Task in figureY).
5. A and B try to perform their task by communicating or finding their widget.



- ## DESIGN

Our first idea was to create an application, which consists of various minigames that can be successively played against each other. The problem with this approach was, as Willi Scheibel pointed out in our contextual inquiry, that it doesn't allow users to interact with each other.

Standing in defined area as login mechanism

Initially we thought about having the user register to the system with an on-floor keyboard and then log in every time he enters the floor. We encountered in paper prototyping that it is really tedious for the user to type in his name, since tapping on small buttons requires precision and having the buttons spread makes them hard to use because it would be necessary to walk over them to get to the destination.

We decided to use an predefined area in which the user has to stand to start the game. The paper prototyping and the heuristic evaluation showed that this was easily recognizable. ***Here maybe be a picture of the beaming area***

Avoiding roles as game mechanic

Originally we came up with the idea of having different roles who are able to carry out certain tasks. For example role of the captain was assigned to the first person entering a beaming platform and was able to start the game. In our paper prototyping, most of the testers asked about the meaning of the roles. Explaining the concept at this time in the game would require adding a tutorial and make the game harder to discover.

In our final design we replaced the concept of roles by making tasks more specific.

Design Concept 4

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

CONCLUSION

Creating a game for a completely new Platform turned out as a bigger challenge than first anticipated, since most classic gaming concepts were not applicable anymore. But talking to both gamers and the professionals in the field gave us great insights into what makes a good game. These insights made us create GAAAMMMETTTIIITTTLLLLLEEEE, a game that we think of as really showing the possibilities for communication and involving of the whole body in Interactive Floor based games.

GAAAMMMETTTIIITTTLLLLLEEEE may not be a perfectly rounded, market-ready game, but can rather be seen as a fun prototype demonstrating the aforementioned possibilities.