

CSG: A communicative Game for Interactive Floors

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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**.

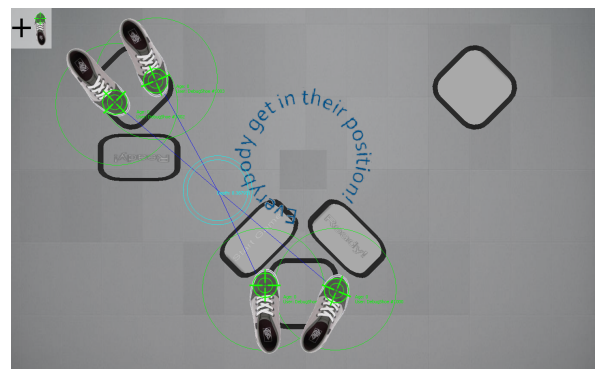


Figure 1. Here you can see the beaming area.

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

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the ship. They have to get on the beaming platforms to beam onto the spaceship, where they get their tasks. These tasks involve flipping switches and pressing buttons, which make up the control bridge of the ship.

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.

WALKTHROUGH

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?.

The Beaming Area

1. Users walk to the *Beaming platforms* and want to start our game.
2. To start the game they have to enter one the circle while the label in mid is rotating *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. After it the screen will change to our *Gaming Area*.

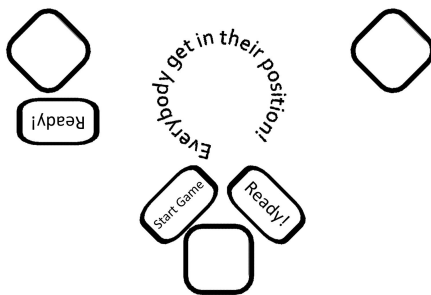


Figure 2. Here you can see the Beaming Area.

The Gaming Area

1. Players A and B mention the two highlighted task panels behind them and turn around.
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).

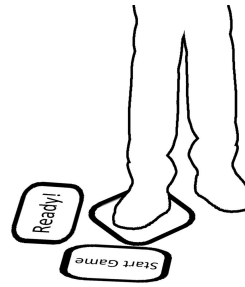


Figure 3. A user stepping on a Beaming Platform.

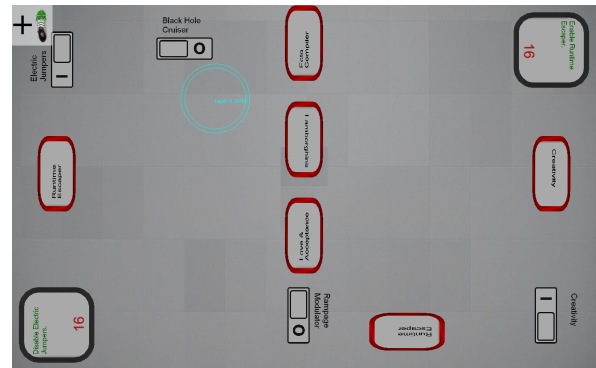


Figure 4. Here you can see the Gaming Area.

5. A and B try to perform their task by communicating or finding their widget.
6. After a task has been performed before the corresponding timer has counted to zero, a new task is generated and the timer is reset.
7. Repeat steps 3. to 6. until a new Level is generated and the players have reached their goal.

DESIGN

Cooperation as a Principle

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.

So in our new design we integrate cooperation as game principle by adding tasks which have to be performed by both users. Moreover we use the spatial distribution of our tasks to encourage interaction between the players, rather than having them perform only their own tasks.

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.

Explaining system status with real world

As we started designing our game, we used menus and text fields to let the user start a game or change a level. This Approach seemed to work out quite well in paper prototyping, since the change of level for example would anyway require some time to reconstruct the floor. But as we started testing our application on the floor the change of system, especially the switching between two scenes did not appear natural.

As a result we added areas with a ladder texture to explain the switch to the next level. Moreover we use beaming platforms as login mechanism instead of a introduction dialog to have a consistent appearance in our whole game (hier will ich sagen, dass wir alles was der User sieht durch unsere Welt erklren statt durch Dialoge; wenn jemandem ne bessere Formulierung einfllt gerne austauschen)

Having a distinct exit control

When faced with the problem how the game should be terminated, our first solution was to let the user simply walk off the floor and wait till the timer runs out. While heuristic evaluation, almost all of our testers asked us how they can end the game. This showed us that having no visual representation to use some functionality of the system is not very discoverable.

To solve this problem we introduced a distinct exit button, which can be pressed to ensure a controlled ending of the game. This is important because now the user has full control over the system at any time.

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 GAAAMMMETTTIIITTTLLLLLEEEEE, a game that we think of as really showing the possibilities for communication and involving of the whole body in Interactive Floor

based games.

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