Touchline

feel the game

My Design Journey

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How can we enhance the live matchday experience for visually impaired spectators?

"4 out of 10 visually impaired individuals feel cut off from gatherings and events around themselves"

- information from the NCBI

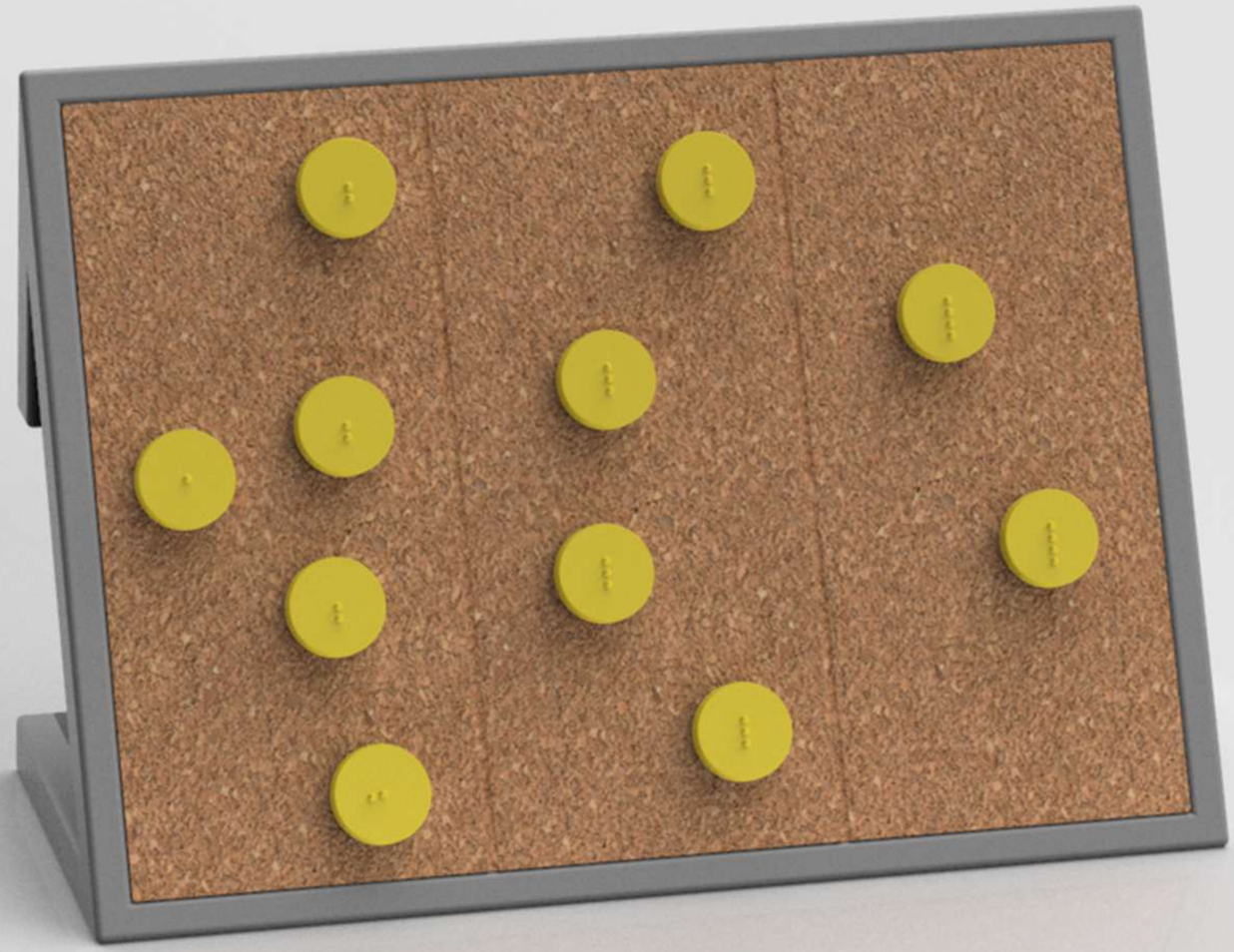
Touchline enhances sporting experiences for the visually impaired by allowing them to interact with a physical, tactile board product. Whether they are at home or in the stands, **Touchline** encourages everyone to get involved through 3 seperate modes: **online**, **offline** & **live**.

By offering these different modes, it aims to encourage visually impaired individuals to to attend live matches over a period of time, being part of the atmosphere, in confidence.

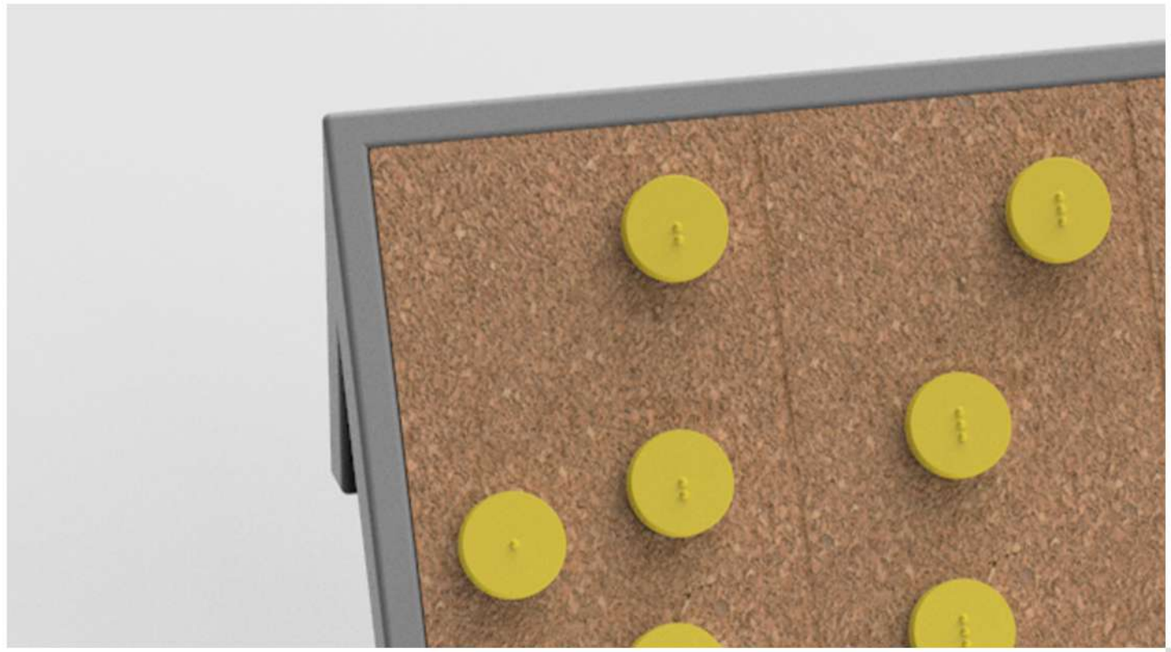
How I solved this

Touchline acts as an interactive board that allows the visually impaired to **amplify their live matchday experience**.

By encouraging the user to feel the game through the **sense of touch**, which was otherwise unused, it allows the the user to **enjoy the game in a new way**.



Key Features



Textured Surfaces

The pitch surface is covered in a dense cork material to invite the user to feel the board. It is easily identifiable over the smooth plastic housing of the board.

Identifiable Components

Each magnet is equipped with braille lettering along the sides, as well as quick-access numbering on top of each piece. From goalkeeper to attacker, the user will know what each piece is.

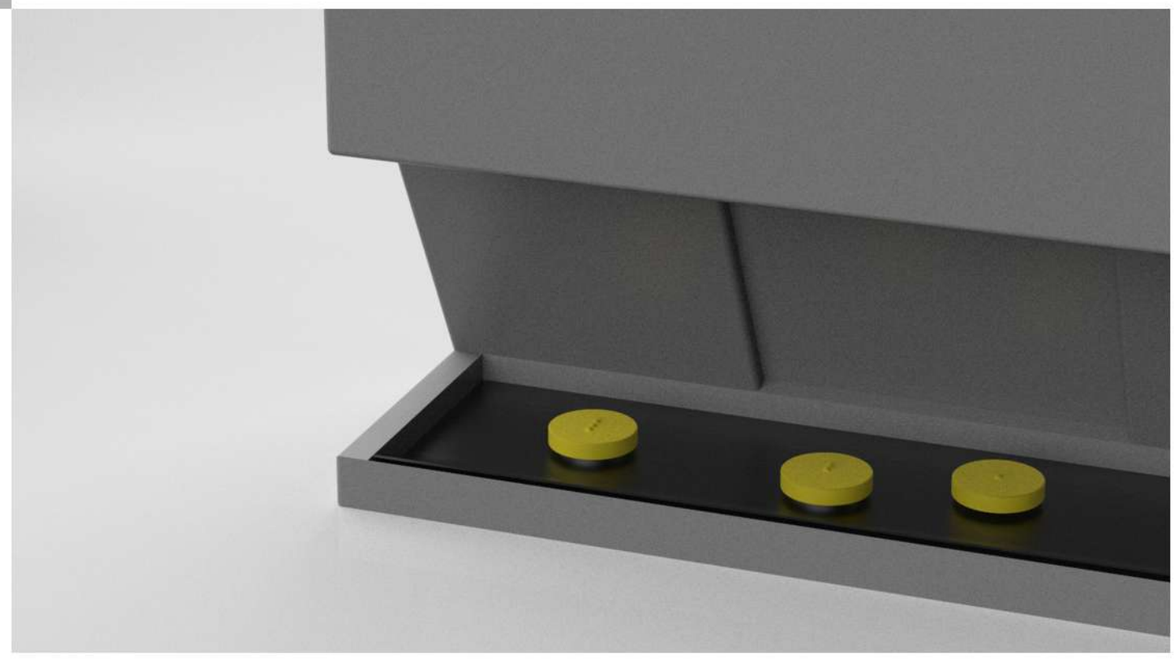
Key Features

Adjustable Steepness

Whether you are sitting at a table or resting the board on your lap, enjoy the comfort of adjusting the steepness by simply rotating the board.

Easy Magnet Storage

An extra magnetic sheet was added to the back of the board. When you need to add or take a piece off, simply tap it on the magnetic sheet to keep it in place.

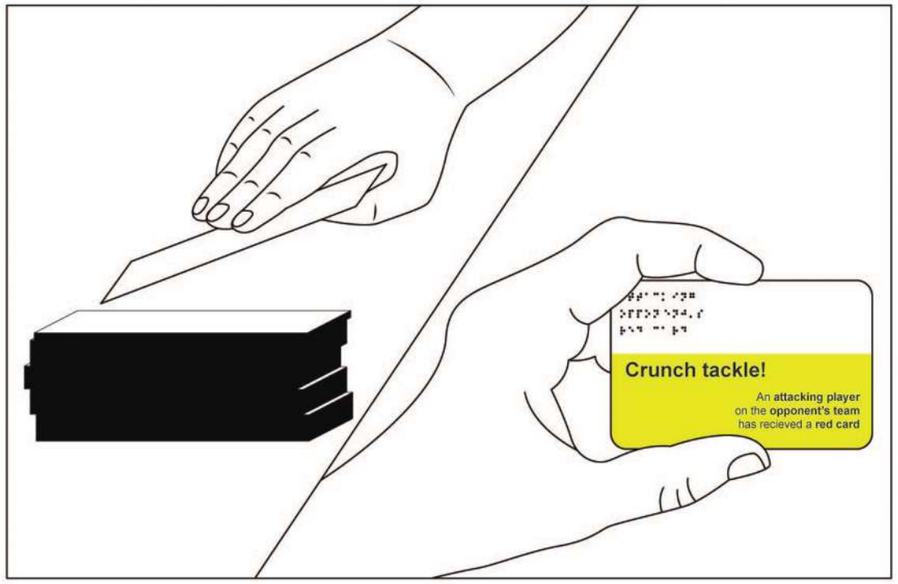


Offline Mode

1

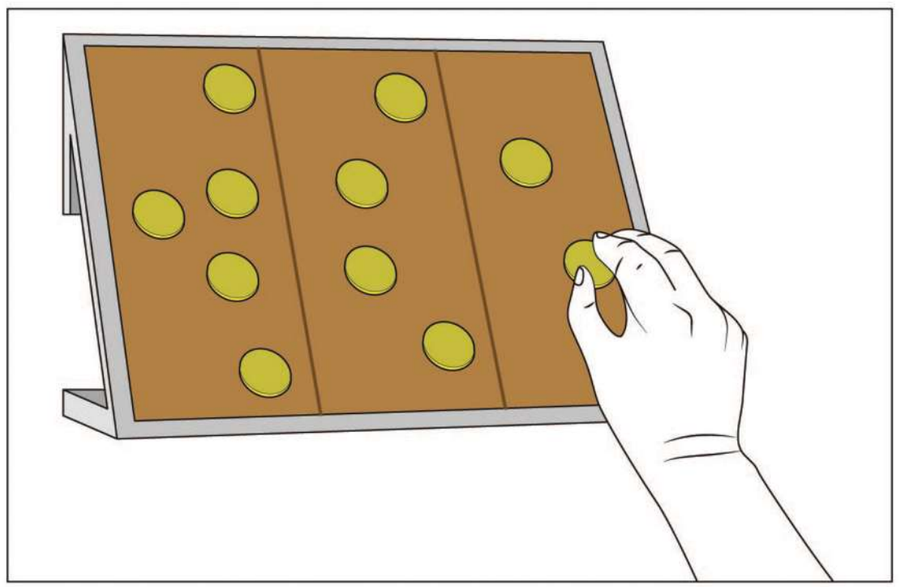
Play against your friends

2



Pick up a card and read
about the match scenario

3



Adapt to the scenario on the card by
moving the players on the board

4

Guess your opponent's movement to win

Online Mode

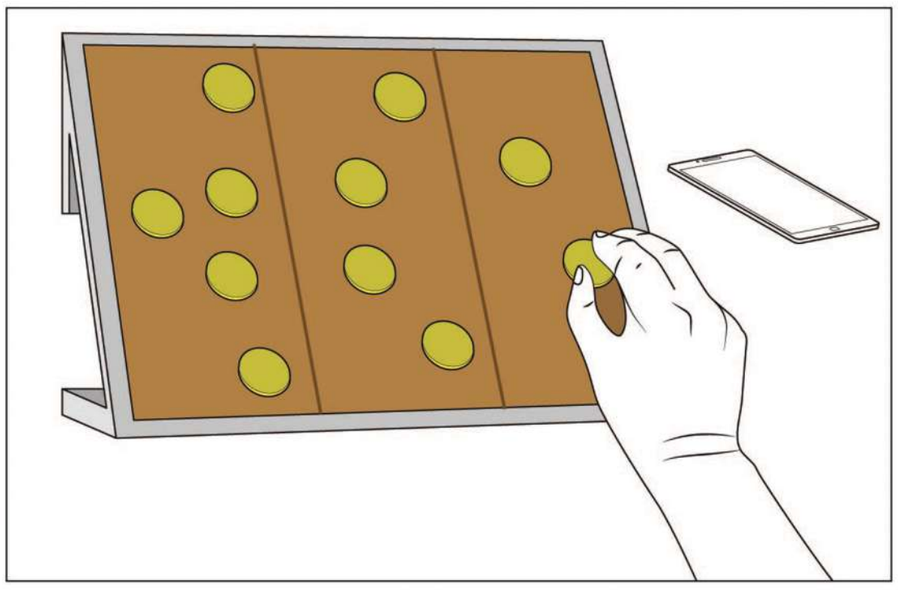
1

Use the board from the comfort of your own home

2

Access an audio file, which is available on the internet via streaming services

3

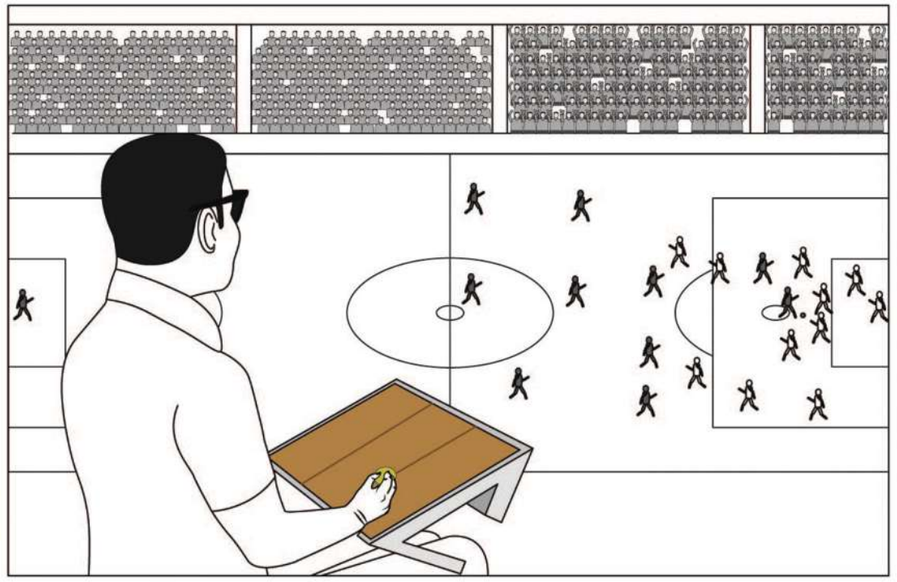


Move player pieces, whilst listening to the audio descriptive commentary, to learn more about tactics

Live Mode

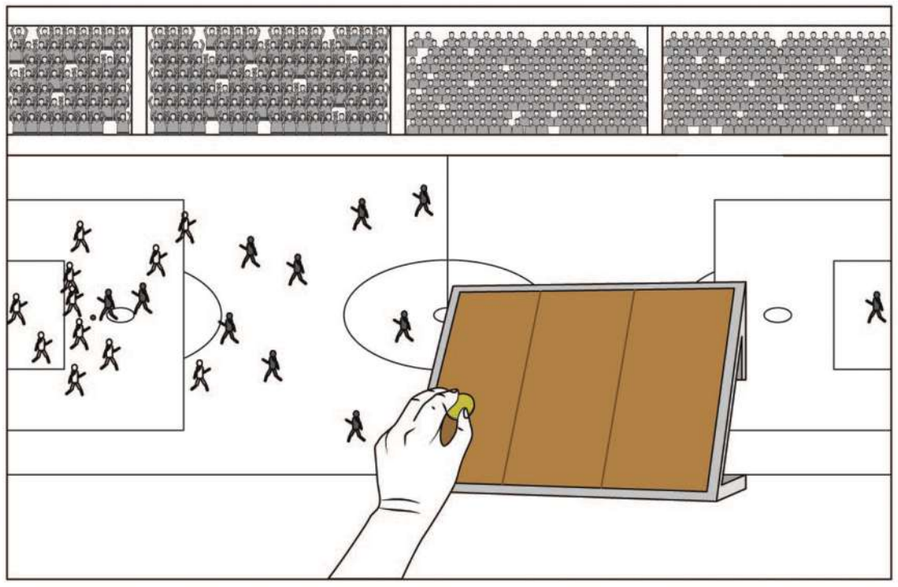
1

The commentator provides an audio
descriptive commentary service at the stadium



2

The user rests the board on their lap,
using the ball piece to map out the game

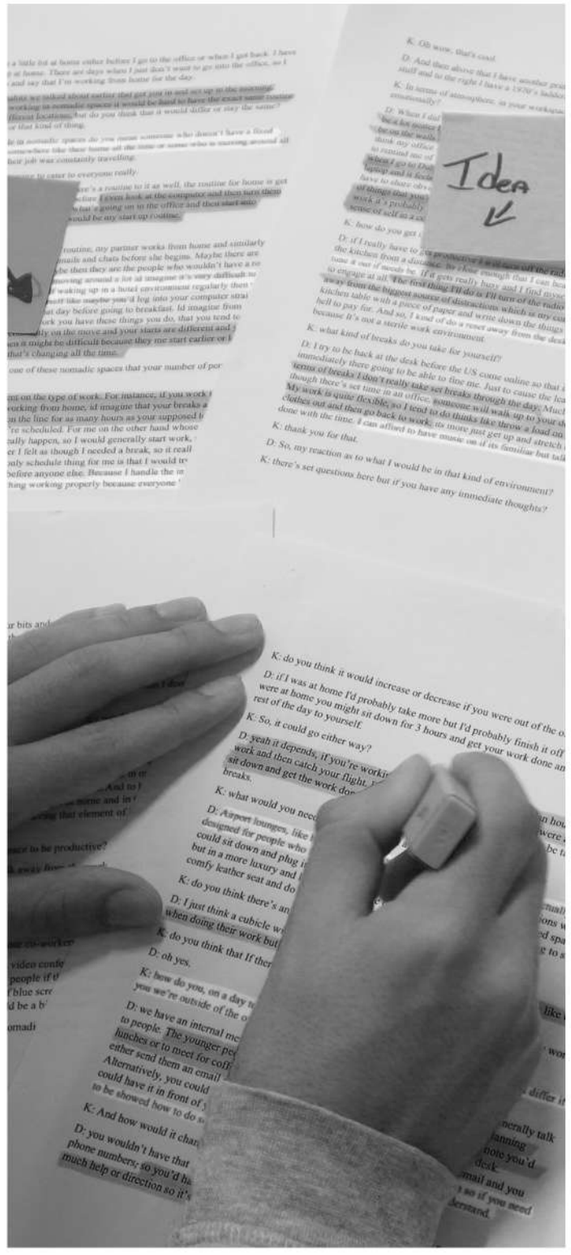


3

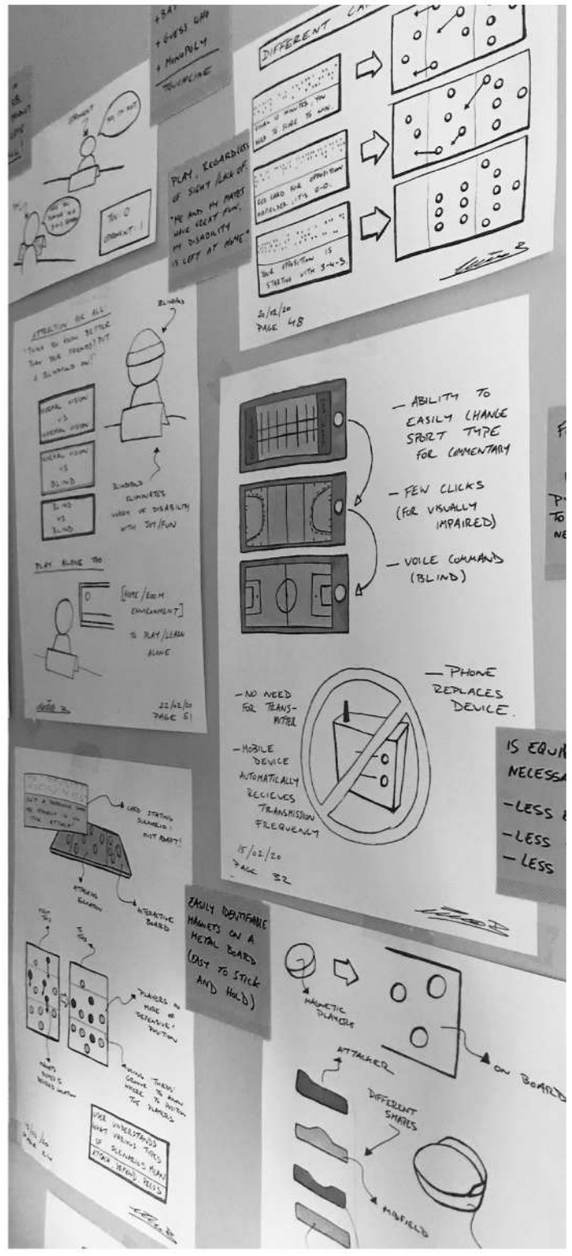
The user moves the ball piece on the board
simultaneously with the developing commentary

My Design Process

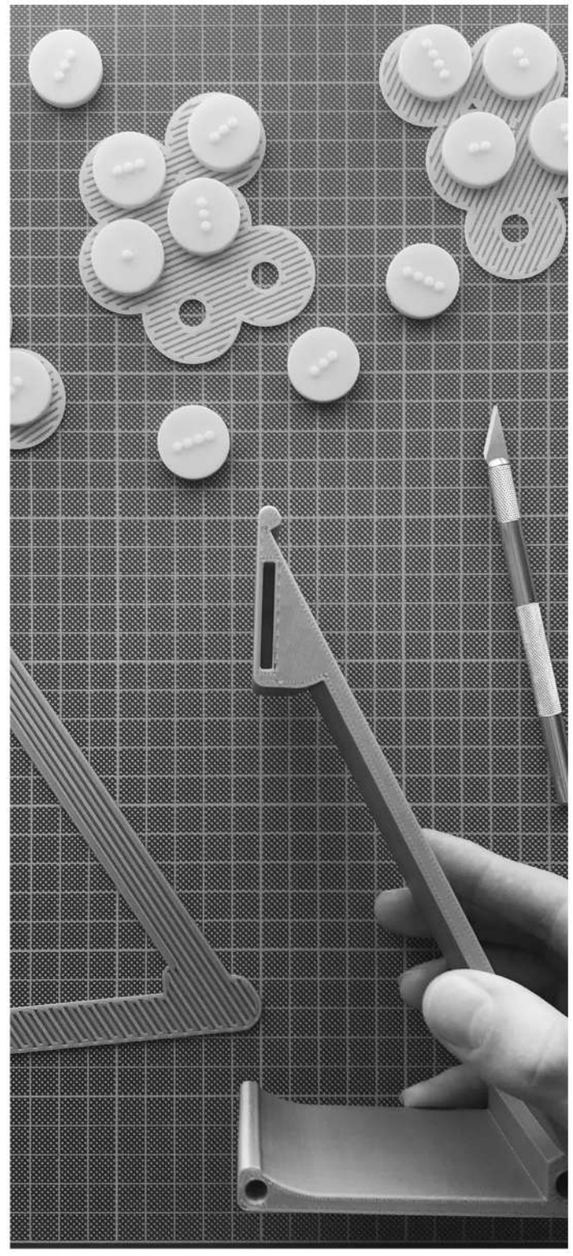
Empathise



Define

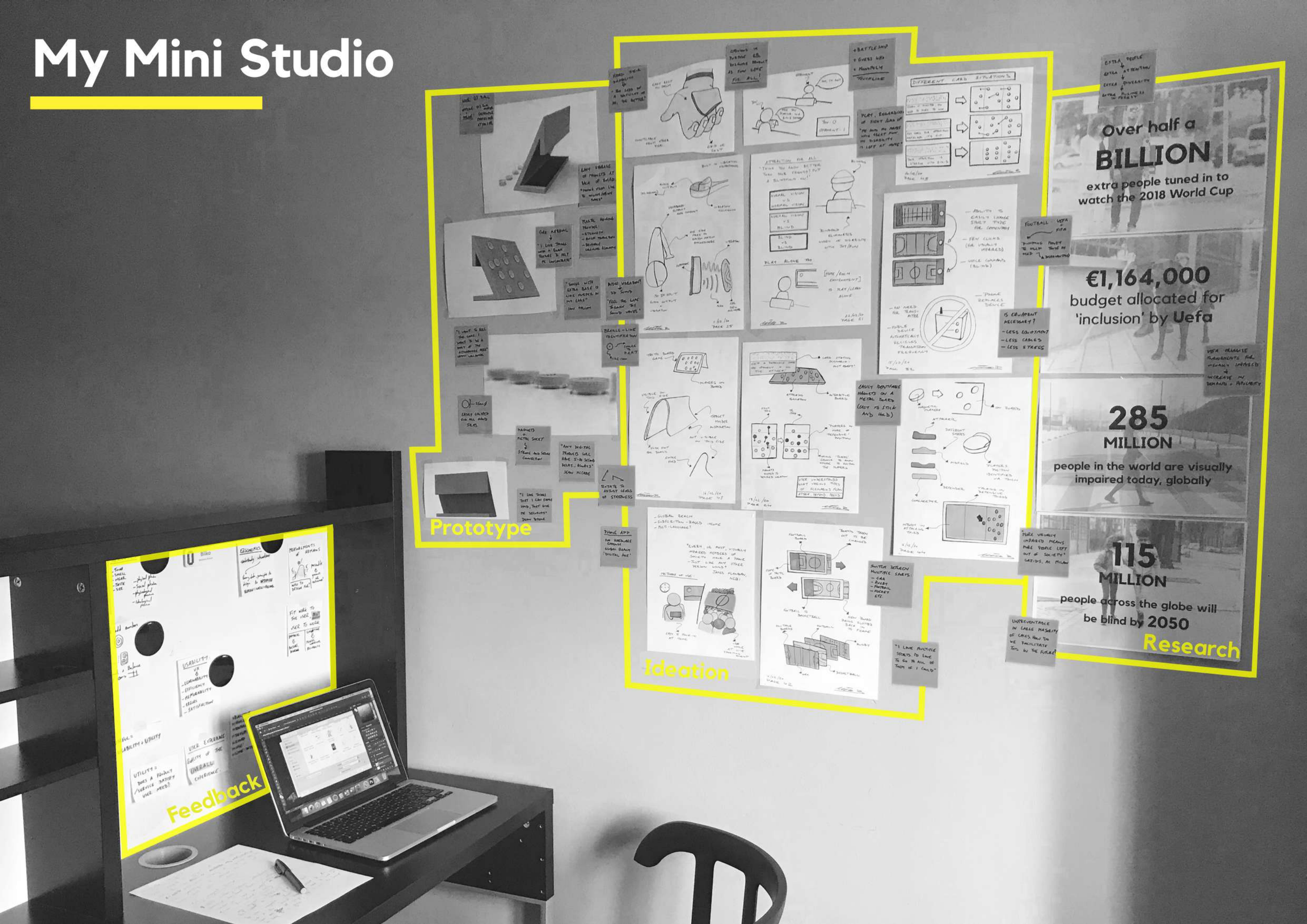


Ideate



Prototype & Test

My Mini Studio



User Investigation

Key Findings

My research began with observing and taking note of any interesting behaviours found in the visually impaired spectators, from meeting outside the ground, to leaving once the game had come to an end. I conducted interviews, with the focus of getting to know the critical user pain points. Following this, I put myself in the user's shoes and engaged in the service whilst wearing a blindfold.

The results of my research showed that the service provided is purely audio-focused. A common observation noted was that visually impaired spectators show a tendency to hold an object in their hand to provide feelings of comfort at a live game. Through interviewing, a common insight found was that rougher materials provided a complete opposite type of sensation and emotion when compared to smother materials would.

Market Research

20%

steady annual increase in the number of children globally who get a visual impairment, since 2011.

3/4

visually impaired individuals on an international level, are not fully dependent enough to go to work.

200%

increase in the number of blind people globally. From 36 million in 2019 to 115 million in 2050.

Trends & Drivers

Before proceeding to the ideation phase of the project, I decided to research the current market and take note of common trends occuring with products that are specifically designed for audio descriptive commmentary and visually impaired users in general.

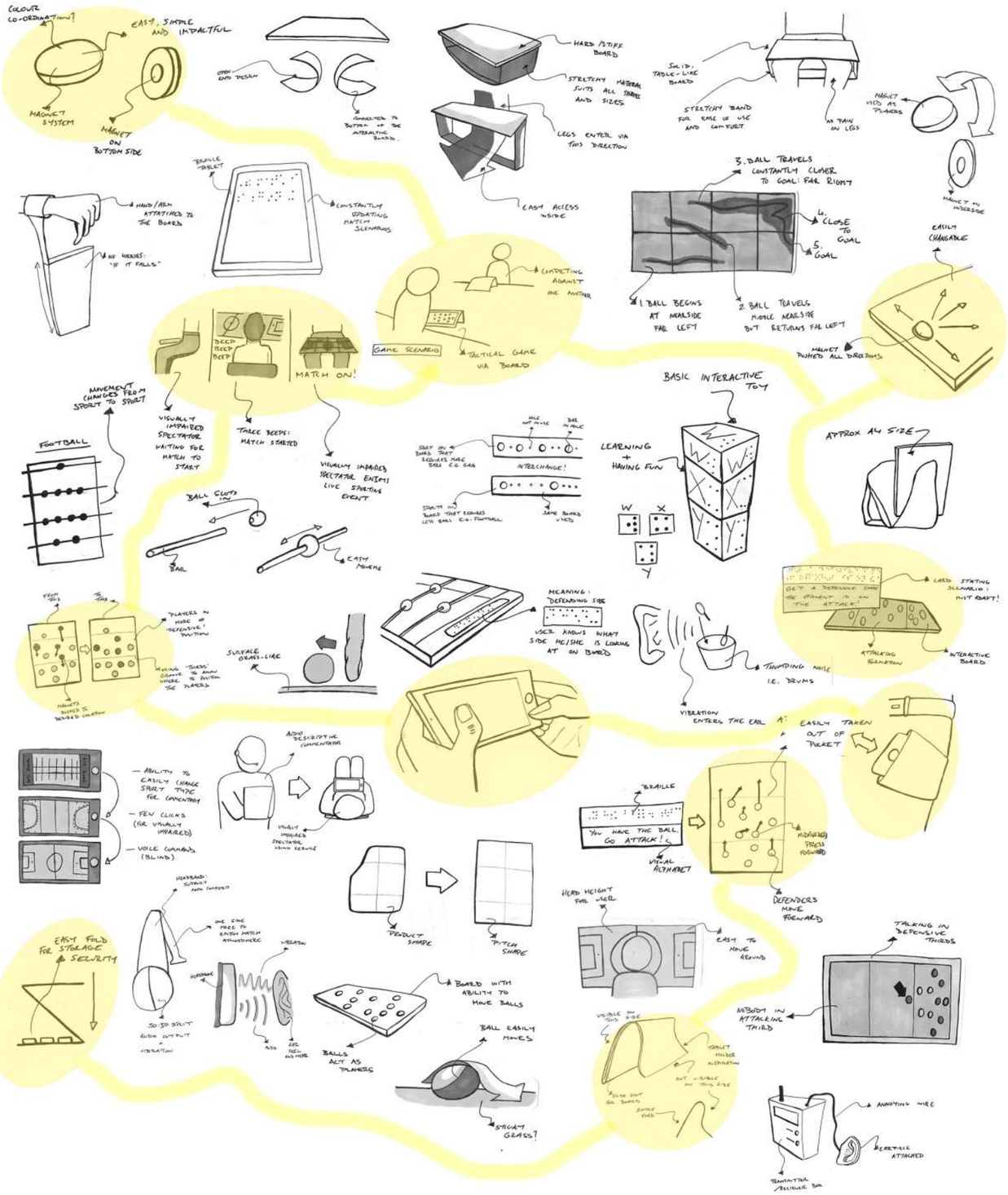
Surprisingly, I observed a lack of products designed for visually impaired spectators at live matches. Products only revolved around audio, with the only sense used being hearing. A visually impaired individual may have their sense of sight taken away, but there are still four other senses that are equally as important to feeling the live match and atmosphere.

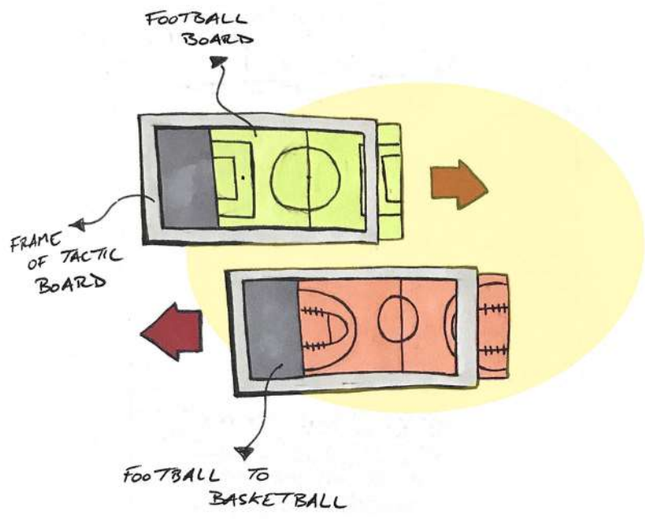
My aim is:
to incorporate more senses in to the visually impaired individual's matchday experience.

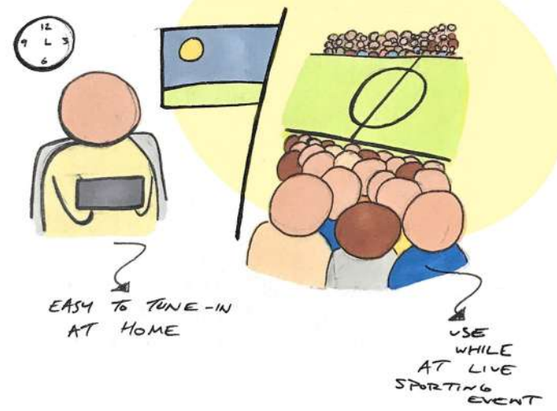
To go from just this..

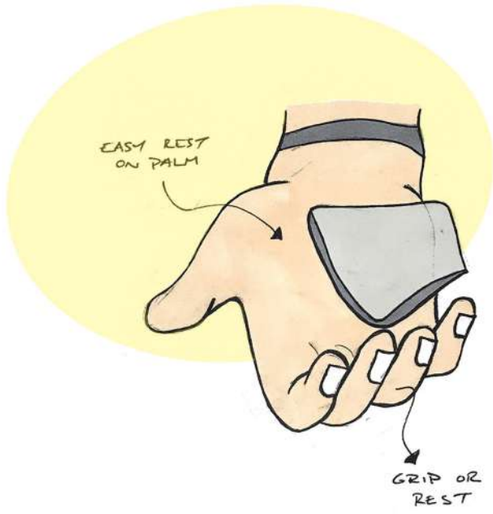
..to this

Concept Ideation







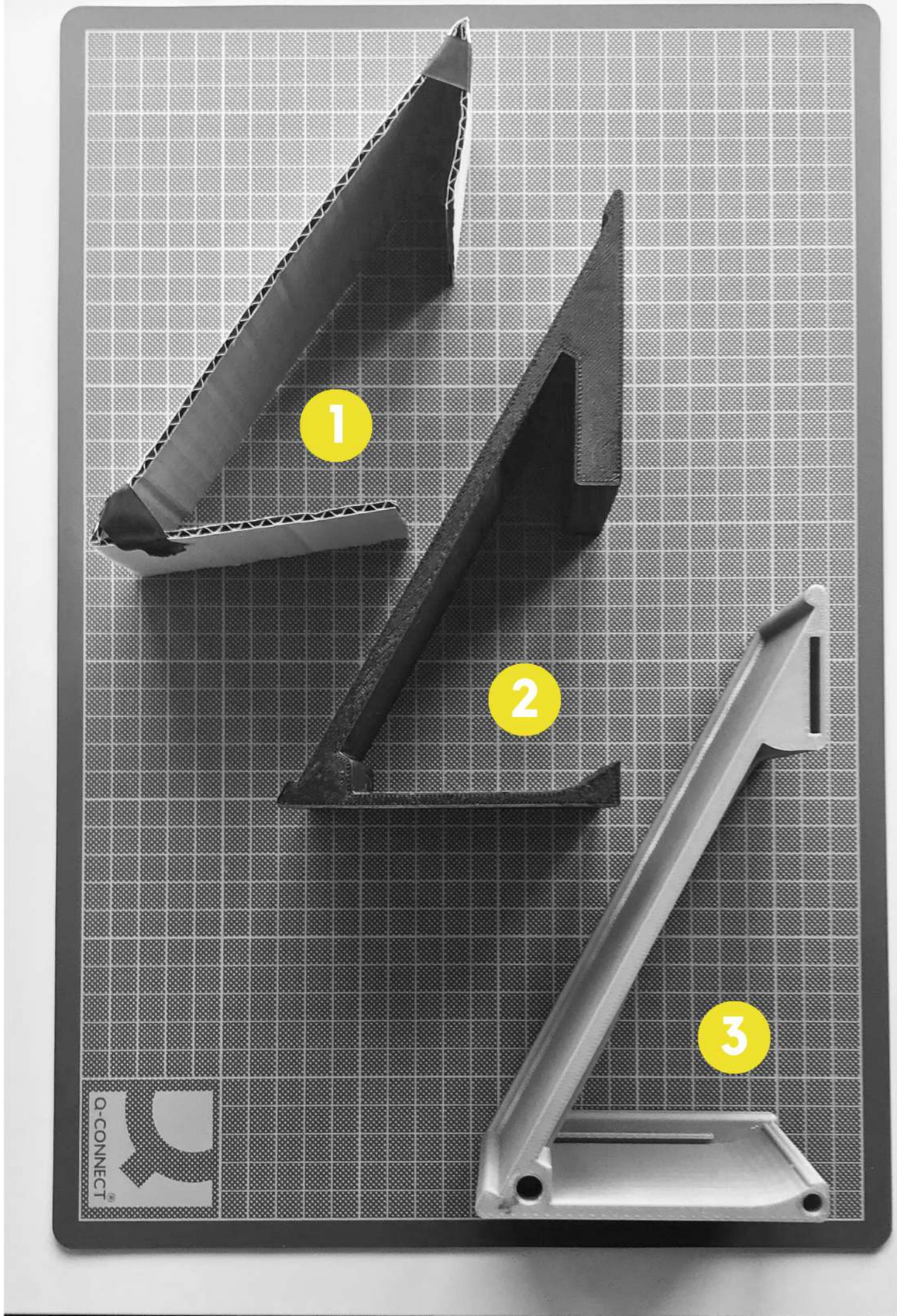


Prototyping

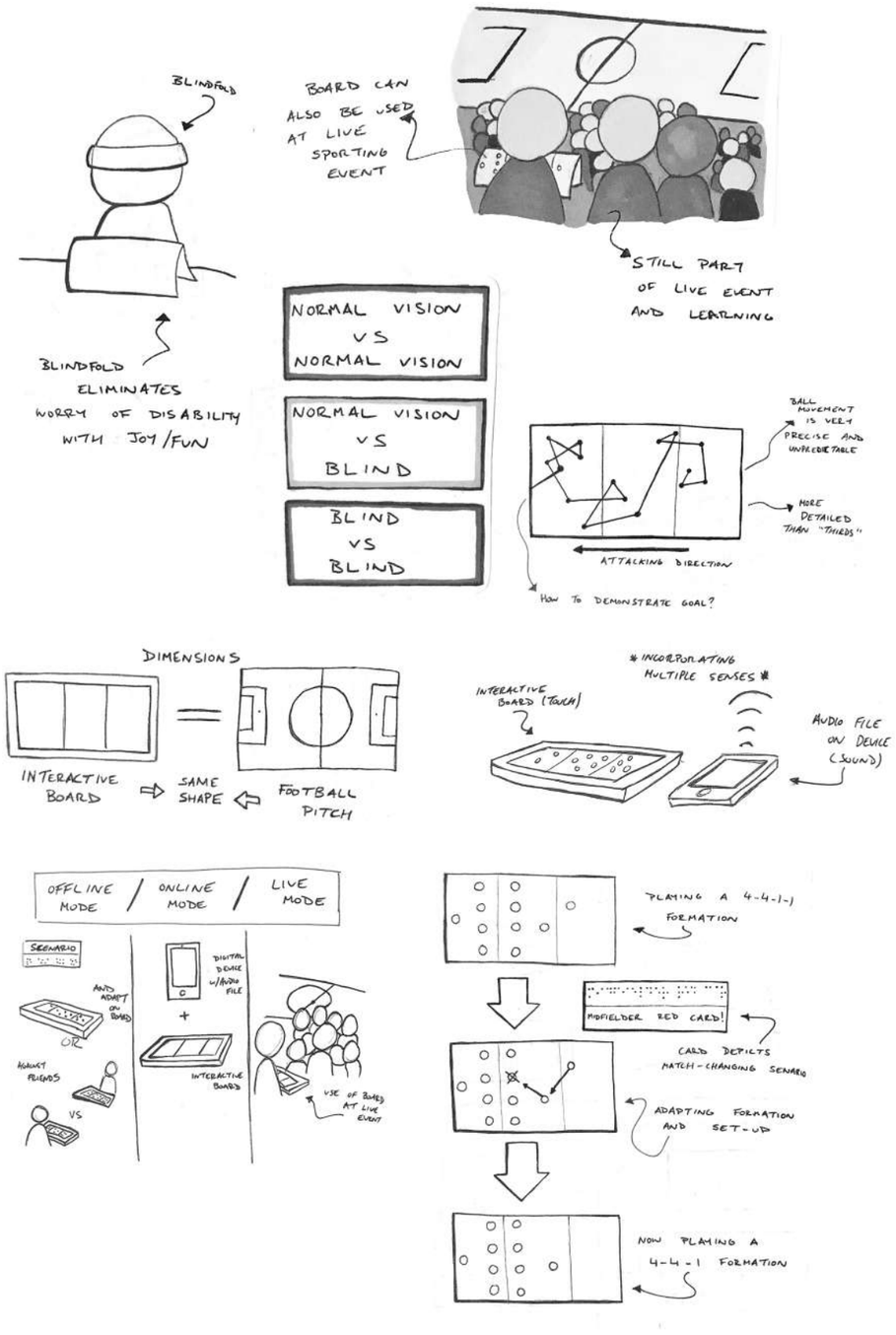
I began to prototype with standard cardboard, which was crafted to the optimal shape, angle and size of the board required to fit the majority of users hands.

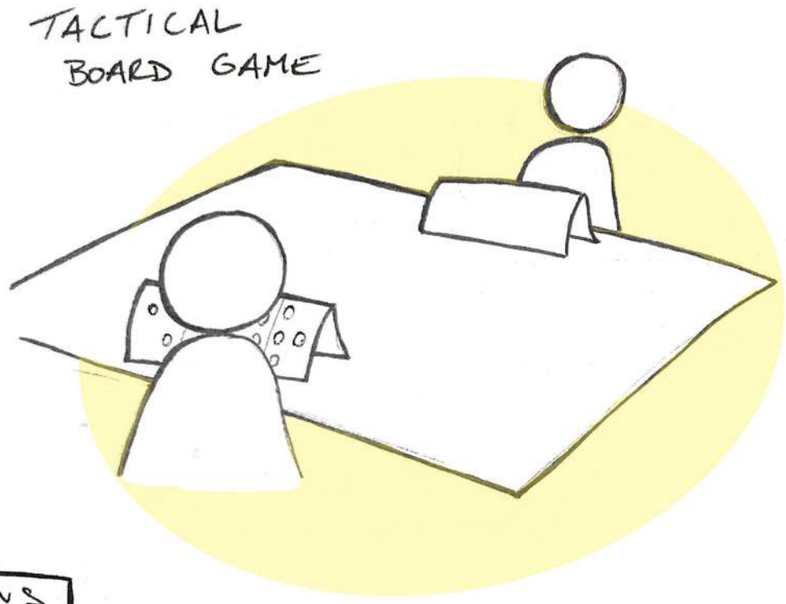
Following this, I had the opportunity to 3D print the plastic housing of the board in order to get a feel for the dimensions. It showed that there was a restriction on the acute angle when trying to rest the user's hand inside.

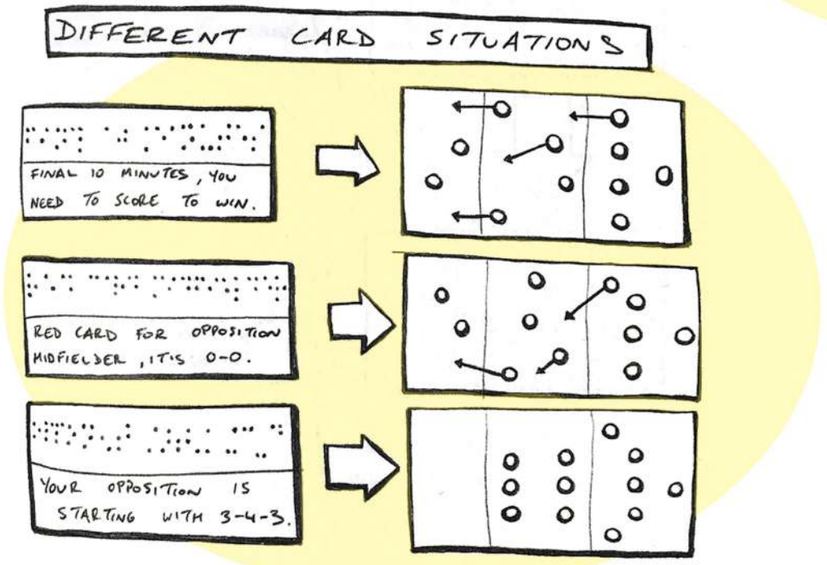
The final prototype has amended the issue on the previous board, allowing for an unrestrictive movement of hands with maxium grip for the user. Additionally, the final colour for the plastic housing was decided as grey.



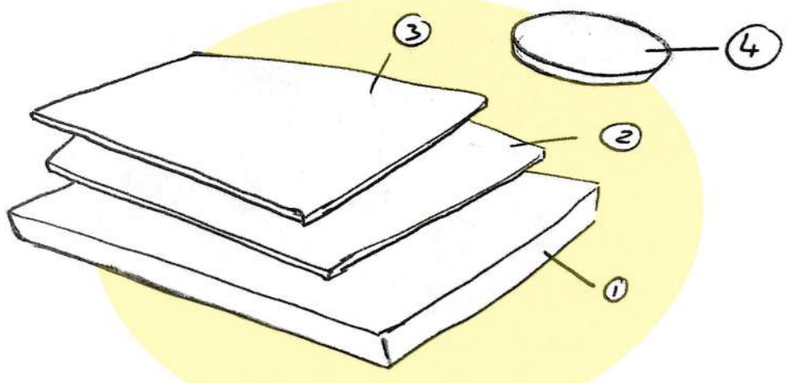
Further Development







- WOODEN BOARD (1)
- THIN LAYER OF METAL (2)
- GREEN PAPER SURFACE (3)
- MAGNET (4)



User Testing

So Covid-19 Happened

There was a lack opportunity trying to get some responses from groups of visually impaired individuals because of the national pandemic restrictions that were in place. All resources were closed and freedom of movement was restricted to just a 2 kilometer radius from home. I understood, adapted and executed the best possible alternatives that I could possibly make happen in these strange times.

I sent prototypes out, via post, to individuals who were more than happy to help and give their feedback. This was vital to ensure that the product size, ergonomics and tactility were all designed to the highest standard for the user.

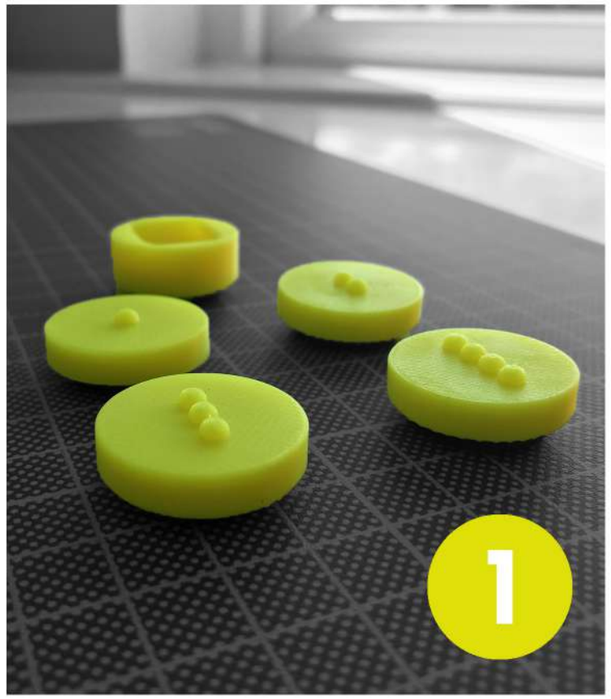
Final Prototype

1. The magnets are designed with the user in mind. A quick alternatve to braille is used on top of the plastic housing to identify each player position on the pitch.

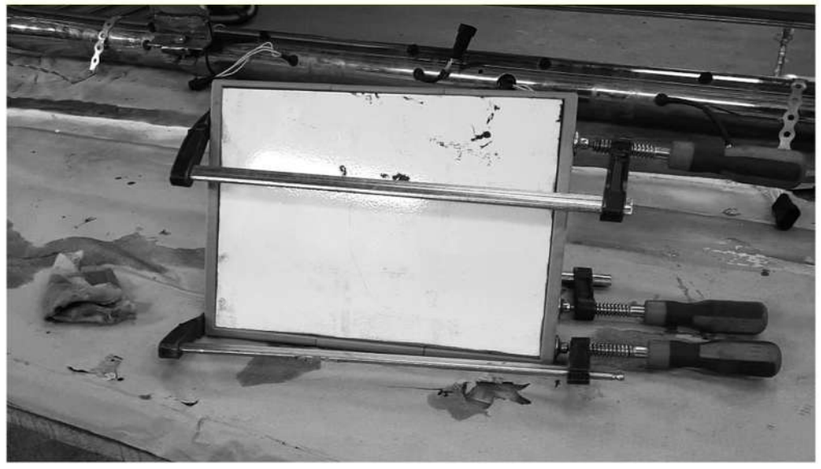
2. The cards depict match-like scenarios where the visually impaired, or normal sighted individual can take in information through braille or standard lettering.

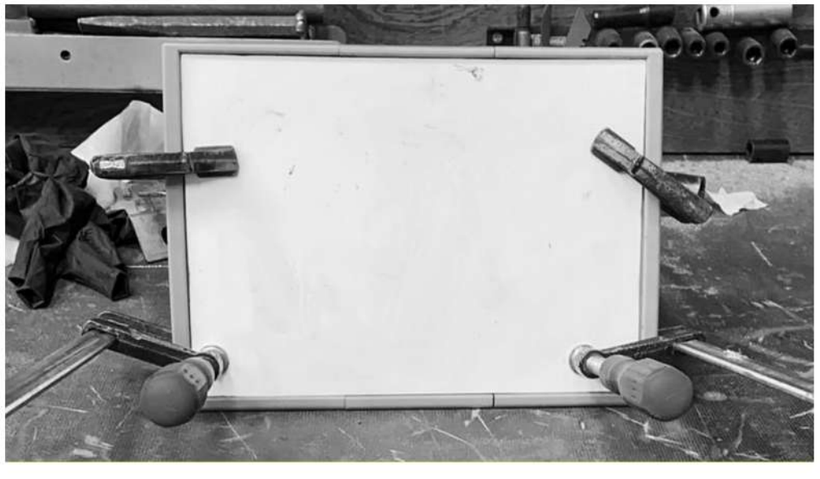
3. The board is created with a plastic housing, a middle layer of metal and topped with a cork finish to provide great tactility.

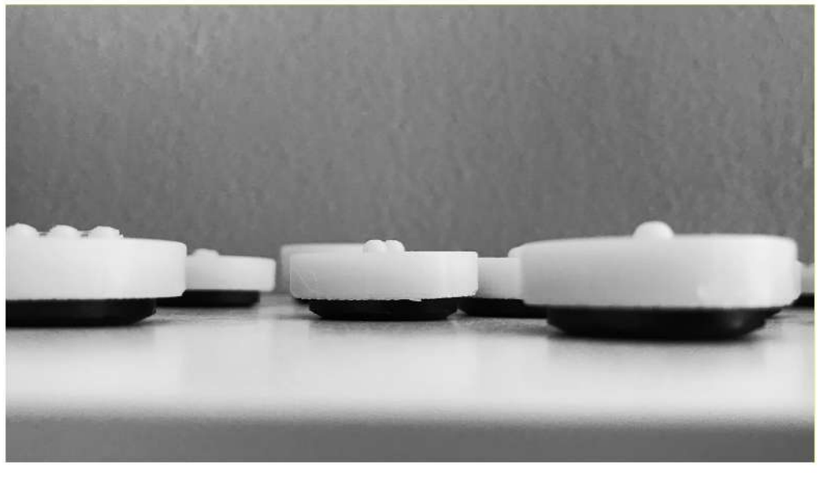
An audio file is available on Soundcloud, and other audio-streaming platforms as an add-on to the 'online' version of Touchline.

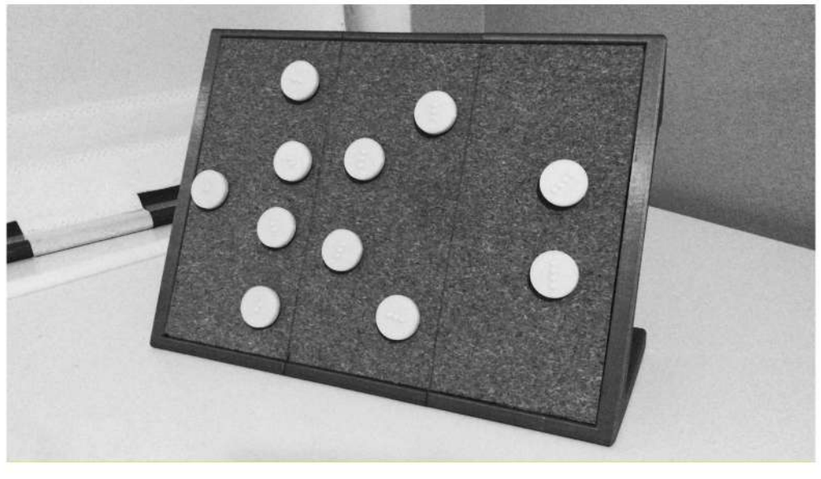


Prototyping Process

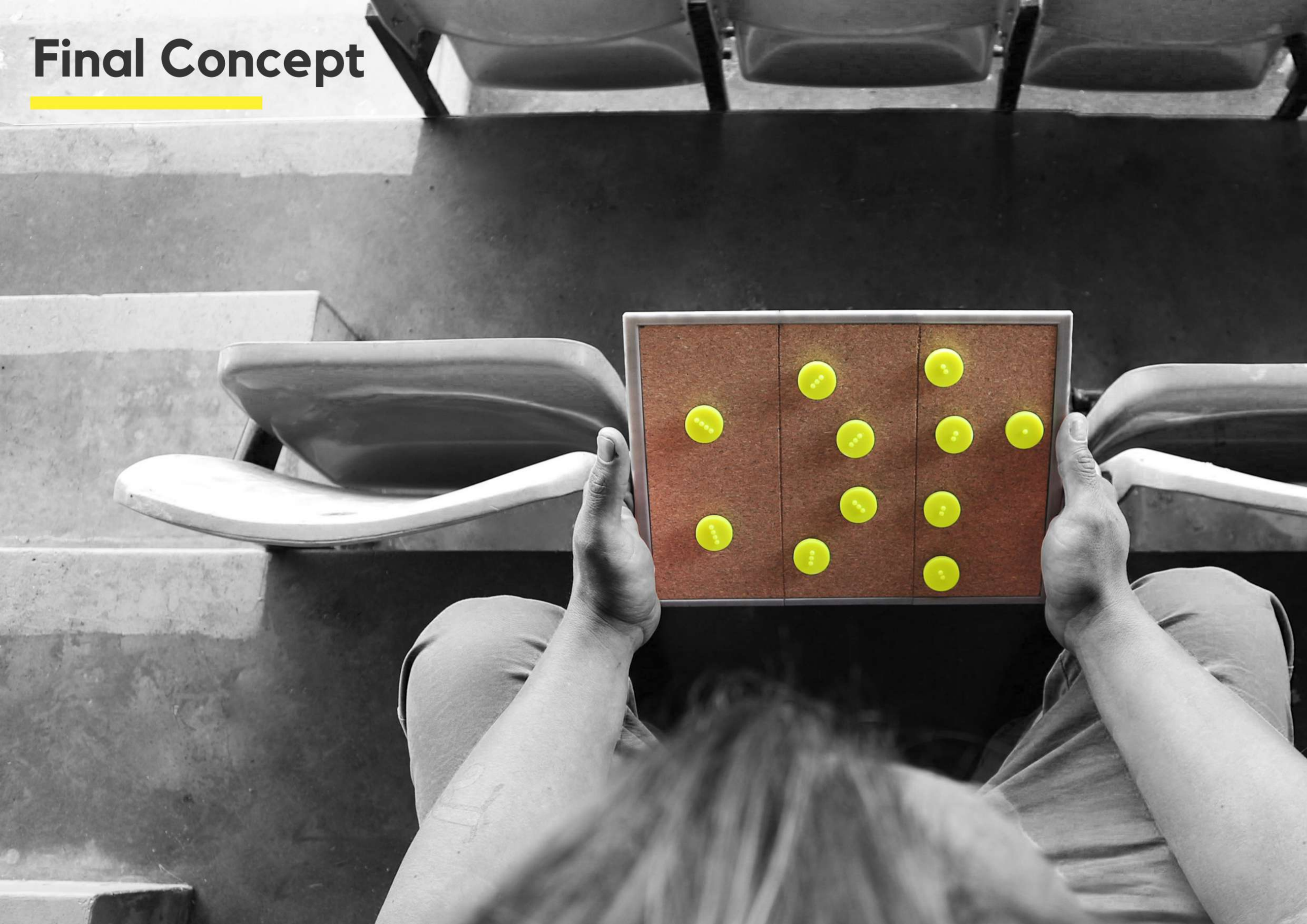








Final Concept



Thank you for looking!