

Dreamwaves

See the world through your ears.

Awards



Top 5 VCÖ Mobility prize 2019



Top 20 MyGalileoSolution 2020 - EUSPA



Top 100 Best Austrian small companies 2021



1st Prize Social Innovation Tournament 2022

Accelerators Selection:

 HiReach Startup Lab

BridgeforBillions

PLUGANDPLAY JAPAN



Verbund X
accelerator

Orientation is a
fundamental
challenge...



... and is
especially hard
in specific
situations.



Independent mobility is a challenge for blind people



PHYSICAL

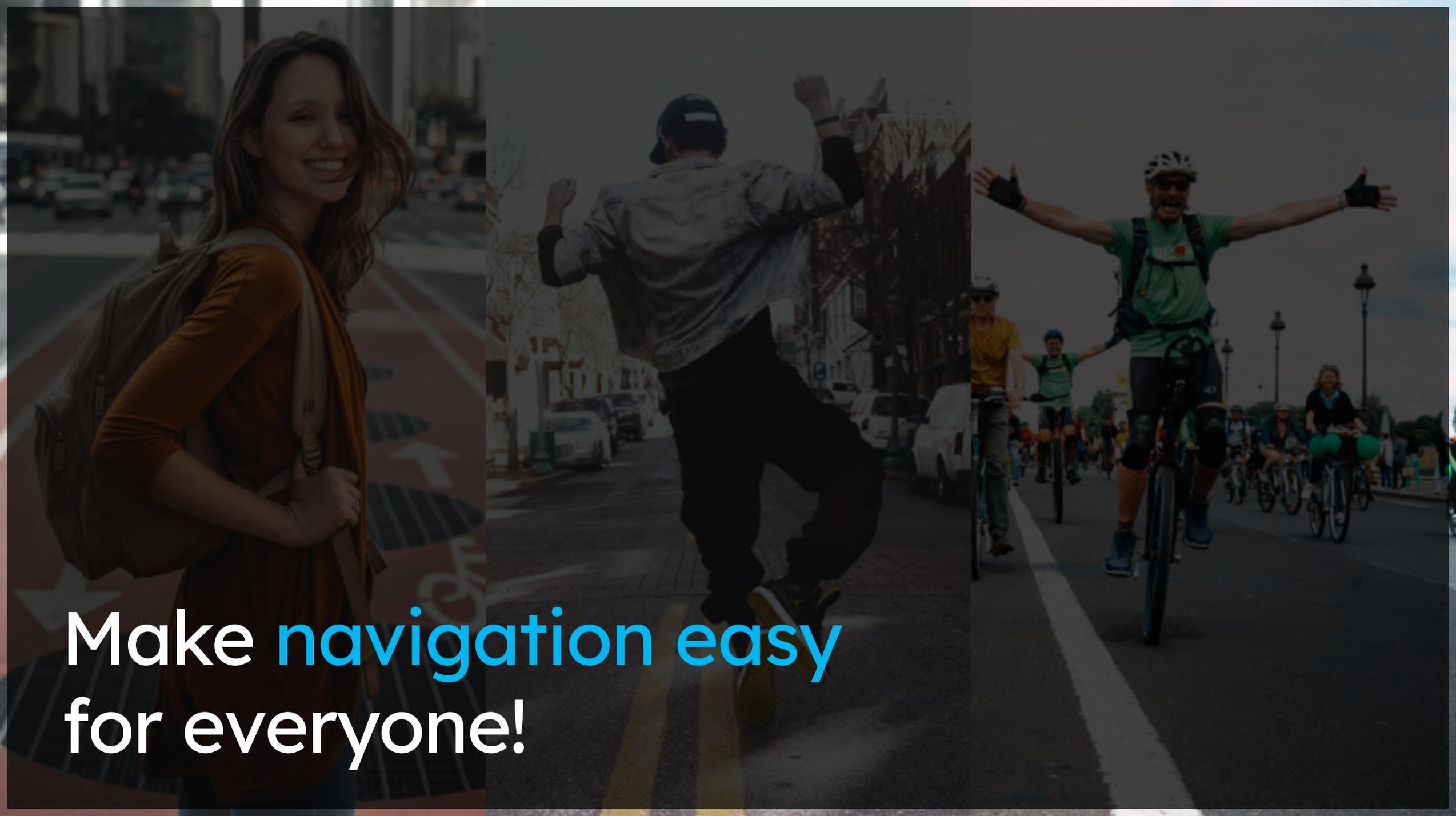


MENTAL



UNEMPLOYMENT





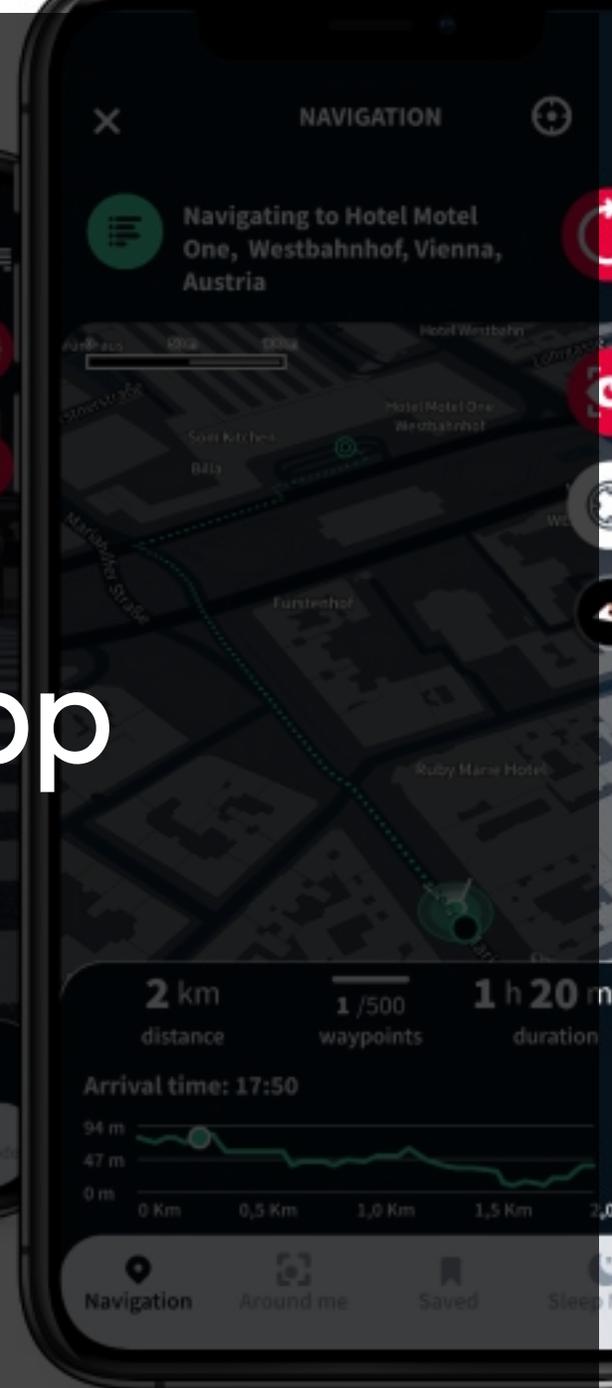
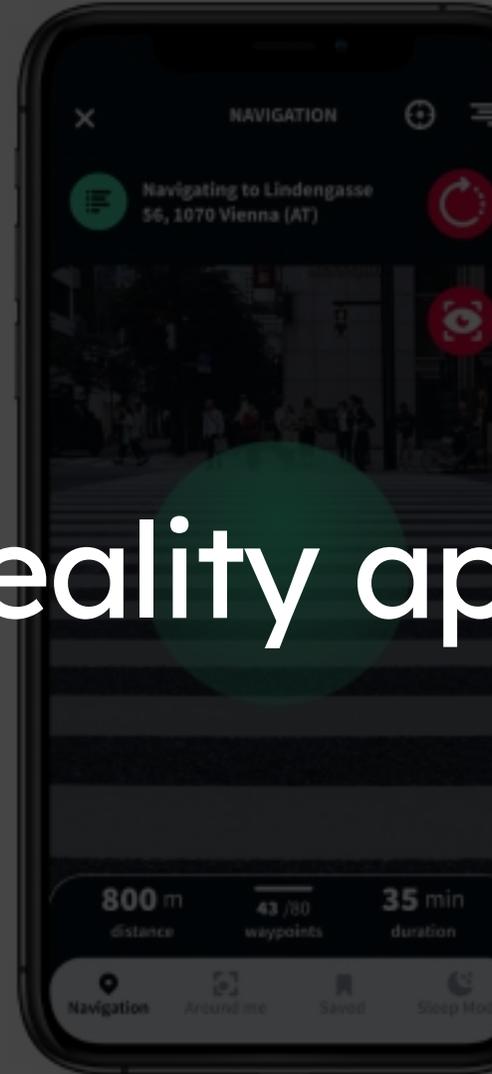
Make navigation easy
for everyone!

waveOut

1. Audio augmented reality app

from
Dreamwaves

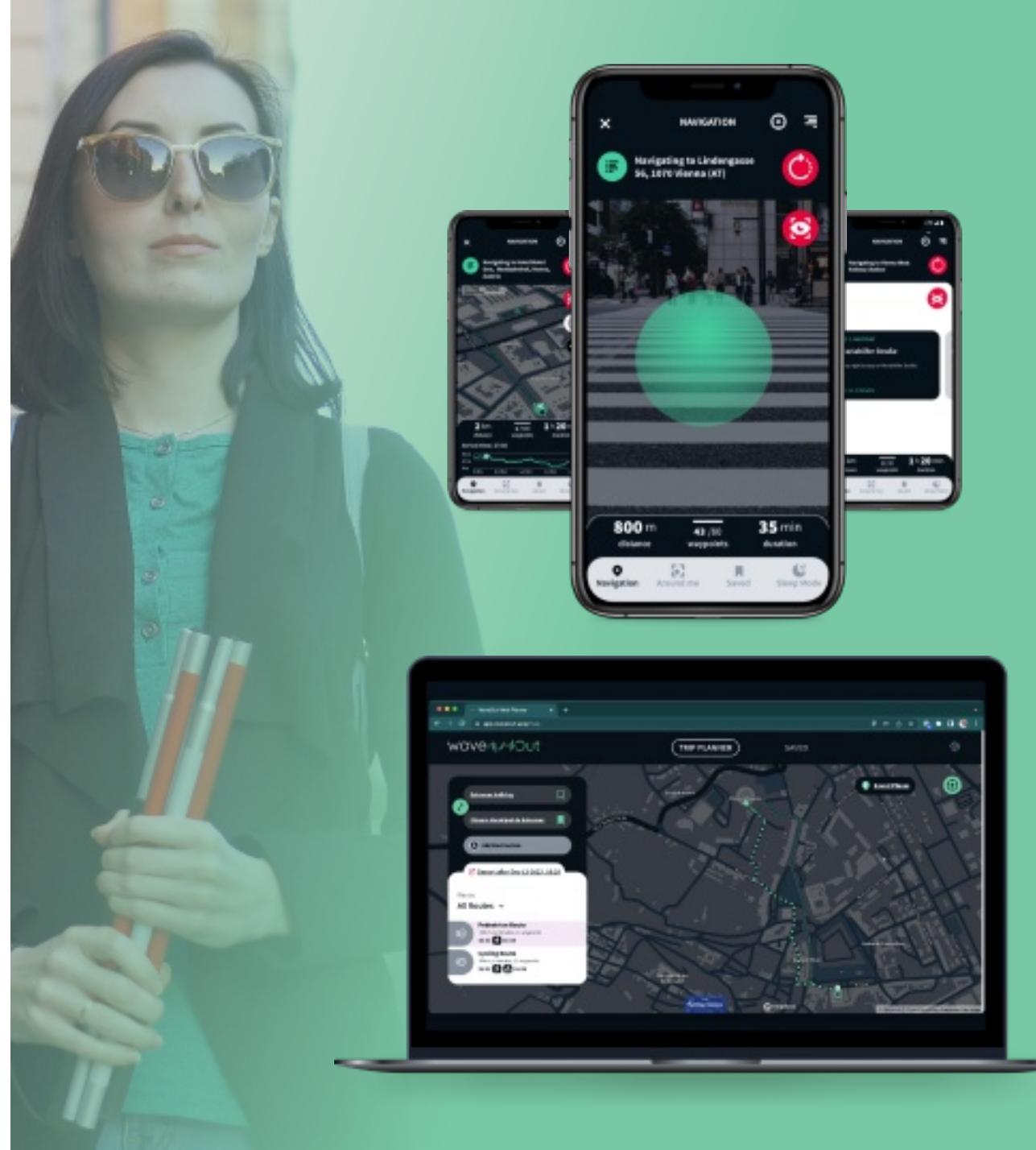
Dreamwaves



The audio augmented reality navigation app



waveOut



Sound cues are placed along the user's route.

2

3

1

1 of 36



Sound cues are placed along the user's route.

2

2 of 36

3

1

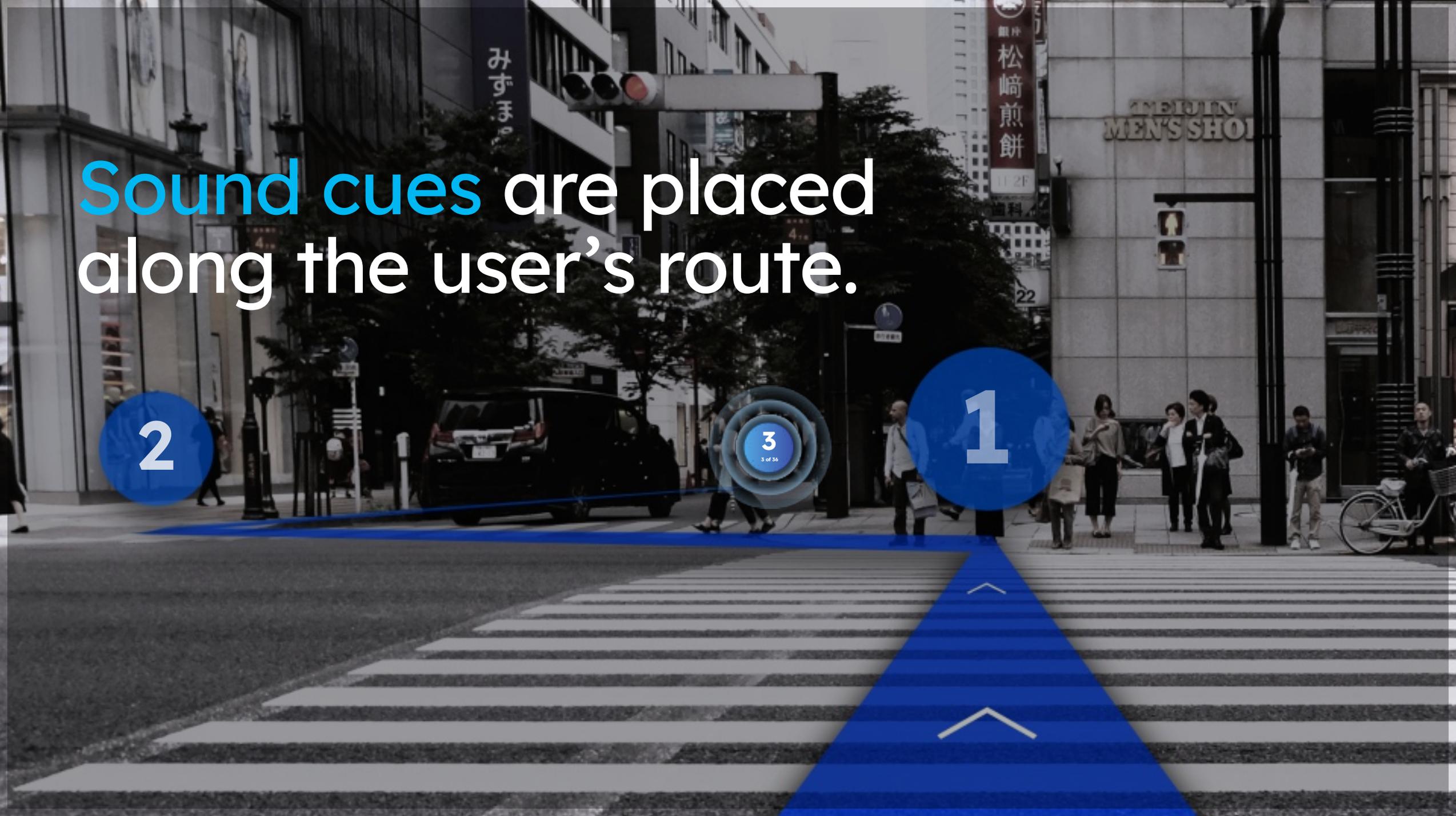


Sound cues are placed along the user's route.

2

3
3 of 36

1



We co-design
directly with the
user..

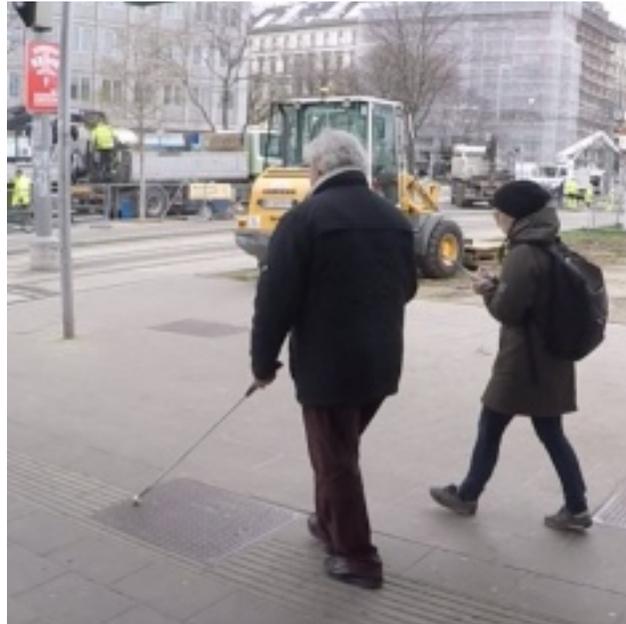
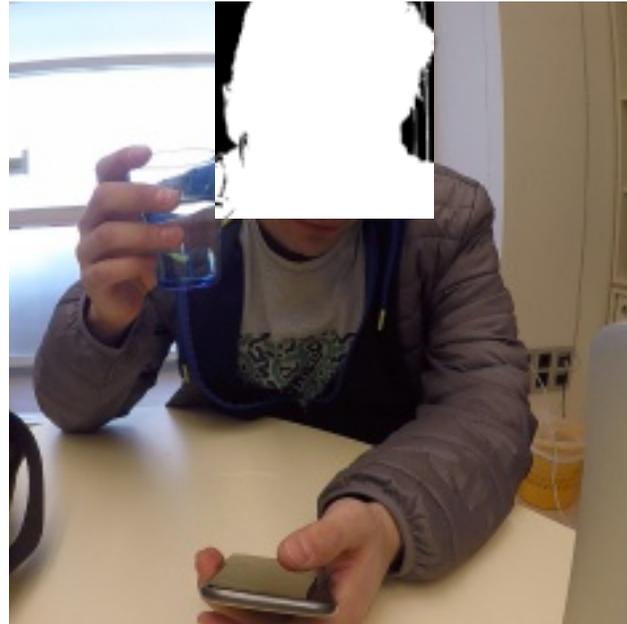
Over 120 blind and
visually impaired



Bartiméus:



Workshops



“It’s a completely different paradigm of navigation”



Testimonial

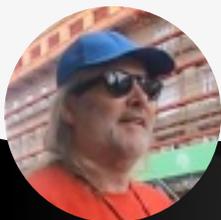


"It's a bit like seeing."

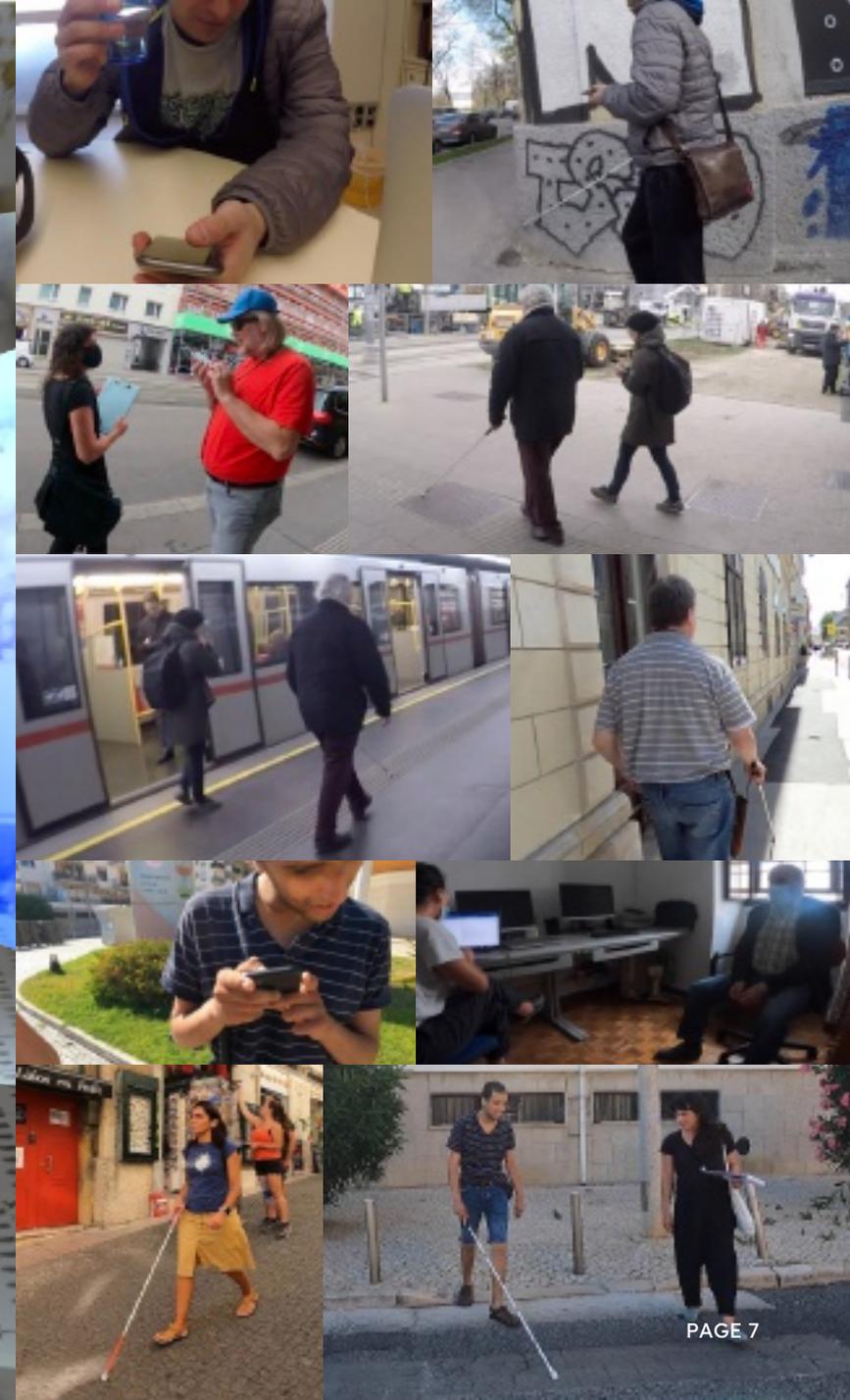
The impression of direction is constantly transmitted.

That sounds complicated at first and technically, it certainly is. In practice, however, it is amazingly simple.

Dreamwaves differs from all systems known to me simply because of this permanent indication of direction."



Jürgen Schwingshandl
Blind user tester for our navigation app, waveOut.



Blind or moderate to severe visual impaired



WORLD WIDE

250M



EUROPE

20M



PHYSICAL



MENTAL

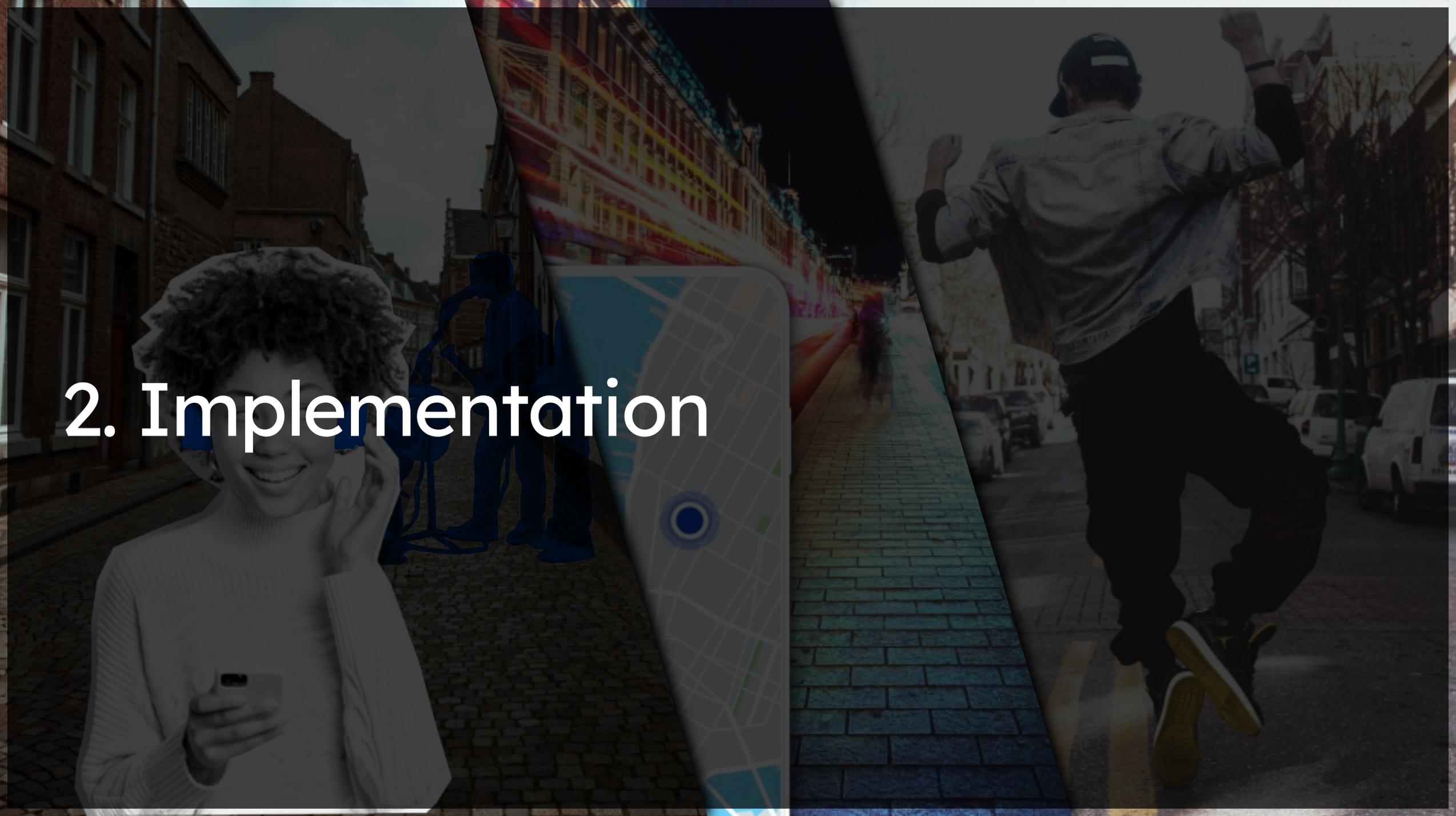


EMPLOYMENT

fundão
365 dias à descoberta

**SANTA
CASA**

2. Implementation

The image is a collage of four distinct scenes. In the top-left, a woman with curly hair, wearing a white sweater, smiles while holding a smartphone. The top-right shows a person in a grey jacket and black cap performing a skateboard trick on a city street. The bottom-left features a stylized map overlay with a blue location pin. The bottom-right depicts a person in a blue hoodie standing on a cobblestone street next to a vibrant, multi-colored mural.

Technological Challenges

Mobile audio AR is still not perfect

For a **realistic audio experience** it is **crucial** to know the **exact location** of the users and **therefore their position** in relation to the virtual sound.



Our Technological Solution



ACCURACY IN CENTIMETER RANGE
WITH CAMERA

ViO

Accurate (centimeter level) relative phone motion using visual inertial odometry

MACHINE LEARNING

Sidewalk - street side
Intersection
Walkable space



SPATIAL AUDIO



GPS



**Dreamwaves
SENSOR FUSION**



**PRECISE
LOCATION
ON MAP**

(therefore, precise location of virtual objects in the world - AR)

RONIN

Accurate (one meter level) relative phone motion using machine learning and inertial sensors only (like ViO without the camera)

MACHINE LEARNING

Using additional smartphone sensors (disclosure pending IP application)



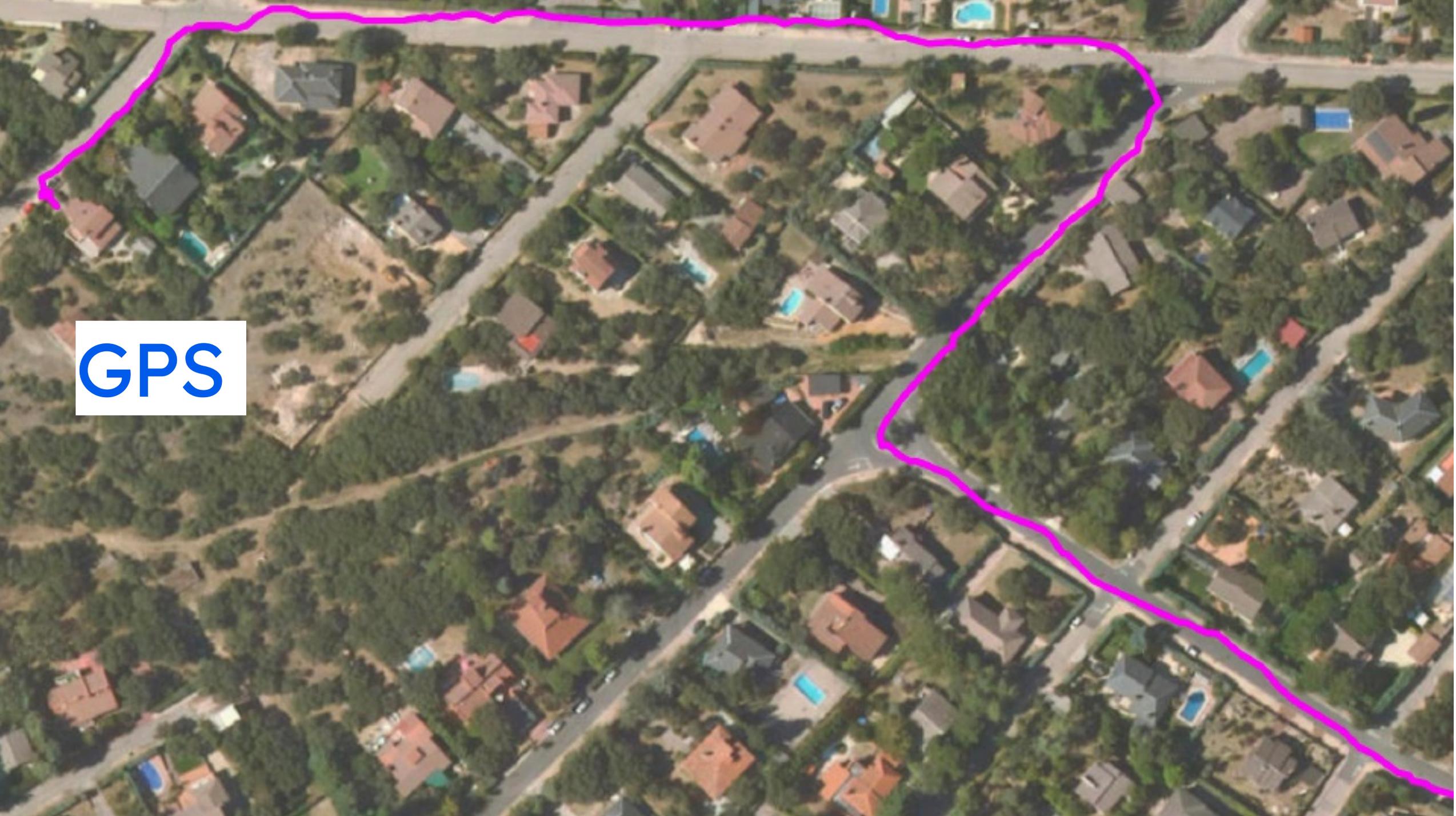
waveOut

Dreamwaves

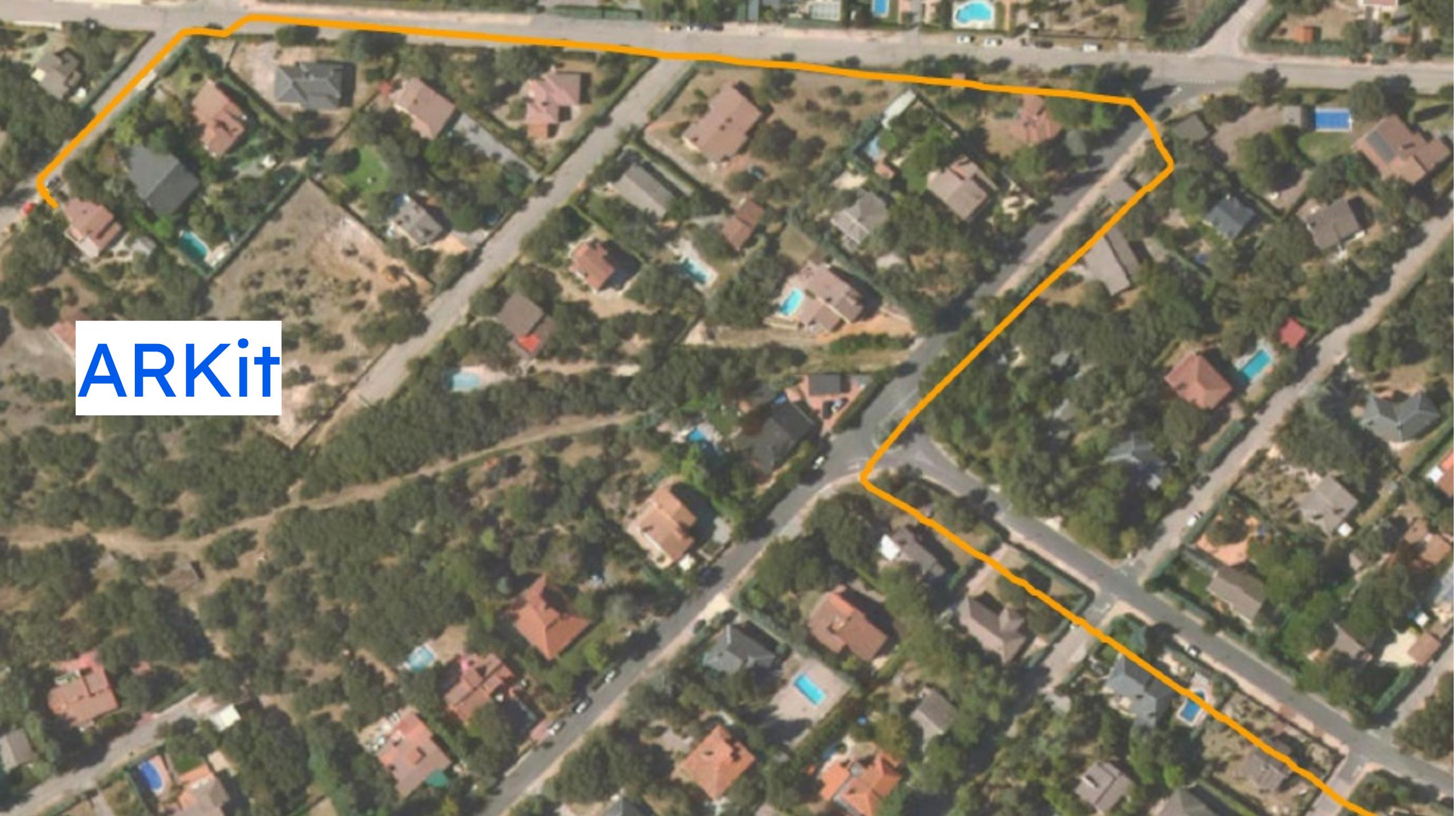
**INTUITIVE
NAVIGATION**



ACCURACY IN ONE METER RANGE
WITHOUT CAMERA
(e.g. Phone in the pocket)

An aerial photograph of a residential neighborhood. The houses are arranged in a grid-like pattern with winding streets. Many houses have swimming pools. A thick pink line is drawn across the image, outlining a specific area that follows the streets and includes several houses. In the lower-left quadrant, there is a white rectangular box with the text 'GPS' in blue.

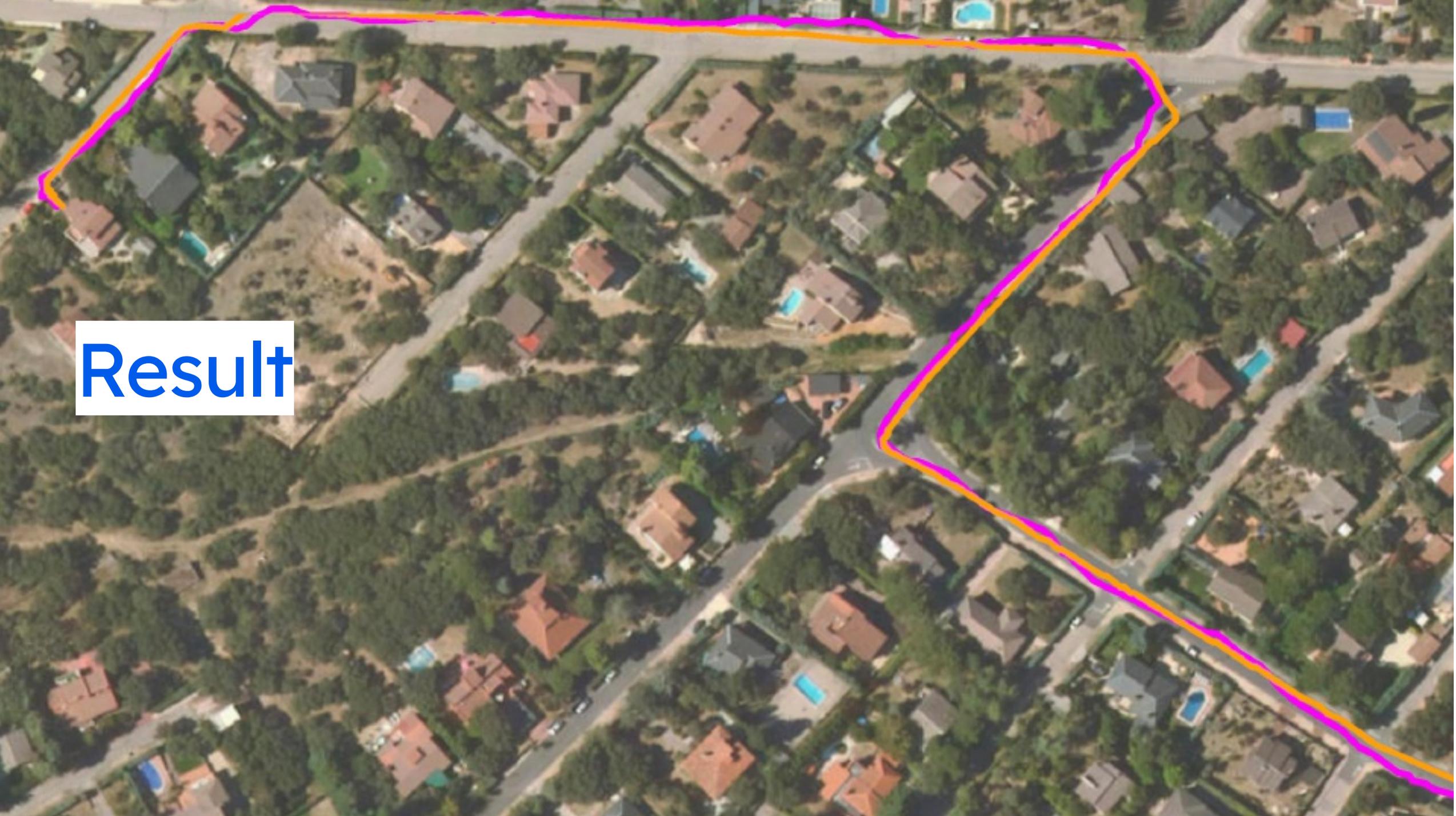
GPS

An aerial photograph of a residential neighborhood. A yellow line outlines a specific area within the neighborhood, which includes several houses, trees, and swimming pools. The ARKit logo is overlaid on the left side of the image.

ARKit

An aerial photograph of a residential neighborhood. The houses are arranged in a grid-like pattern with streets. Many houses have swimming pools. Two overlapping outlines are drawn on the image: a yellow one and a magenta one. The yellow outline is more rectangular, while the magenta one follows the street layout more closely. A white box with blue text is overlaid on the left side of the image.

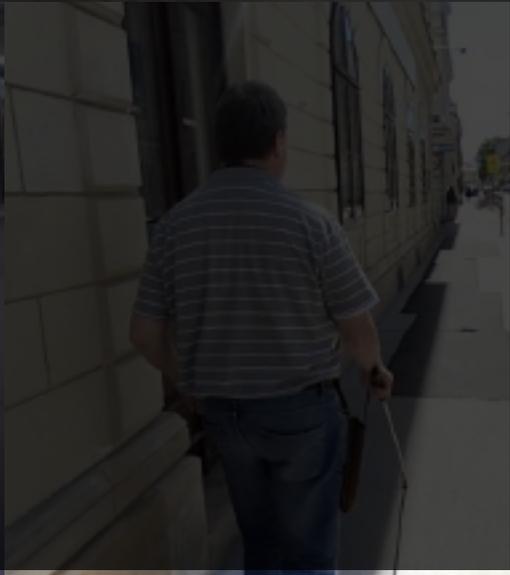
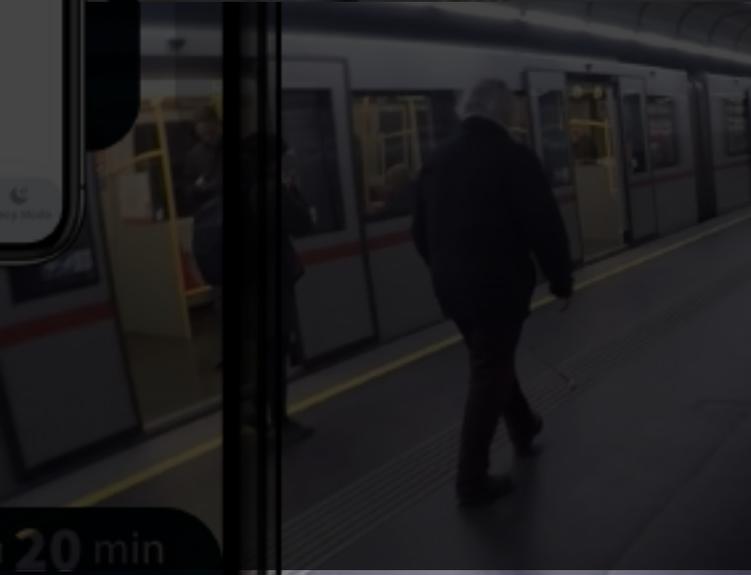
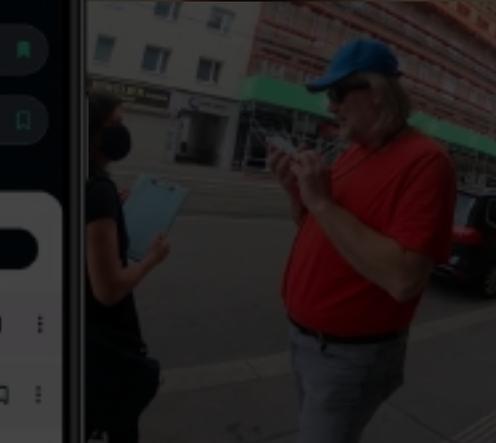
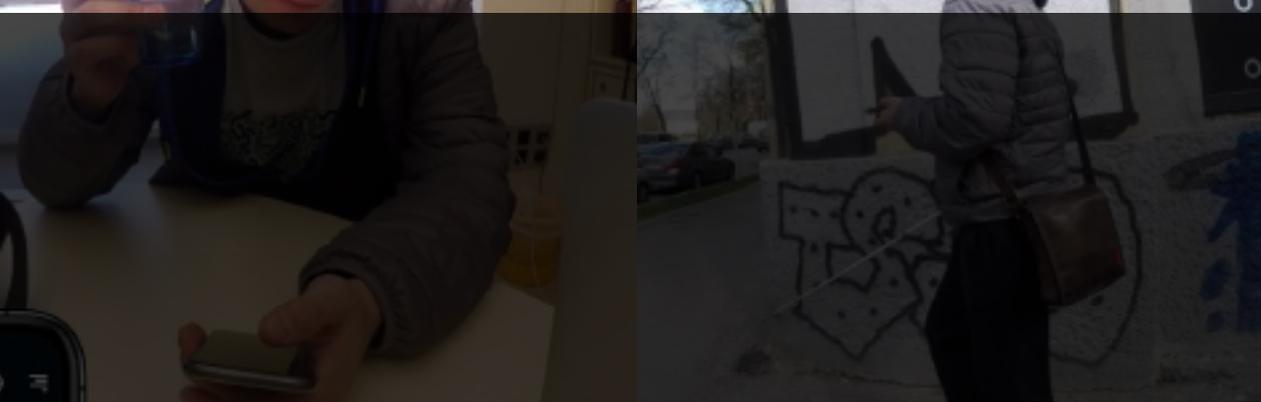
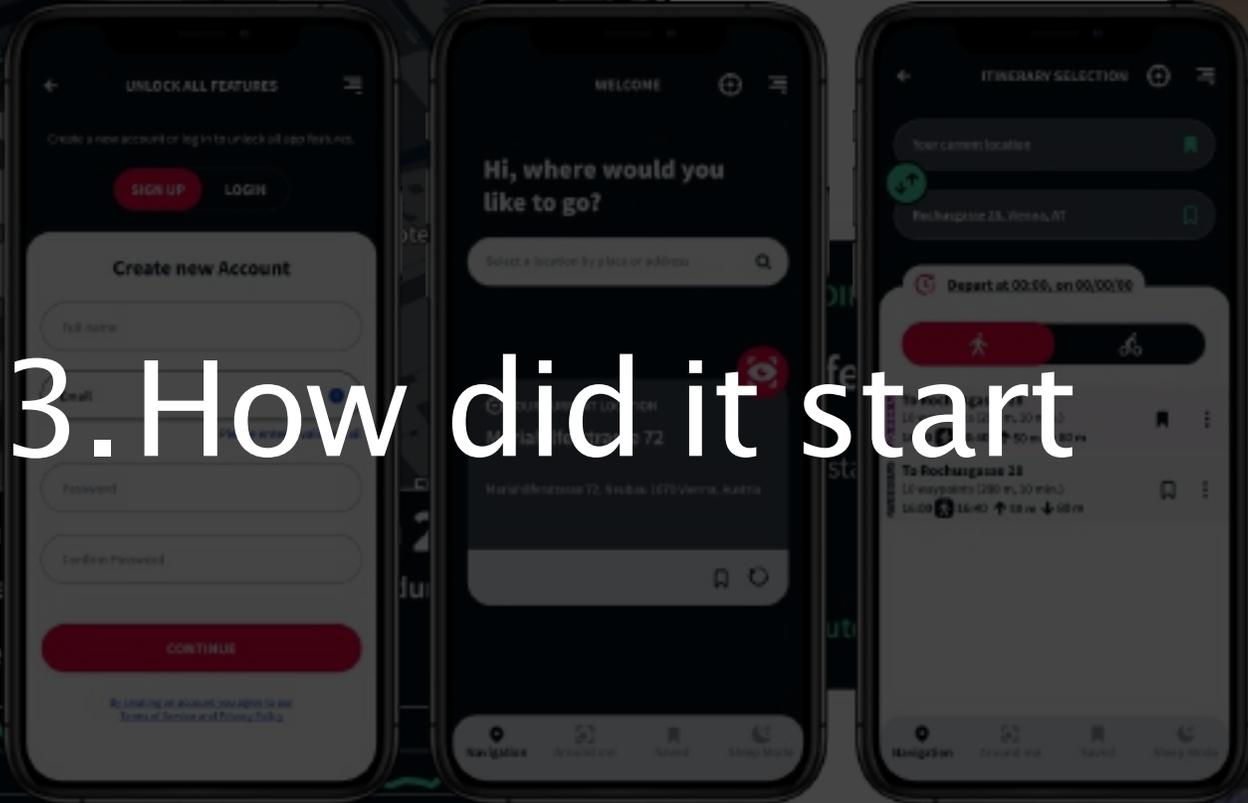
Comparison



Result

Navigating to Vienna West Railway Station

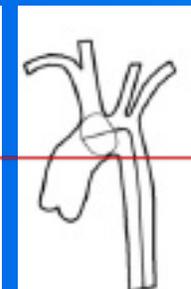
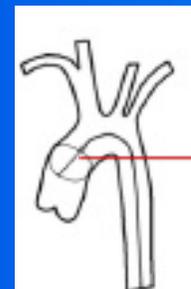
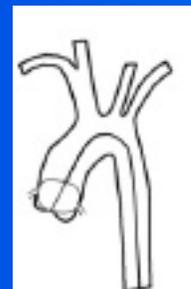
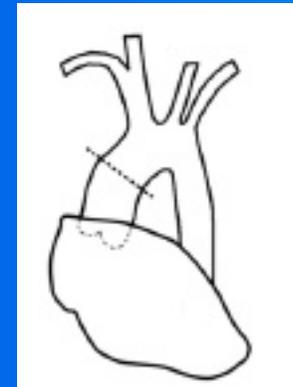
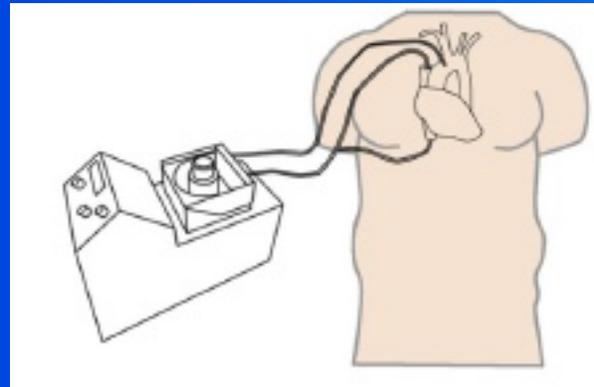
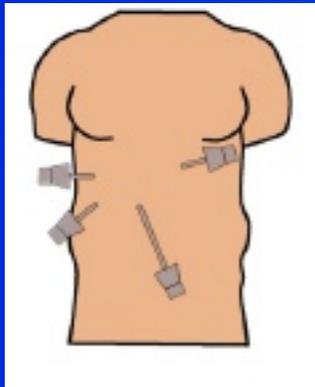
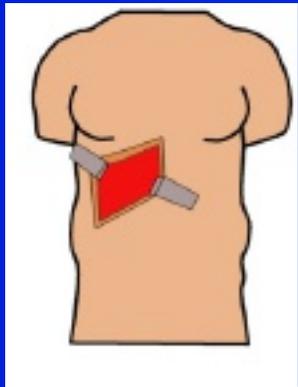
3. How did it start



2 km 2/30 1 h 20 min

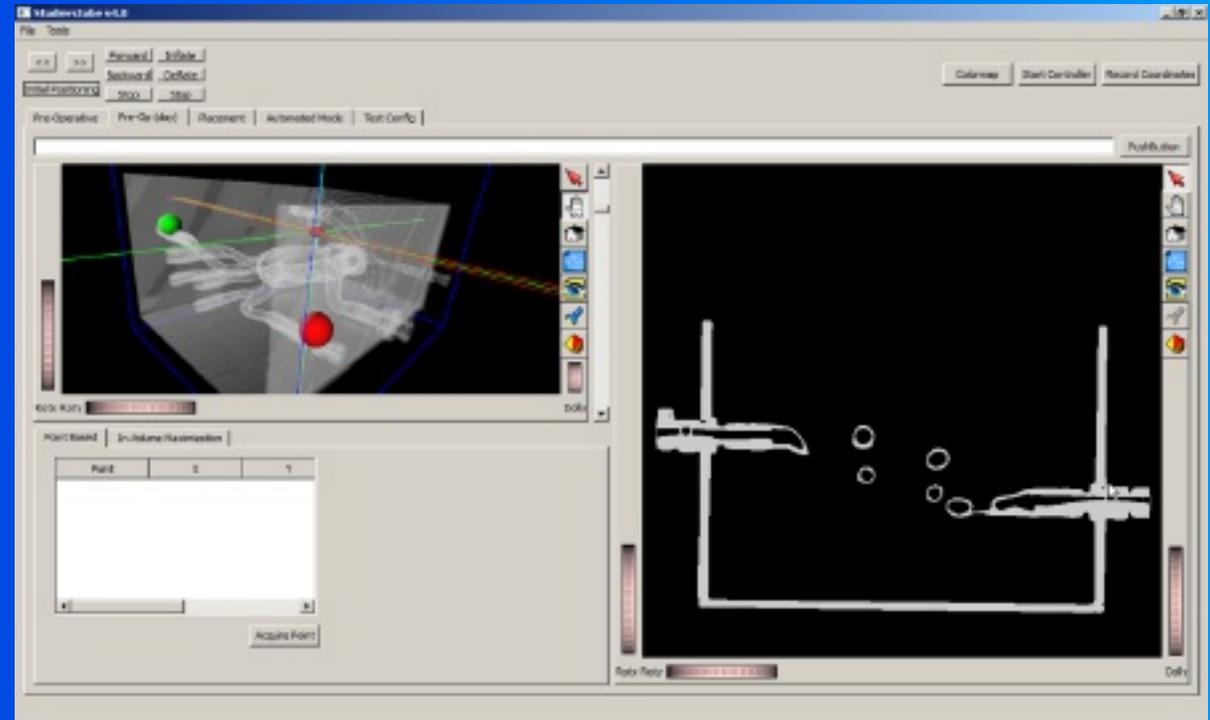
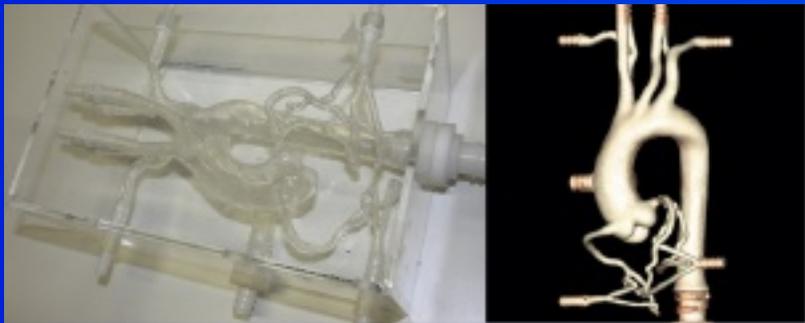
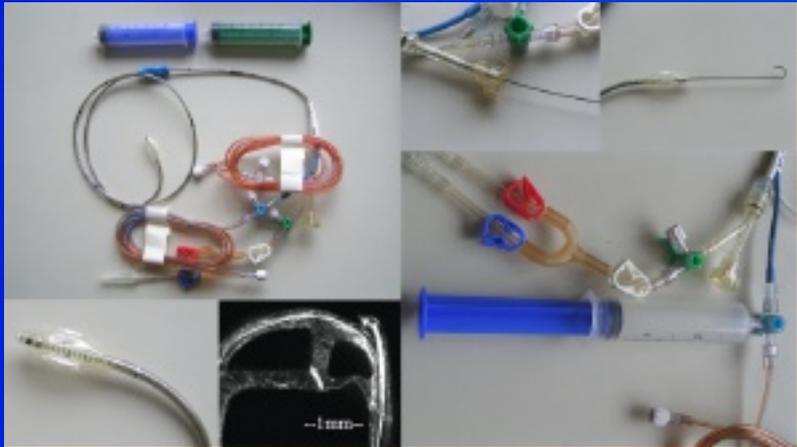
How did it all start

Passion 1: augmented reality



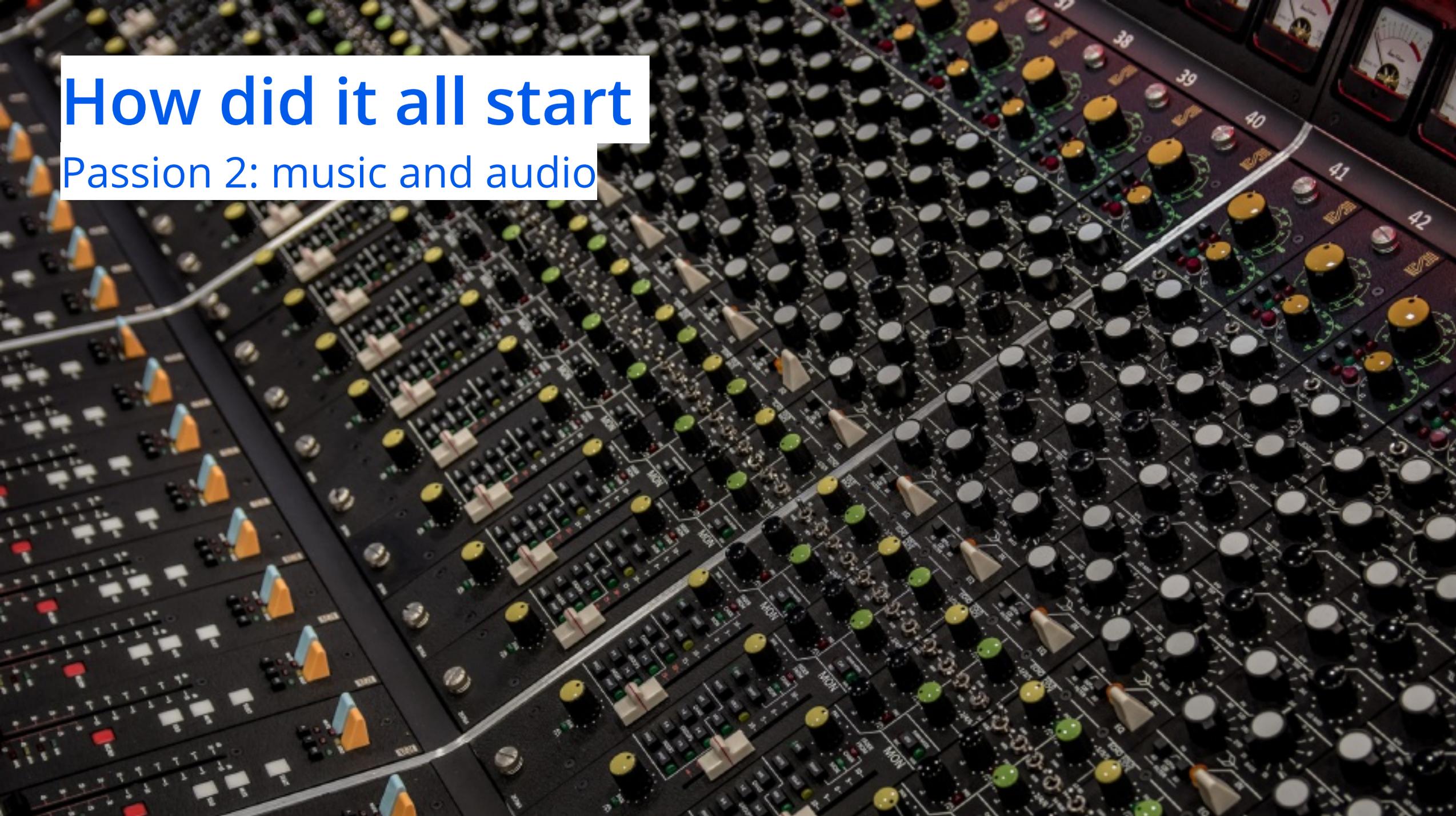
How did it all start

Balloon insertion visualization



How did it all start

Passion 2: music and audio



A futuristic cityscape at night, featuring a dense cluster of skyscrapers and a complex network of glowing light trails that suggest advanced transportation or data flow. The sky is dark and filled with a pattern of small, bright stars, creating a sense of depth and vastness. The overall color palette is dominated by deep blues, blacks, and vibrant yellows and whites from the city lights and light trails.

4. The present and the Future

Intuitive outdoor orientation and navigation for everyone.



Technology Use Case: Bike Navigation

Hands-free audio
augmented reality
experience for
**safe and intuitive
navigation** while
cycling



Technology Use Case: Tourism

Immersive audio experience for tourists visiting a city



Digital Twin indoor navigation



DIGITAL TWIN INTEGRATION

An interaction can be made with anything that is on the digital platform



REGISTER AS ADMIN

Fine grained access to indoor plan and feature customization



DEFINE NODES OF INTEREST

Define possible origin and destination notes to enable automated routing



ADD SPACIAL AUDIO CUES

Define which points should be heard, what audio be heard and when



Technology Use Case: Indoor Navigation

Indoor intuitive way finding in complex unknown venues





||| Dreamwaves

*“Let’s improve
mobility for
everyone!”*



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