



Problem
definition:

How can we **empower** individuals with visual impairments to **navigate** and **explore** indoor spaces with **confidence** and **independence**?



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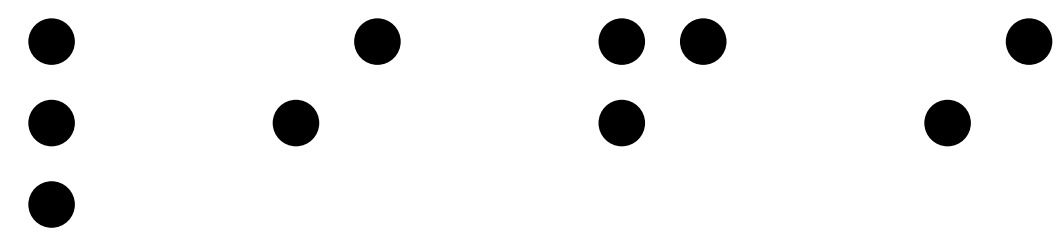
Evgeniia

Product Developer

ACCESSIBILITY, ILLUMINATED



Concept

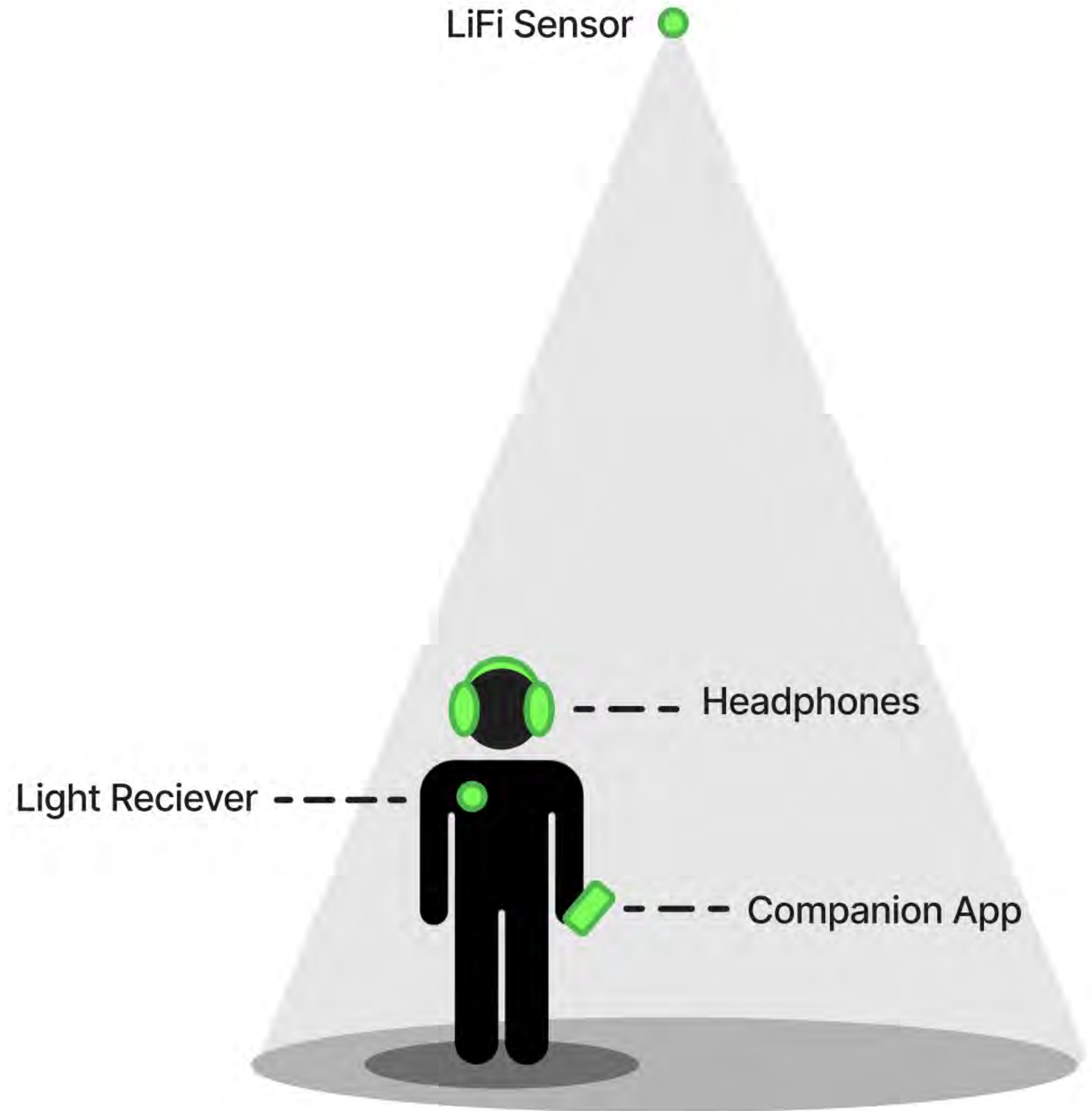


Utilizes LiFi

Integrates App

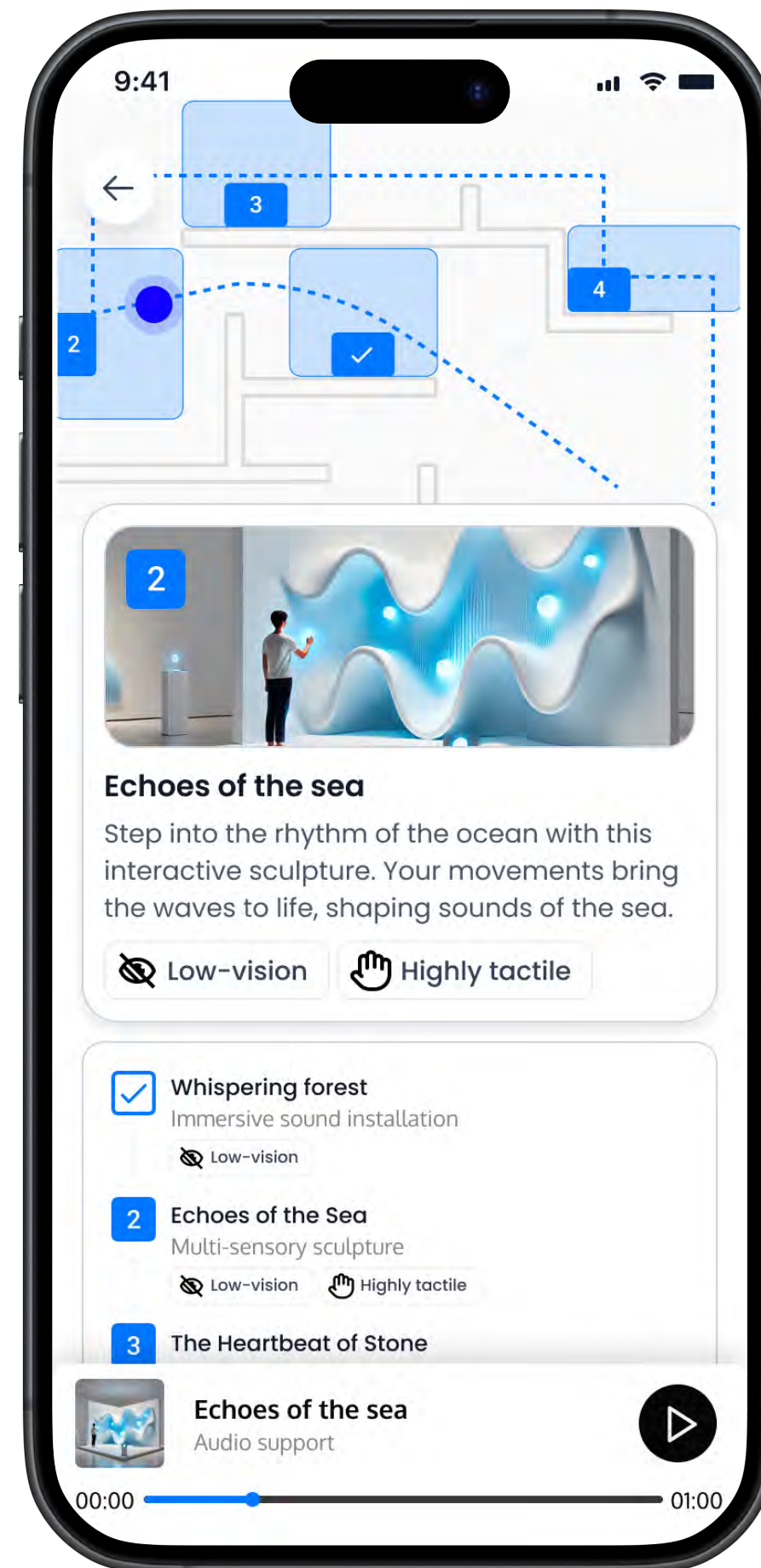
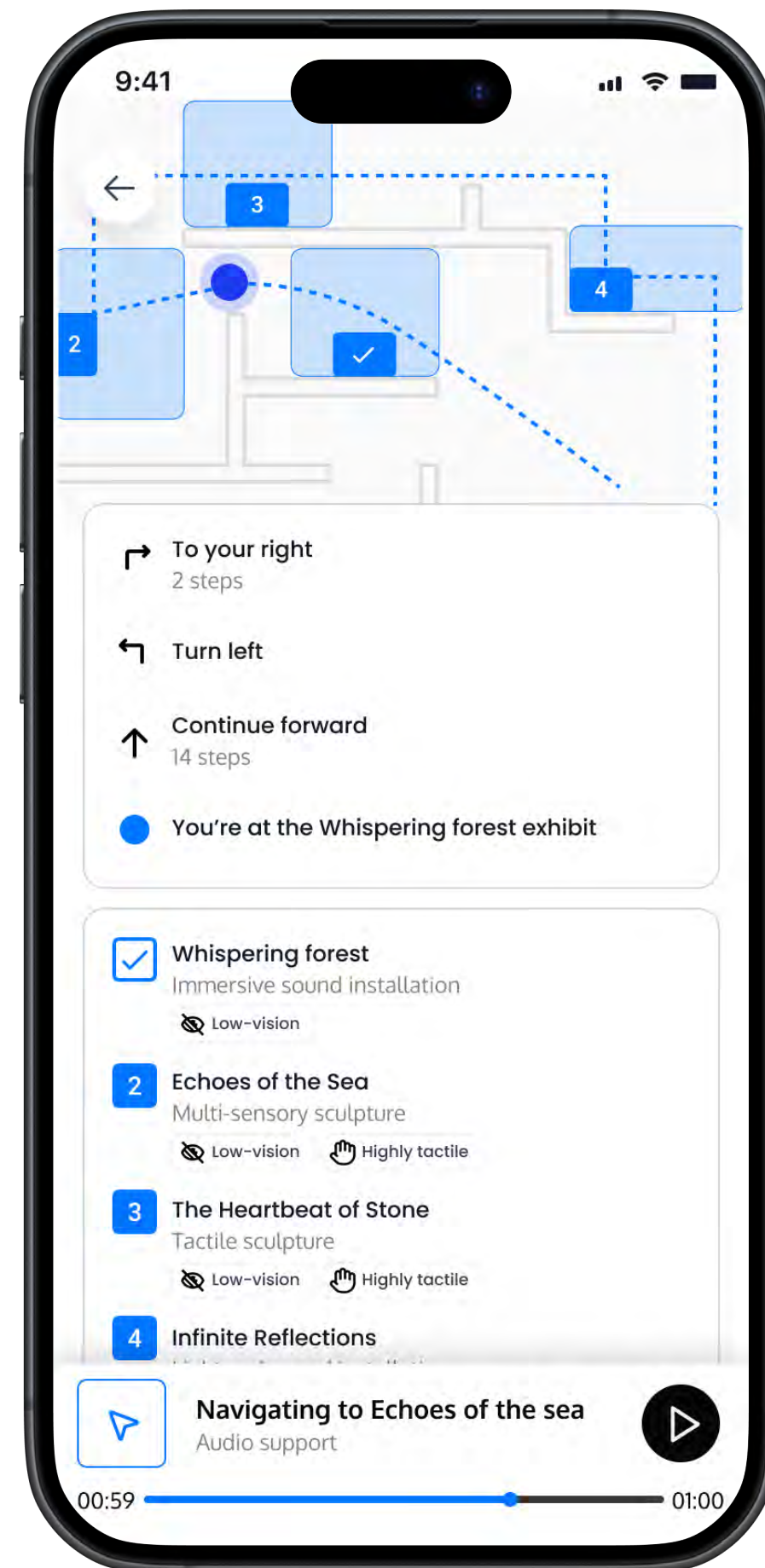
Unlocks Navigation + Audio

Inspiring LiFi technology



Key Features

Concept A



Interactive Digital Map

Provides detailed layouts of indoor spaces.

LiFi-Based Geolocation

Ensures precise location tracking within any facility.

Real-Time Navigation and Audio Guidance

Offers dynamic route planning and auditory instructions for seamless movement.

Designed with accessibility in mind, usable by voice commands, and gesture controls

Navigation

Accessible operation

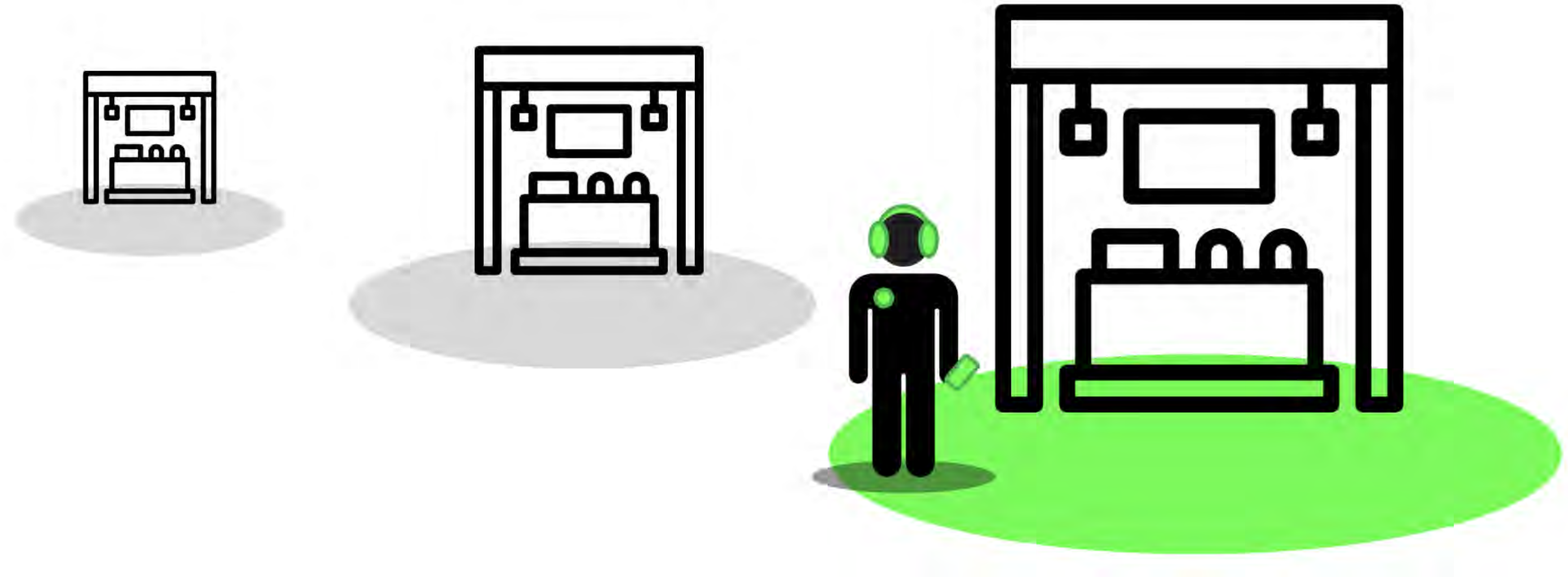
Route planning

Points of interest

Space occupancy

Audio/TTS supported

Boundary Detection



Defined Zones

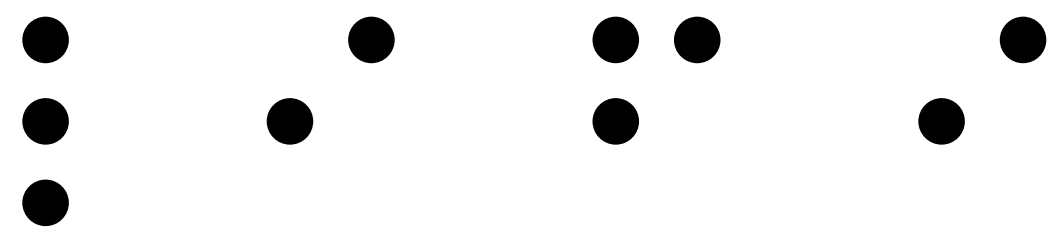
Determine different areas within the indoor space.

Real-Time Actions

Notify users when approaching boundaries or enhance interactions

Multisensory interactions

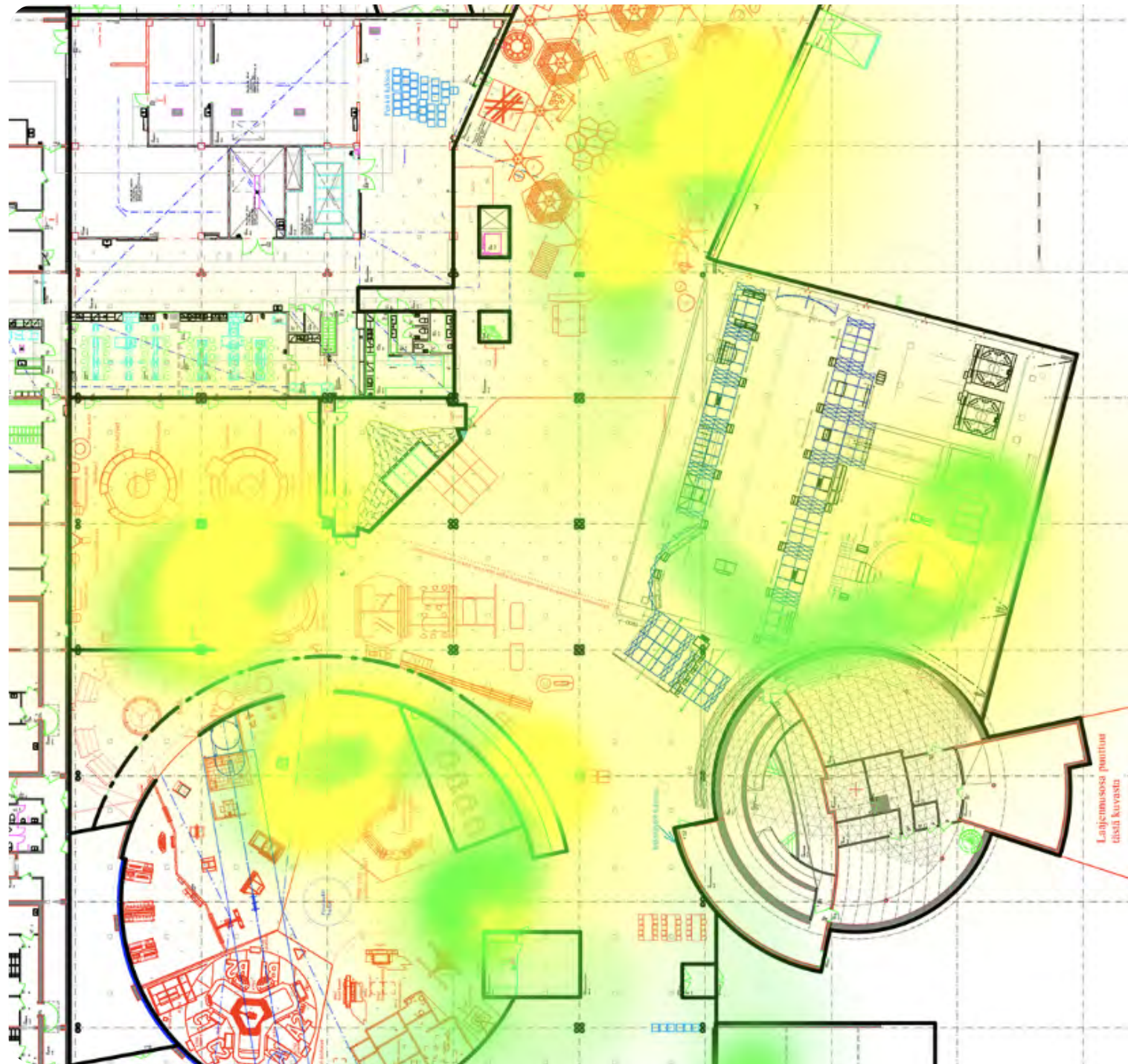
Proximity triggers
Audio descriptions
Interactive elements



Personal and shared
experiences equally for
everyone

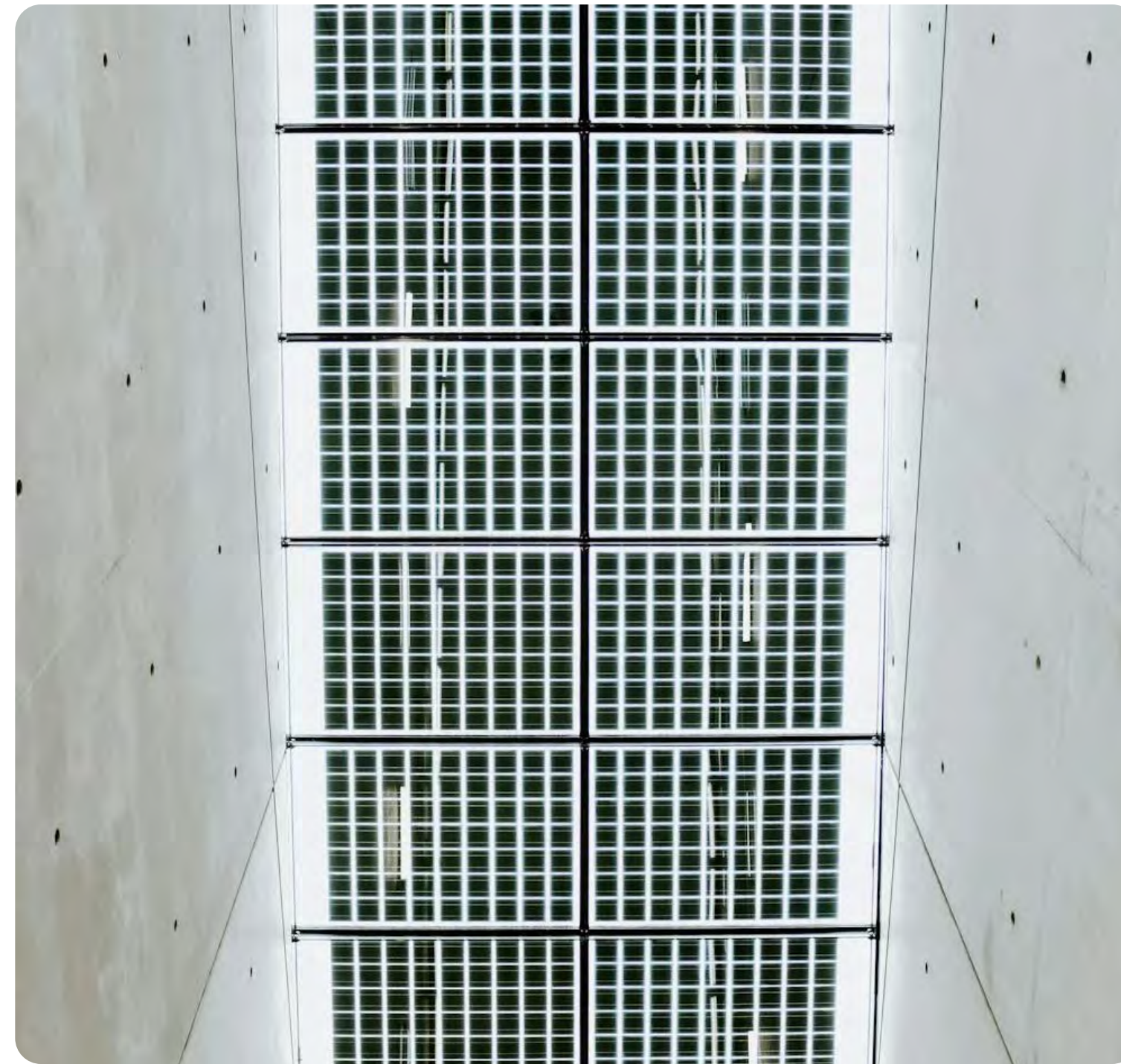
Futureproofing

New data possibilities



Utilize data for optimizing space usage and enhancing user experience.

Integrated Climate Control

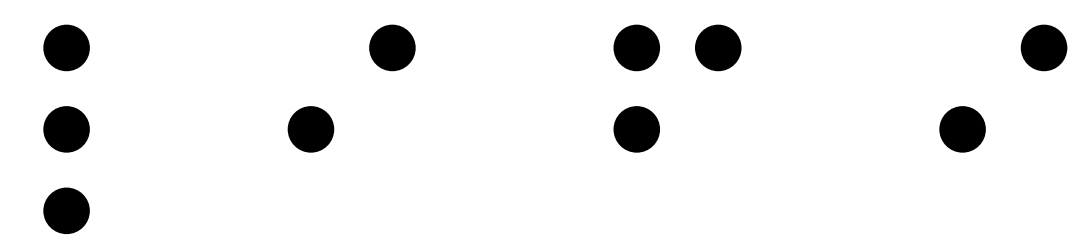


Synchronize with ventilation and heating systems for energy efficiency and sustainability.

Scalable Connectivity



Expandable technology infrastructure to support future innovations and user demands.



Mission

Positive Impact

Enhance user experiences and accessibility.

Multisensory Engagement

Create interactive and immersive environments.

Personal and Shared Experiences

Cater to both individual and group needs.

Inspiring Innovation

Foster creativity and technological advancement.

Inclusivity for All

Make indoor spaces accessible and enjoyable for everyone

Implementation cost estimates

Based on needed technology

LiFi LED unit 50-150€ / Added sensor or new light source

Receiver unit 25-40€ / Or phones with sensors (free)

Access point 500-700€ / Connects to 20 lights and them to cloud

Software 25,000€ / mapping, integration, interface

+ Installation & Maintenance costs

Overhaul for large facility +100k€

200 light fixtures + 10 access points + 500 receivers + software + installation

Additional Incentive

From directive
(EU) 2024/1275

Smart Lighting Integration

Requirements for smart lighting systems to connect with ventilation and heating based on space occupancy.

Energy Efficiency

Enhances energy consumption efficiency and supports the green transition.

Compliance Benefits

Early adoption ensures compliance and leverages government incentives for sustainability.

Member States shall establish requirements to ensure that, where technically and economically feasible, non-residential buildings with an effective rated output for heating systems, air-conditioning systems, systems for combined space heating and ventilation, or systems for combined air conditioning and ventilation:

- (a) With a capacity exceeding 290 kW are equipped with automatic lighting controls by 31 December 2027;
- (b) With a capacity exceeding 70 kW are equipped with automatic lighting controls by 31 December 2029.

The automatic lighting controls shall be suitably zoned and capable of occupancy detection.

Can be costly, but:



Horizon Europe

Flagship research and innovation program

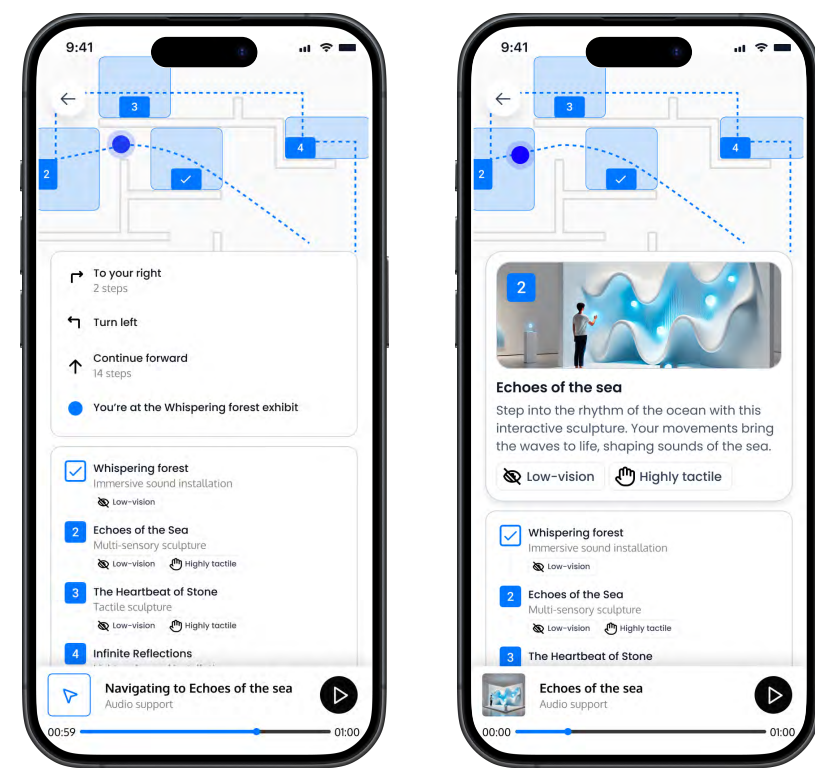
Digital Europe

Digital capacities and facilitate the wide deployment of digital technologies.

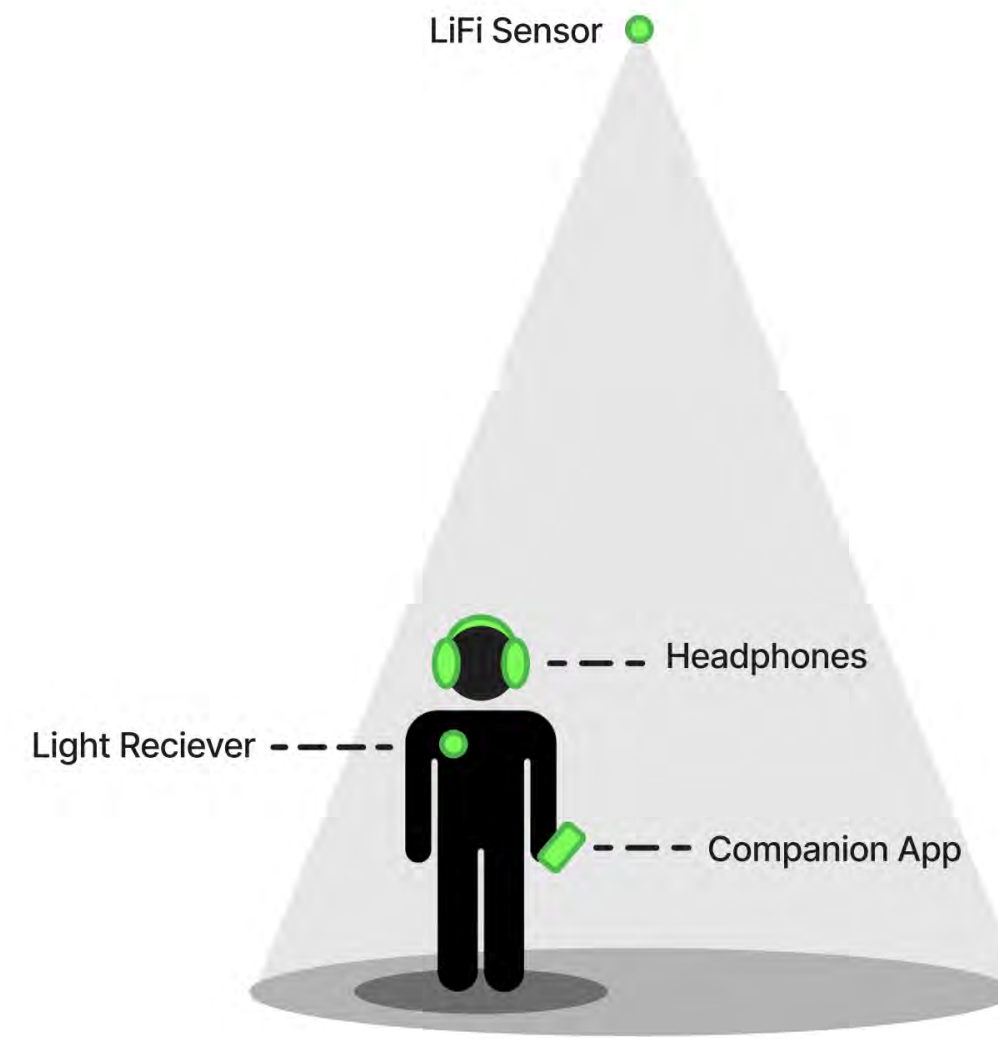
European Social Fund Plus

Promoting social inclusion, and enhancing education and training.

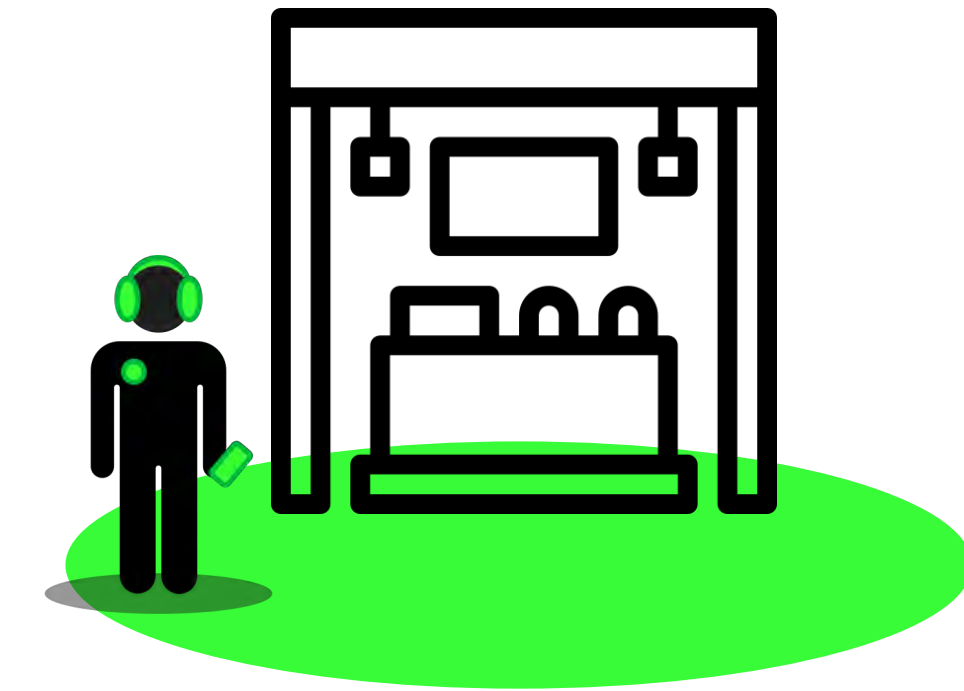
Roadmap to autonomy



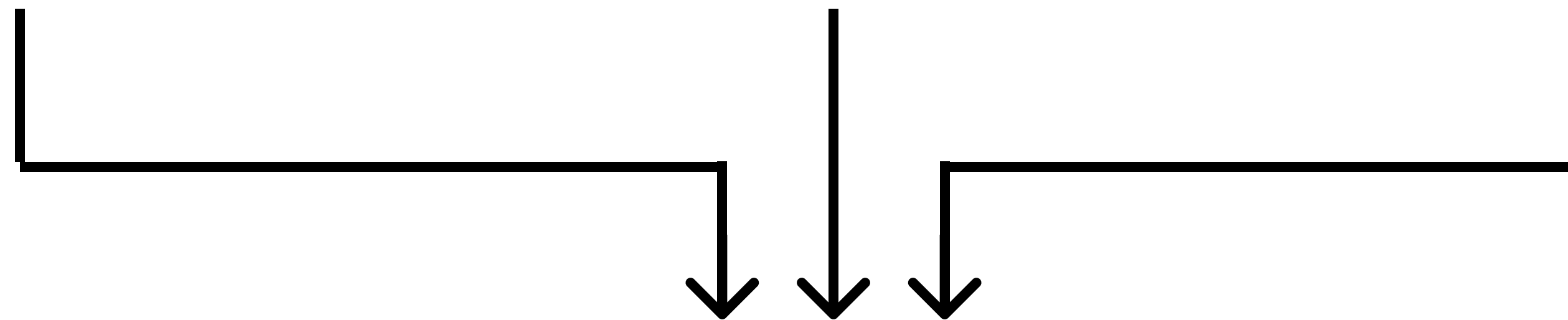
1. App + Map + Audio



2. LiFi system + navigation



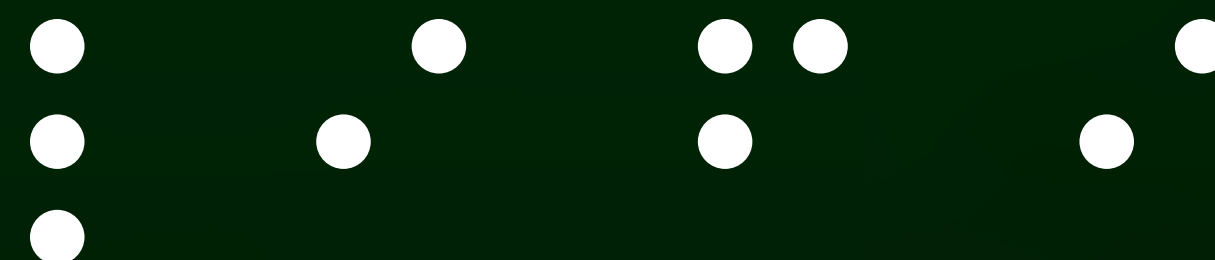
3. Proximity triggers



Full autonomy



Let's light the path for future of accessibility in indoor spaces



Navigating
Guiding
Interacting

Links:

Pitch video:

<https://drive.google.com/file/d/1ly4-6Exaln8ve6uS86xgtPbtwKtk9L14/view?usp=sharing>

Demo video:

<https://drive.google.com/file/d/1jdXfJK9znRuS7i0Ld8BpDNP0pZwvMjq7/view?usp=sharing>