

INDOOR NAVIGATION THAT WORKS





indoor navigation that works

# Who are we?

No Code - No Hardware indoor navigation solution



12 Experts



Fast Paced  
Startup



International  
team



Based in  
Berlin



Spin-off from  
XR pioneers  
with 20 years'  
experience

# Challenges

Tackling key indoor navigation challenges:



Scalability in large venues



Low precision and reliability



GPS doesn't work indoors



Complex setup and deployment



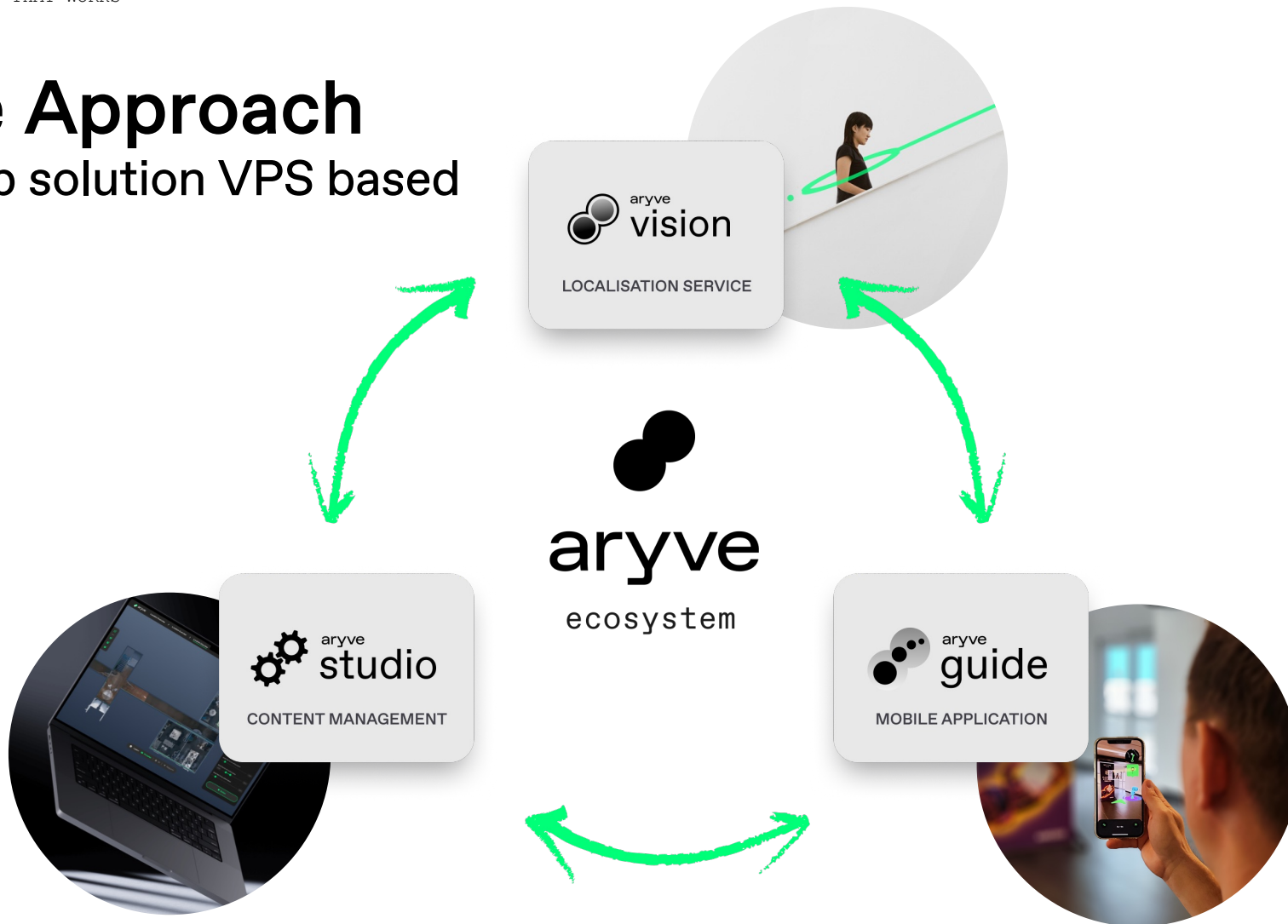
Maintenance costs  
(beacons & other hardware)



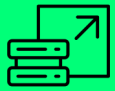
Tailored to solve a single scenario

# aryve Approach

one-stop solution VPS based



# aryve Solution



Scalable



High precision



VPS based



Easy to setup via CMS



No extra hardware needed



Multi-user journeys

# Indoor Navigation as infrastructure

OUTDOORS STANDARD SINCE 1995

## GPS

Satellite triangulation. Open positioning standard the world built apps on top of.



APPS THAT RIDE ON GPS

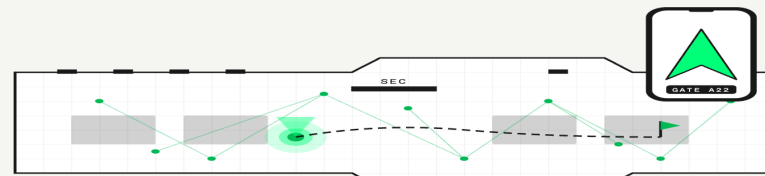
- Maps
- Ride-hail
- Delivery
- Fitness
- Aviation
- Emergency



INDOORS ARYVE · 2026

## aryve VPS

Visual Positioning System. Camera-based, no hardware, no beacons. One SDK, every floor.



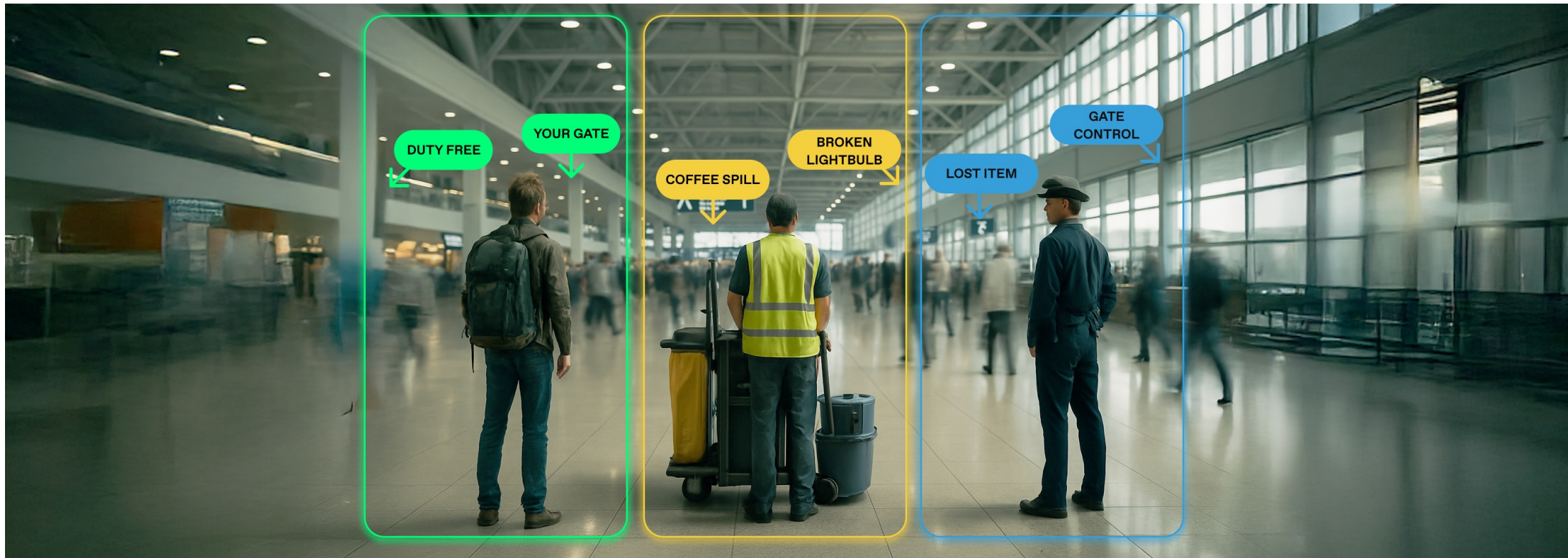
SIX ARYVE JOURNEYS, ONE MAP

- Passenger Nav
- Staff Guidance
- Retail Activation
- Security
- Robots & AVs
- Accessibility



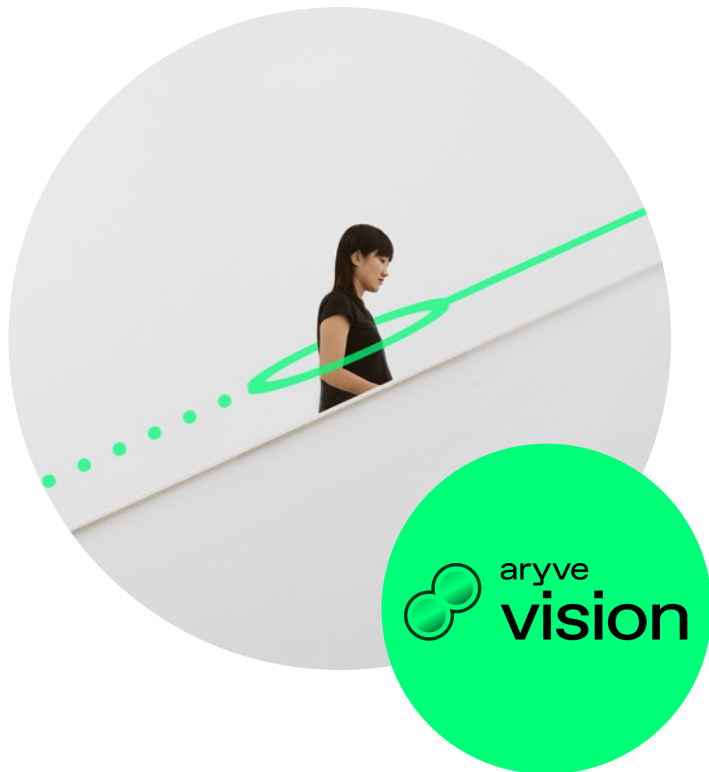
# Flagship Industry: Aviation

One journey, multiple users



# aryve passenger navigation

## from arrival to gate – transfer



Activation of the journey through mobil boding pass or QR code – WEB only

Localization outside the terminal – parking – public transport

Dynamic routing to check in – security control – gate – optimization waiting time -

Connection to AIS and public data sources



# aryve passenger experience

## Kids Tour at the airport PAD



Activation (QR Code -> native app)

Treasure hunt in the terminal (collection of planes)

Ideal to bridge waiting times

Local offers

# Mein Heimatland



# aryve asset tracking

we find robots, wheelchairs, and any device with a camera

TORY® - The Retail Robot



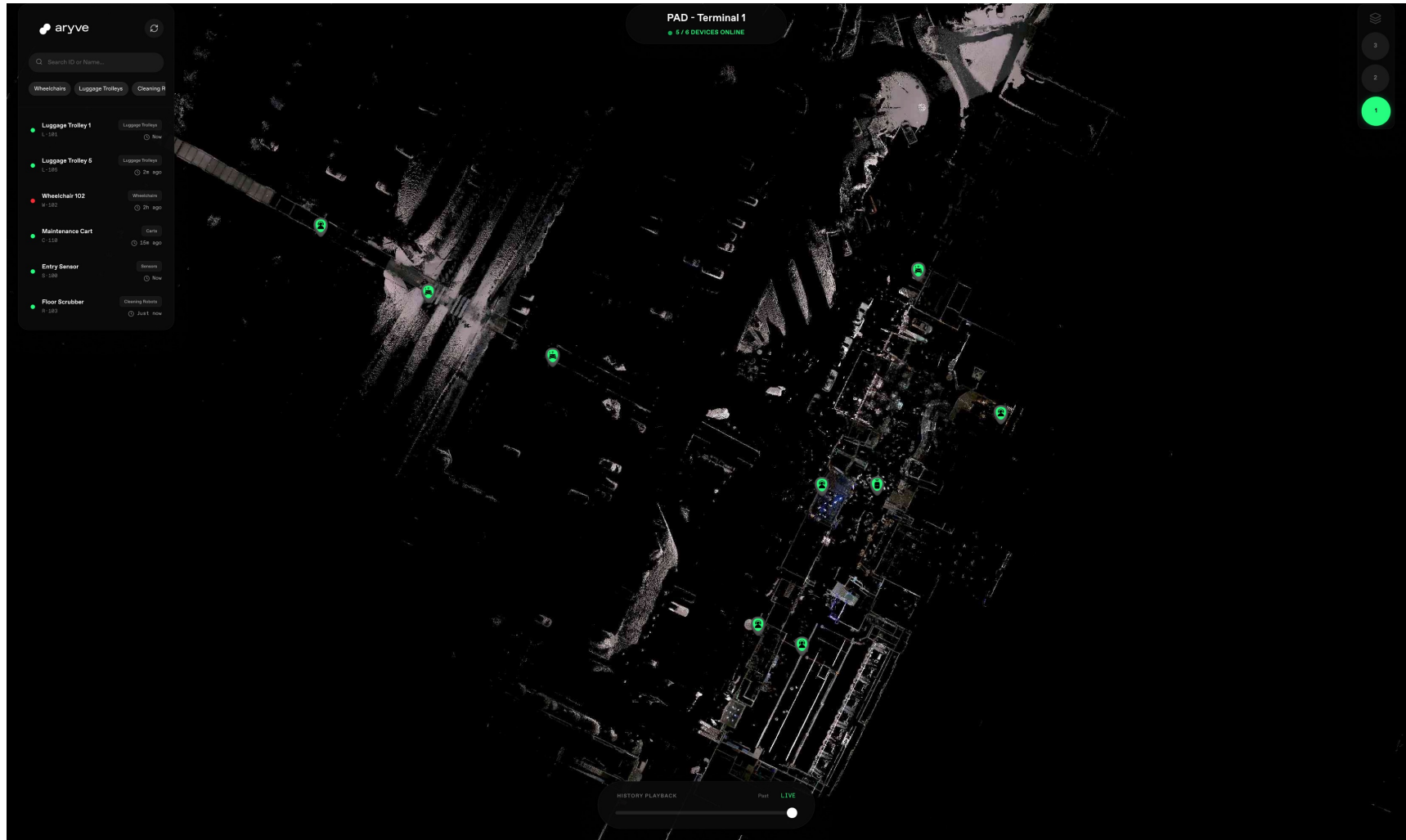
Web Dashboard

Same map

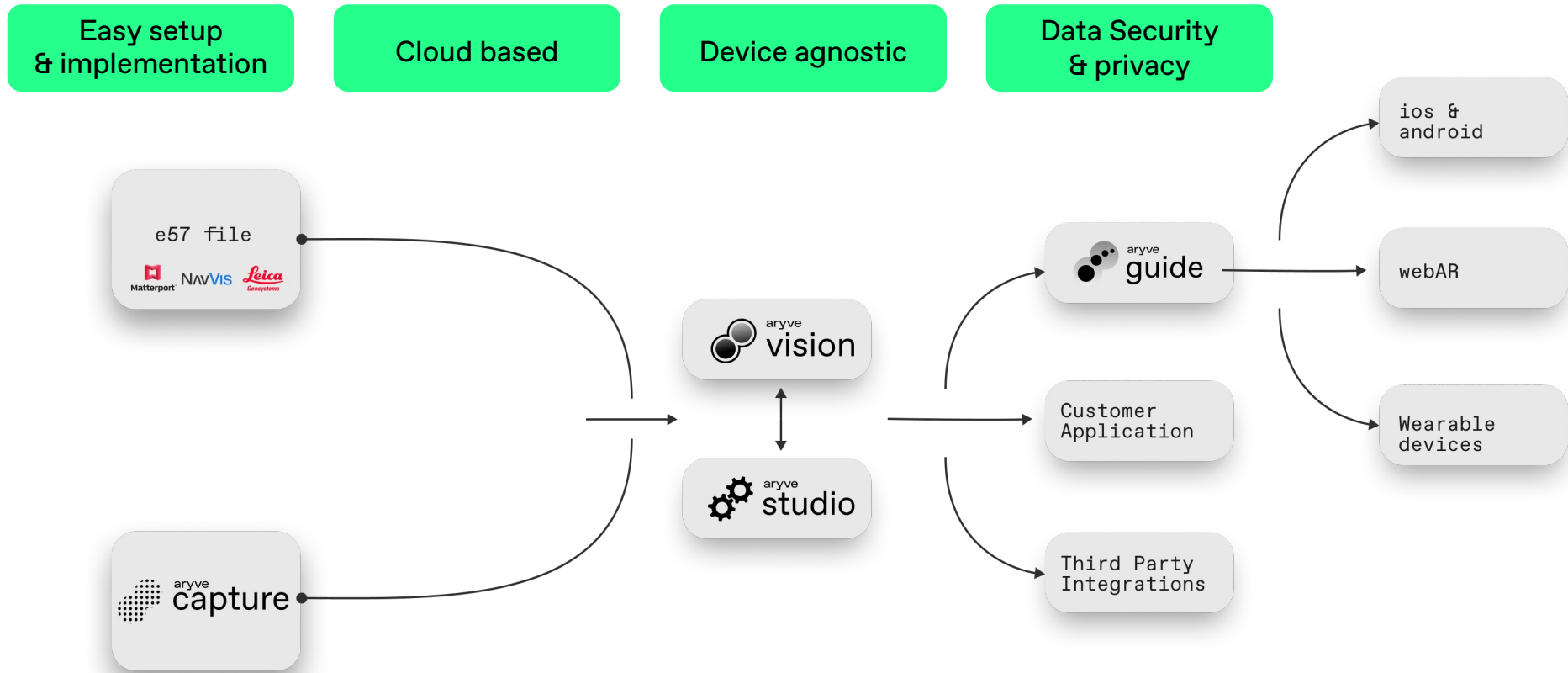
Refresh automatically

Redundancy

INDOOR NAVIGATION THAT WORKS



# How it works



# Starter Packages

your smart way to test



**Media - drive traffic from any media to your POS**

What the traveller hears VOICE · EN · 0.8x

- 01 AT ENTRANCE · 00:00  
"Welcome to Terminal A. Information desk in 38 metres , slightly to your right. Tap twice to start."
- 02 AFTER 12 M · 00:18  
"Pillar on your left. Continue straight for 20 metres."
- 03 NOW · 00:36  
"Turn slightly right in 6 metres. Information desk ahead."
- 04 ARRIVAL · 00:54  
"You have arrived. Information desk directly in front of you."

- VoiceOver / TalkBack
- Bone-conduction safe
- Haptic confirm
- WCAG 2.2 AA

**Accessibility – Barriere free and visual impaired**



**Gamification – Entertain your passengers**

15.000 Euro runtime 3 months

MEDIA PACKAGE

# Every screen, a storefront.

Turn airport media inventory into a measured funnel: a digital sign sparks the offer, aryve walks the traveller to the shelf, and POS closes the loop.

01 • SPARK

### The screen does the asking.

Existing signage inventory shows a contextual offer with a scannable QR — no new hardware.

Last minute travel **supplies**

Scan. Navigate. aryve.  
Only a few minutes away

Scan the code and navigate to us

**10% OFF** essentials for your journey

02 • ACTIVATE

### One scan, one fitting route.

The QR opens aryve directly to the offer's destination — no app store, no friction.

aryve - Travel Supplies opening route...

03 • ROUTE

### AR walks them to the shelf.

Visual positioning paints a route straight to the POS — turn-by-turn, in real space.

Travel Supplies - 78 m

TURN RIGHT 2 MIN

04 • CLOSE

### POS closes the loop.

Coupon redeemed at the till — every scan tied to a sale, every step measured.

Travel Supplies · T1 T:2026-05-18

Travel adapter	€ 19.90
Neck pillow	€ 14.50
Charger 30W	€ 24.90
aryve · 10% OFF	-€ 5.93
<b>Total</b>	<b>€ 53.37</b>

Scan SIGN · A12 TO POS 2 m 14 s REDEEMED -10%

CLOSED-LOOP ATTRIBUTION · SIGN A12 → POS

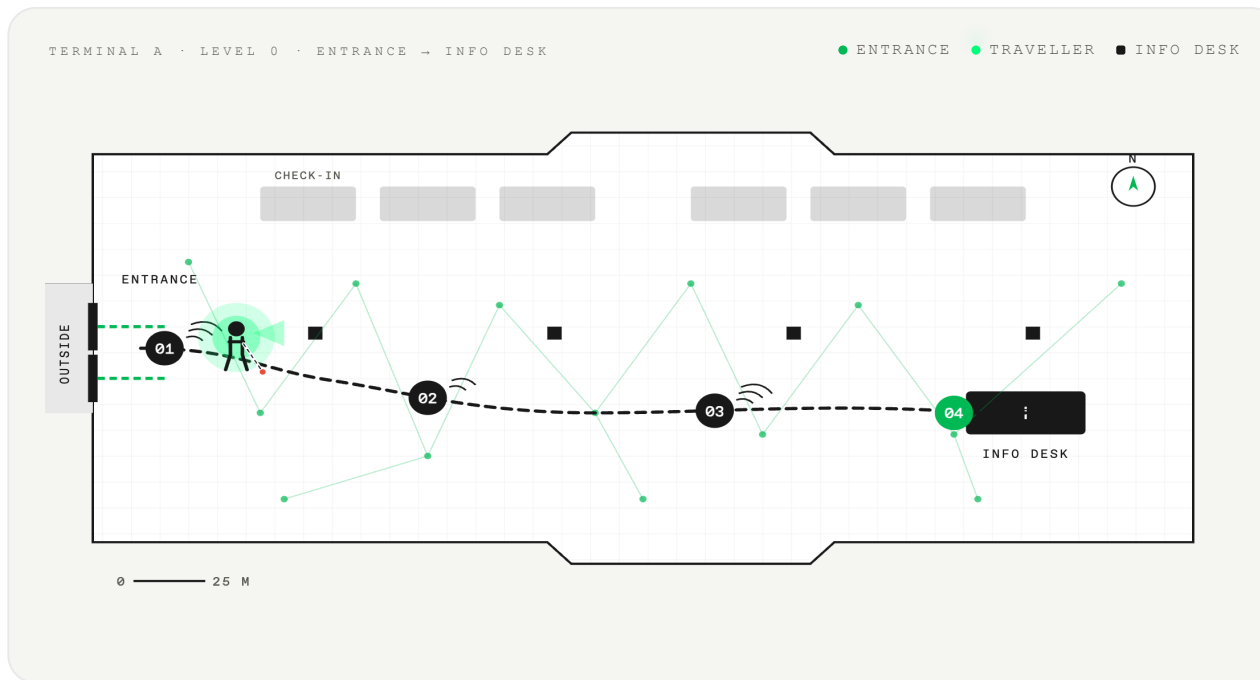
MEDIA + WAYFINDING + POS, ON ONE POSITIONING LAYER

aryve **VPS** — turn dwell time into measured retail traffic

- ANY SCREEN
- LIVE OFFERS
- POS ATTRIBUTION
- GDPR

# Guided by voice. Not by sight.

For blind & low-vision travellers, aryve narrates the route — from the terminal entrance to the information desk, step by step, in the user's language.



## What the traveller hears

● VOICE · EN · 0.8x

- 01 AT ENTRANCE · 00:00  
"Welcome to Terminal A. **Information desk in 38 metres**, slightly to your right. Tap twice to start."
- 02 AFTER 12 M · 00:18  
"Pillar on your left. **Continue straight** for 20 metres."
- 03 NOW · 00:36  
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- VoiceOver / TalkBack
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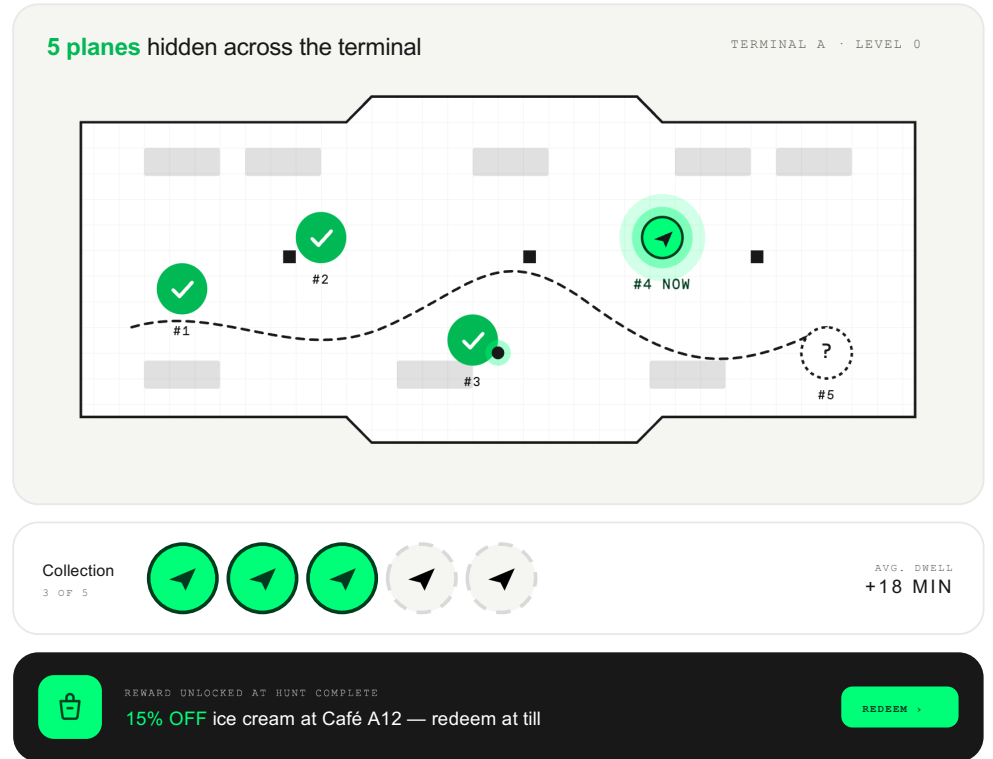
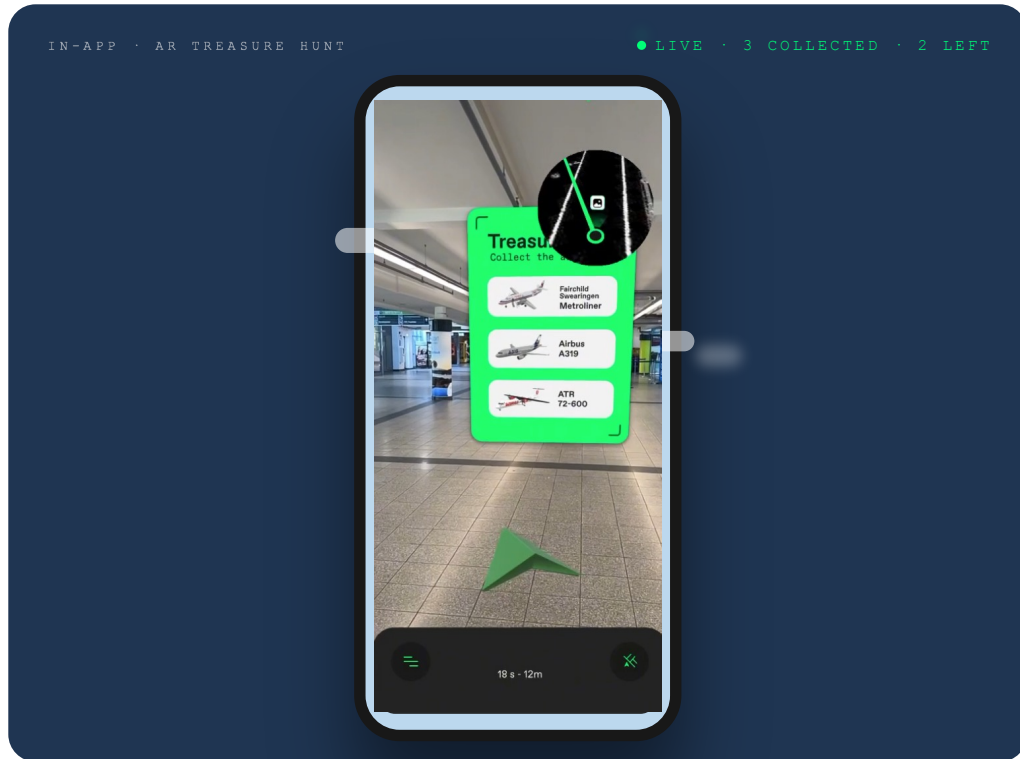
POWERED BY THE SAME VPS THAT RUNS EVERY ARYVE JOURNEY

aryve VPS — visual positioning, audio output, zero hardware

● CAMERA-BASED ● VOICE-FIRST ● GDPR ● WCAG 2.2

# From bored to boarded.

A terminal-wide paper-plane treasure hunt turns dead waiting time into an engagement loop — measured dwell, retail uplift, and one happy family per gate.



 PLAY LAYER • THE TERMINAL BECOMES A PLAYGROUND

**aryve VPS** — gamified journeys built on visual positioning

- WEB OR NATIVE
- BRAND SKINNABLE
- POS-LINKED REWARDS
- MULTI-LANGUAGE

# GDPR conform

**SCHÖRMANN  
ROSENTHAL  
DREYER**

**A. Executive Summary**

The data protection assessment of the aryve Indoor Navigation System shows that the product operates in compliance with data protection regulations, in particular through localized processing, strict data minimization, temporary processing structures and the implemented deletion mechanisms.

The analysis shows that personal data can be processed at multiple stages of the system operation, albeit only in technically constrained and functionally limited contexts. This applies in particular to image and environmental data captured during the creation of the digital twin of the physical infrastructure, as well as to temporary image and localization data processed during runtime localization within the app or website environment. However, aryve consistently applies the principles of data minimization (Art. 5 (1) (c) GDPR) as a core principle, as well as pseudonymization, encryption, and other appropriate technical and organizational measures.

The system is designed to enable indoor navigation, improve airport operations and visitor guidance, and create an accurate digital representation of the airport infrastructure. The assessment shows that the processing is strictly limited in scope and duration, that it does not pursue the identification of individuals, and that the process and resulting data sets contain exclusively structural and infrastructural information without any personal reference or attribution.

With regard to the first phase for the implementation of the aryve Indoor Navigating system, namely the creation of the digital twin of the airport area, the processing can be based on Art. (1) (f) GDPR (legitimate interests). The legitimate interests consist in enabling indoor navigation, improving airport operations and visitor guidance, and creating an accurate digital representation of the airport infrastructure. The relevant processing remains focused on infrastructural mapping and does not culminate in data sets capable of relating information to identifiable persons. The implemented safeguards, in particular local processing, minimization of raw image data, automated detection and removal of individuals, and data minimization measures, significantly and effectively reduce the impact on any potential data subjects.

With regard to the second phase, namely the runtime localization of users within the airport environment via the app or web application, the processing can be based on Art. 6 (1) (b) GDPR as the processing is objectively necessary to provide the requested indoor navigation functionality to the User. At the same time, strictly limited incidental processing of third-party image data can occur where other individuals appear within the camera field of view. In this respect, Art. 6 (1) (f) GDPR serves as an additional legal basis. The assessment confirms that the processing is technically restricted to the localization process, that temporary snapshots are

**Memo**

**Data Protection Assessment of the aryve Indoor Navigation System**

Date: Berlin, 18. May 2026  
 By request of: aryve technologies GmbH  
 Subject: aryve Indoor Navigation System  
 Provided by: Kathrin Schürmann, Jana Charlene Minge

**SCHÖRMANN  
ROSENTHAL  
DREYER**

data transfers beyond the airport's own infrastructure. This solution is recommended by aryve. Each hosting model therefore has different implications for data protection compliance, in particular with regard to security measures and international data transfers. It is important to note, that the hosting provider or on-premises infrastructure environment is contracted directly by the Customer, who decides which hosting model is used and remains responsible for the corresponding deployment configuration.

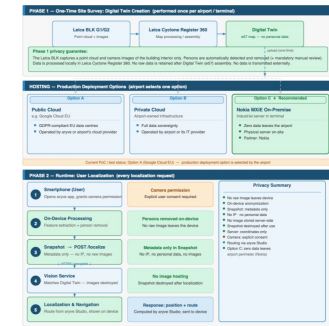


Figure 3: Illustration of the system architecture and processing steps of the aryve Indoor Navigation System

**Data Protection Assessment**

**Transparency**

**Privacy**

# Try Now

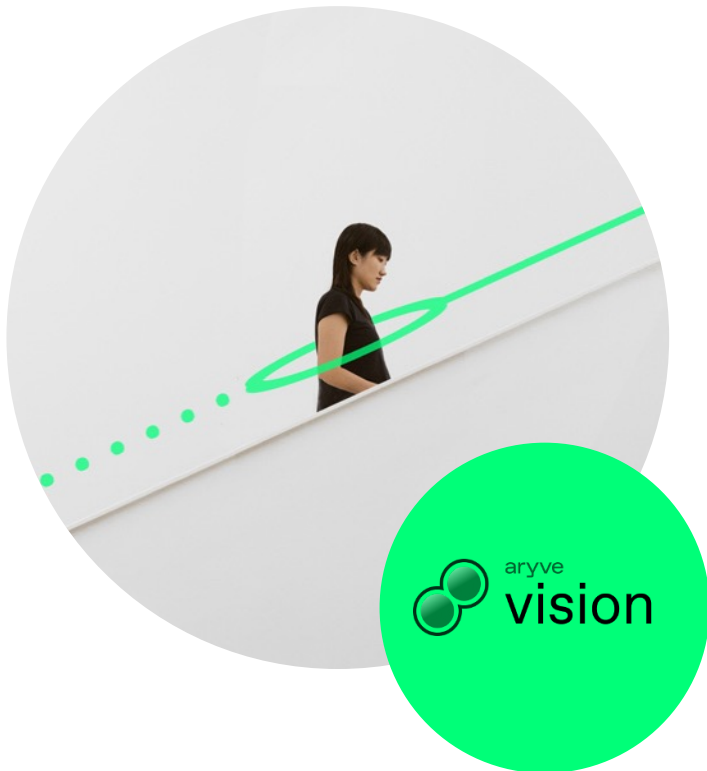


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# aryve Vision

## Localization service



**Cloud agnostic,** use major cloud providers (ex. Google, AWS, Azure...) or on-premise (ex. Nokia MXIE)

**Map generation:** automatically generates digital twins for VPS usage

**Localization service:** localize within a digital twin from an image

**Auto scalable:** based on requests and usage

# aryve Guide

## Mobile navigation tools



**Device agnostic:** running on mobile devices (iOS and Android) natively or web based

**Fast localisation,** based on Visual Positioning System

**Easy navigation,** using visual AR elements to reach the selected destination

**Location pre-selection:** automatically select map based on location

**GDPR compliant:** blur of sensitive data like, for example, faces of people

# aryve Studio

## XR Content Manager



### Web based

#### Scan Management

- Manage scans uploaded
- Manage e57 and aryve Capture scans
- Autogeneration of floor plans

#### Locations Management

- Easily create locations with no-code
- Create and manage multifloor maps
- Setup walkable and restricted areas
- Pre-visualize navigation paths

#### Content Management

- Edit locations content in 2D and 3D view
- Precisely setup point of interest (image billboards, videos, 3D animated models...)
- Enable CTA per point of interest (links, download files, calendar invites, coupons, etc...)

#### Access Management

- Define access rights per location, per floor and per areas within a floor
- Restrict point of interest content types and amounts