
CROWD·SCAN
THE FUTURE OF CROWD ANALYTICS
What's the ROI for your airport?

WHY CROWDSCAN?

WHY CROWD MONITORING?

Improved operational efficiency

Identify and **predict** areas of congestion to ensure a seamless passenger flow
Set thresholds to **trigger alerts**
Better and more efficient use of time for terminal operations
Dynamic staff allocation
Counting of **adjacent public transport platforms** (railway)
Curbside monitoring to adjust public transport capacity (buses, taxi, Uber, ...)

Improved strategic planning

Better predictions through **accurate** real-time data
More efficient (maintenance) planning
Improved information on **key retail locations**
Accurate data for improved passenger flow modeling
Long-term data to enhance strategic decision making

Improved Passenger Experience

Increased safety because of more efficient flow control
Seamless passenger flow, leading to improved **passenger satisfaction**
Realtime occupancy information
Integration with dynamic signage

BENEFITS OF CROWDSCAN

Cost-effective alternative for existing technologies

Easy-to-install

- Battery-powered sensors (no cabling needed) with a 3-year lifetime
- Mounting height: 1,5metres (no ceiling mounting)
- Flexible installation: no line of sight necessary

High accuracy

Real-time: 50ms per measurement interpretation

Ideal technology to create a general heatmap of your entire airport

- Easy to cover large areas
- Not affected by poor lighting conditions
- Smaller sub-regions can be defined

Ready to integrate with any existing data platforms (API, broker, ...)

Privacy friendly: no mobile phones, no cameras, no Wi-Fi, no personal data

WHO CAN BENEFIT FROM OUR DATA?

APOC staff

Security & police

Retail

Passengers

Executive Management

Public transport operators

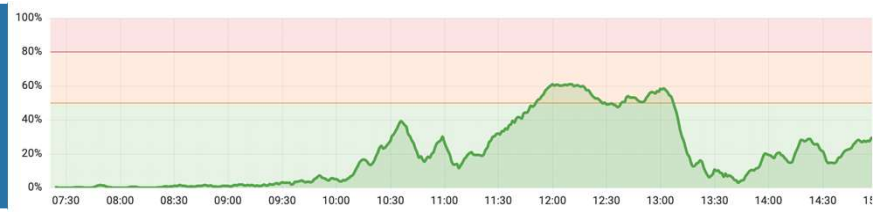
State authority

CROWDSCAN OFFERS REALTIME INFORMATION

Alerts

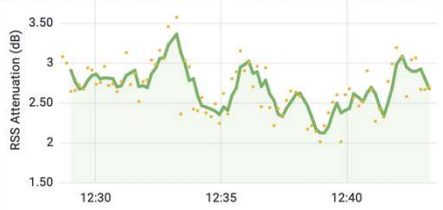
- Send Whatsapp, SMS, email message at threshold x

Capacity/Density

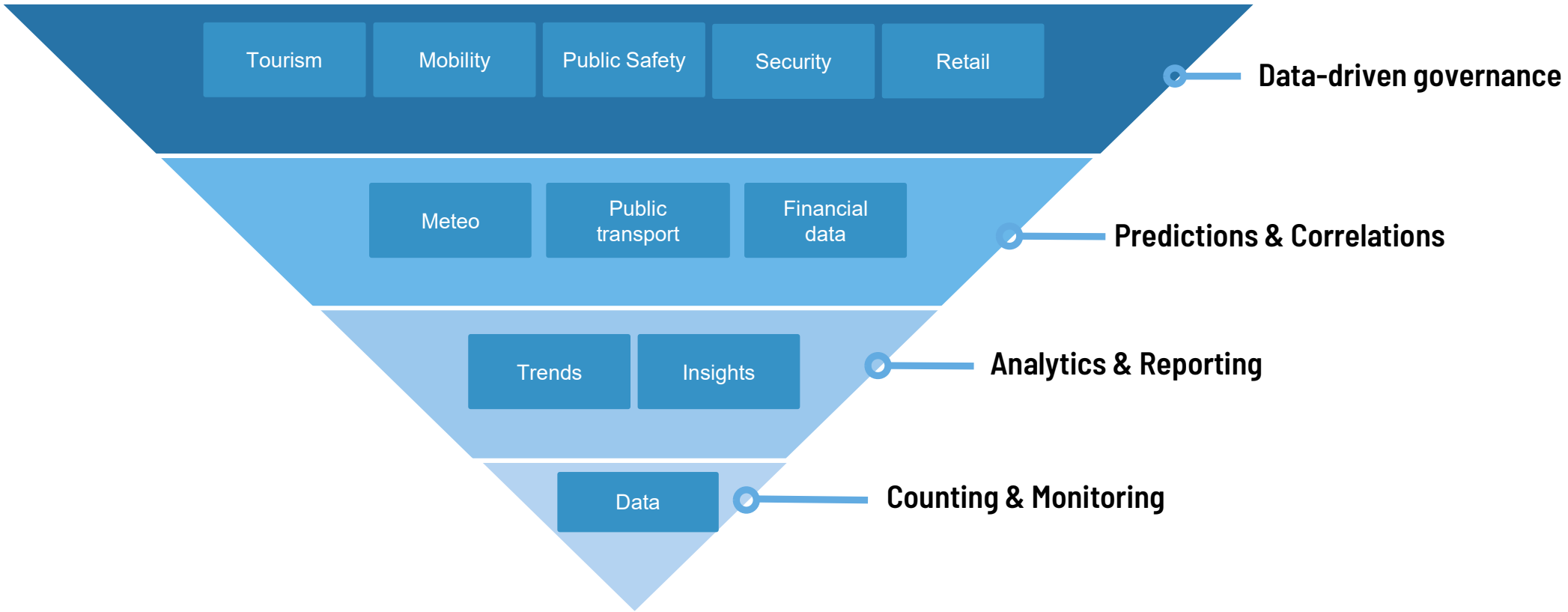


People count

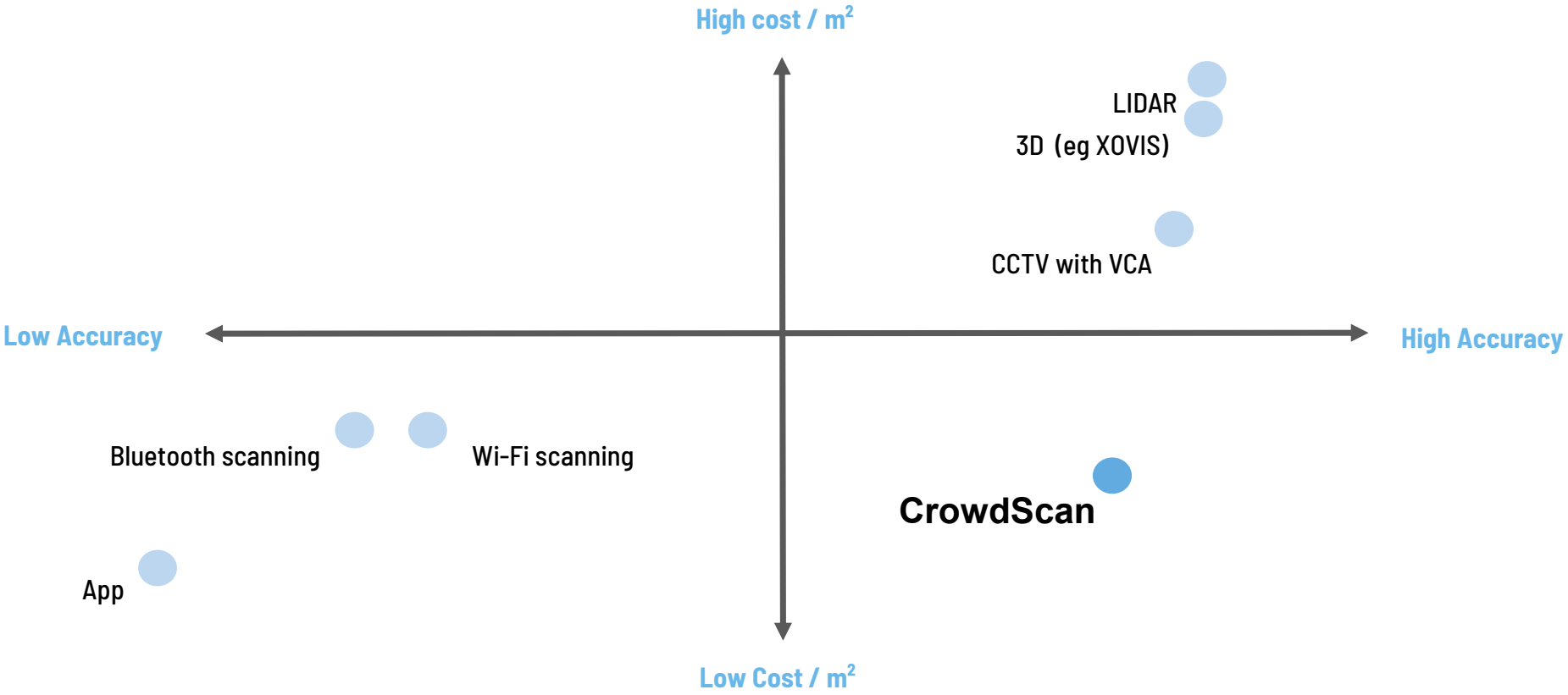
Signal strengths (dB)

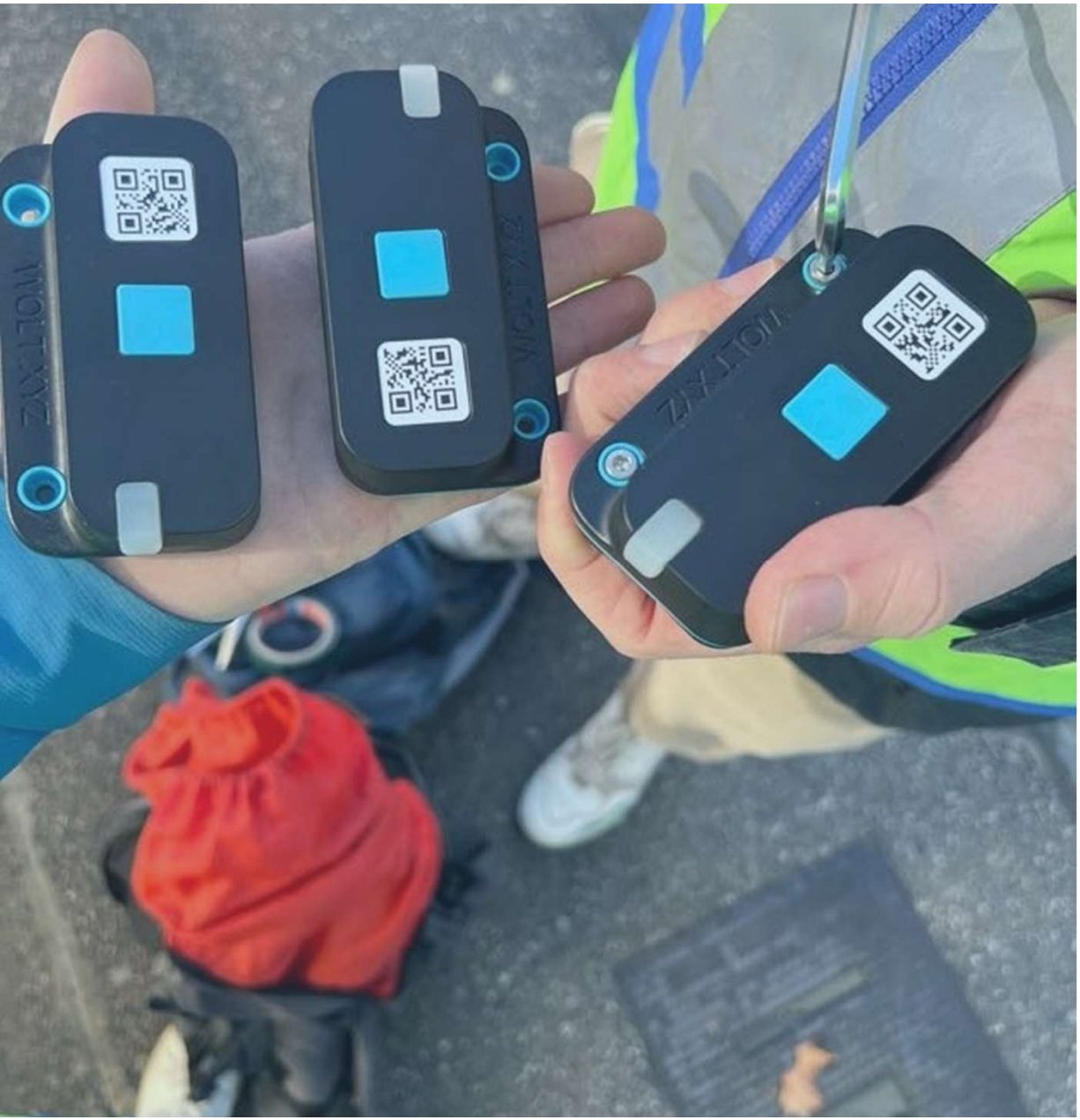


... OR IN POST-ANALYSIS TO MAXIMIZE YOUR ROI



CROWD DENSITY TECHNOLOGY COMPARISON

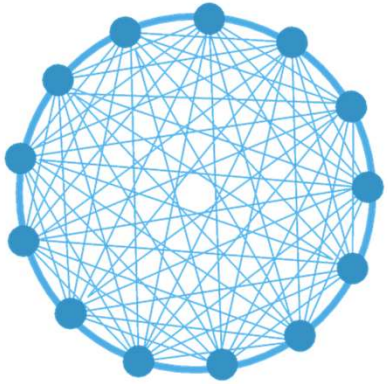




HOW IT WORKS

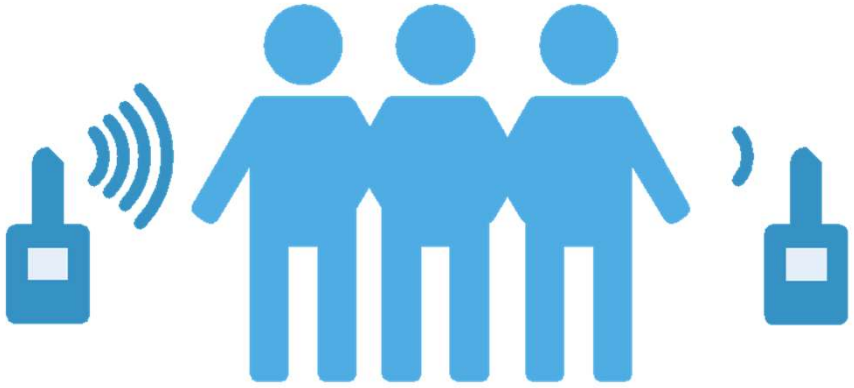
OUR TECHNOLOGY

CROWDSCAN measures the average attenuation of a wireless sensor network relative to the empty environment.



RF Transmission area with sensors

RF Transmission through body



TECHNOLOGY: Hardware

Node
Waterproof,
Battery-powered

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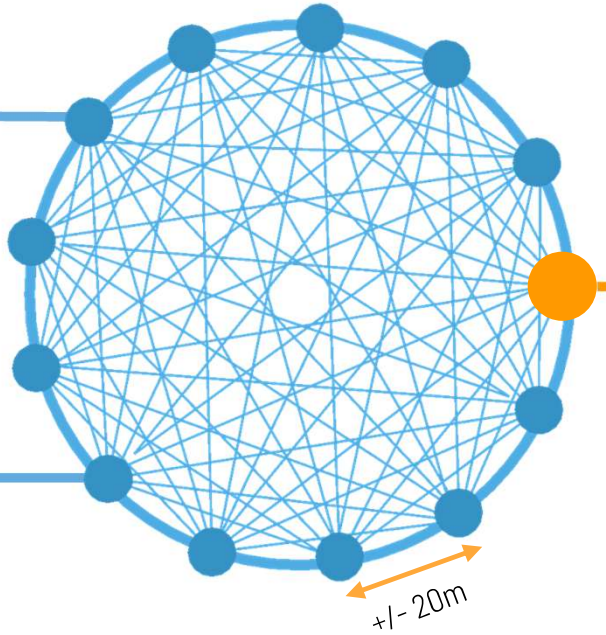
Waterproof,
Battery-powered



Max 300m

Cloud

Data processing, analysing & visualization

Gateway
Powered Network

TECHNOLOGY: zones

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Data processing, analysing & visualization

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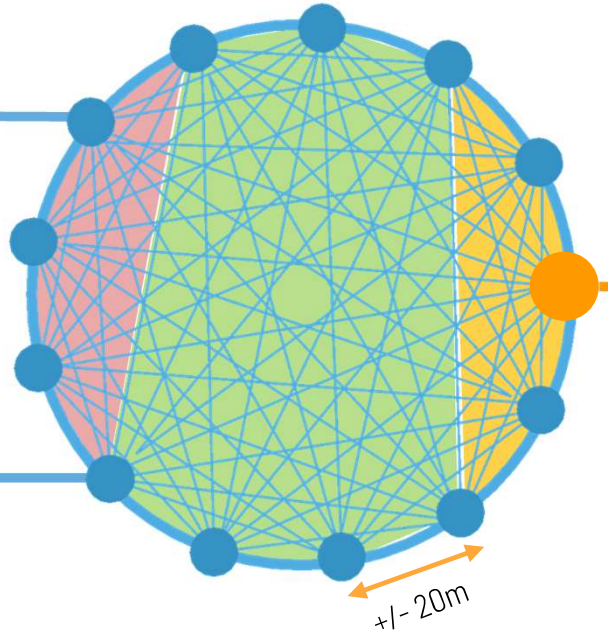


Max 300m

Gateway
Powered Network

IMPLEMENTATION PROCESS

Installation

- Sensors (on battery)
- Gateway (1 powerplug)
- +/- ½ day (for large area)
- **NO cables or PoE needed**
- **NO mounting at ceilings**

Calibration

- Setting the baseline
- Measure the empty environment
- +/- 5min

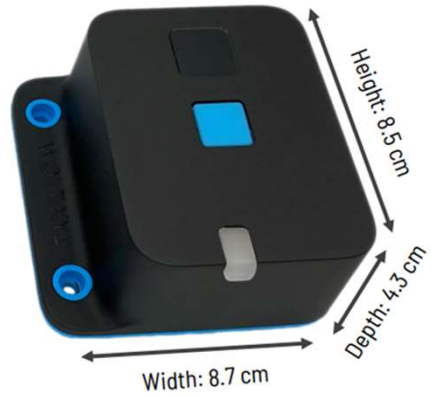
Training

- Train the algorithm with manual/existing countings
- +/- 10 data points at different densities
- +/- 1hr

Visualization or integration

- Number of people in each zone
- Capacity of each zone (based on 100% capacity)
- One day after training

Hardware Specs



Power source	Battery (3.7 V – 5,4 Ah capacity)
Attachment possibilities	screwed into wall metal Colson cable tie (around poles) with adhesive magnet (against metal plate)
Emitting frequency band	863 - 868 MHz
Battery life span	1 – 2 years (*)
Installation height	1.20 m – 1.60 m above ground
Weight	78g
Certification	C/CE – FCC

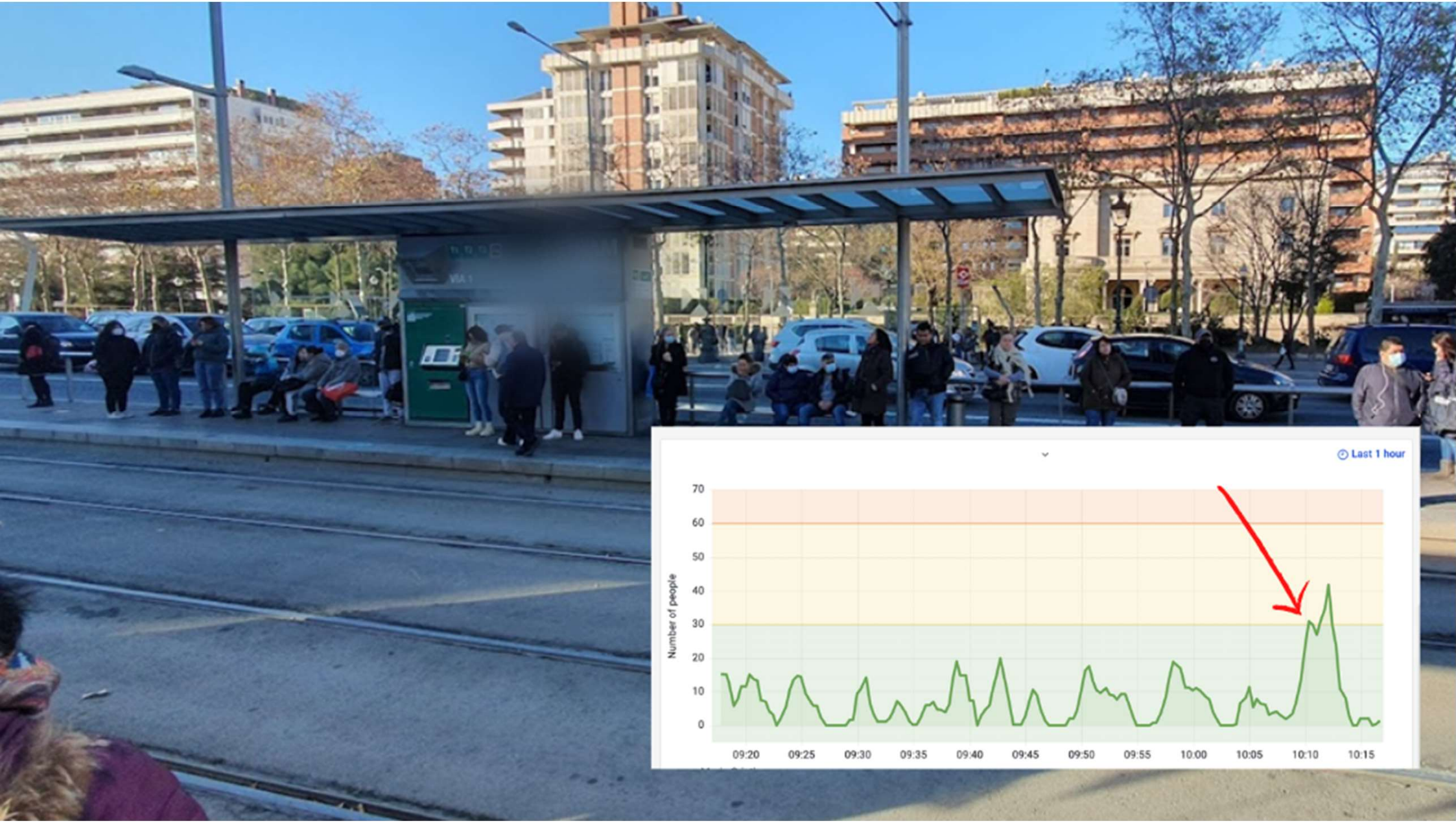
Power source	plug-in (220V) Power-Over-Ethernet (PoE)
Power consumption	2W
Attachment possibilities	screwed into wall attached with tie wrap
Emitting frequency band	863-868MHz
Communication	nanoSim 4G
Installation location	200m – 400m (outdoors)
Weight	1.8 kg
Certification	C/CE – FCC (pending)

USE CASES

PUBLIC TRANSPORT AND AIRPORTS

Antwerp Airport


Last 1 hour
Number of people
70
60
50
40
30
20
10
0
09:20
09:25
09:30
09:35
09:40
09:45
09:50
09:55
10:00
10:05
10:10
10:15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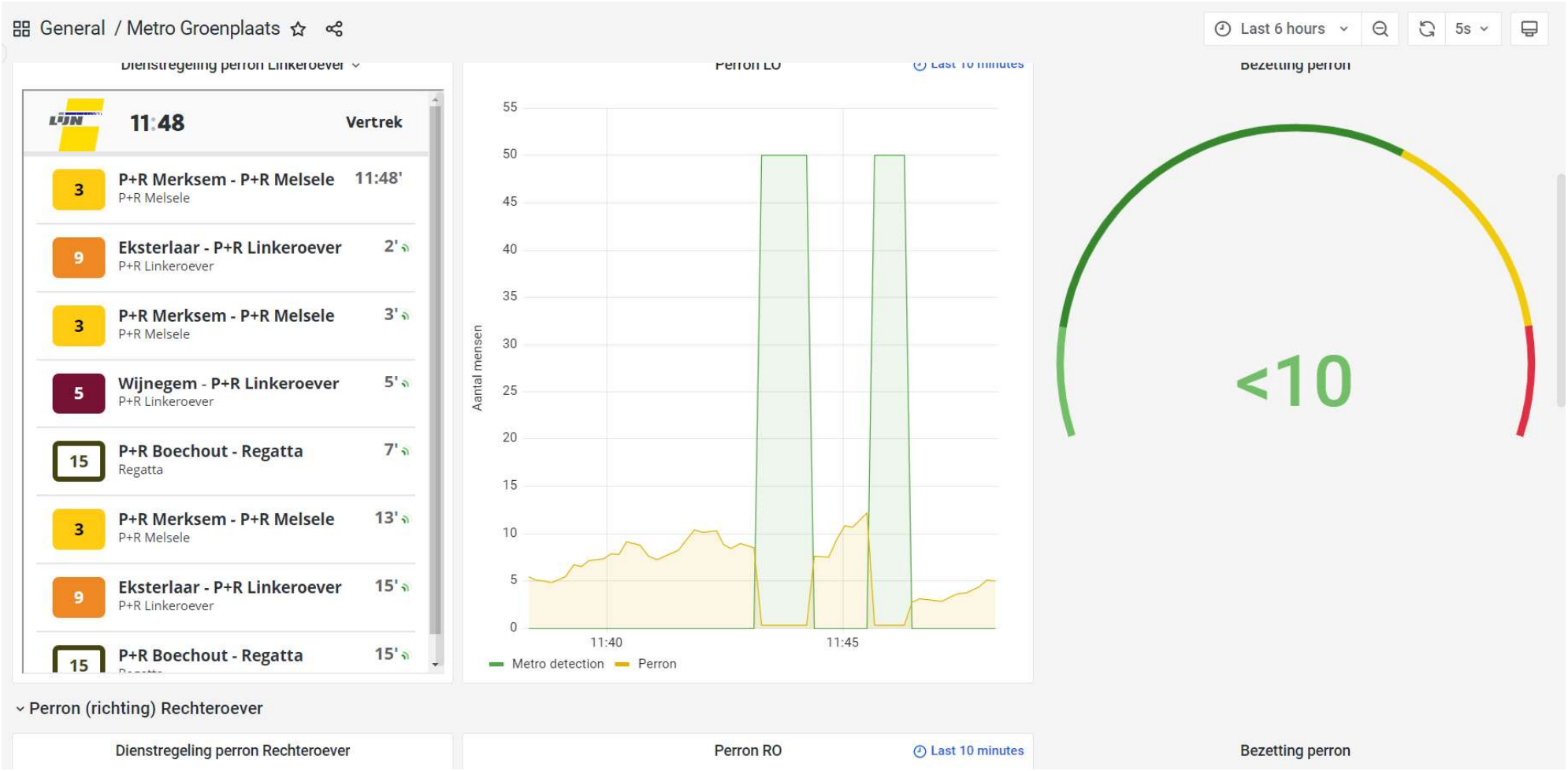
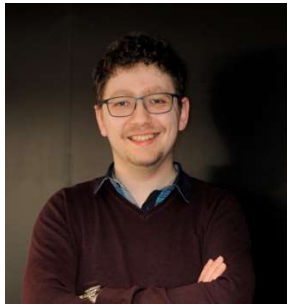
PLATFORM OCCUPANCY DATA (Antwerp subway station)



FOUNDING TEAM

CEO

Dr. Ing. Ben Bellekens



CRO

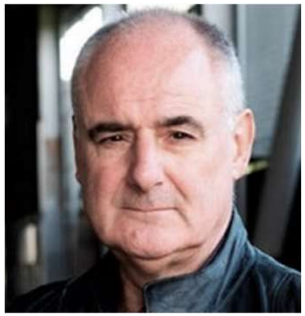
Dr. Ing. Stijn Denis

COO

Anton Dierickx
Crowd Specialist

Advisor

Prof. Maarten Weyn
Professor UAntwerp / Imec



Independent Board member

Prof. Dr. Keith Still

- Spin-off company of the University of Antwerp (Belgium) and IMEC research group
- Founded in June 2020
- Well-balanced technical & operational founding team

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