

URBAN MOBILE ROBOTICS

From idea to experiment:
How new solutions are
tested before investments

16.4.2026

Urban Mobile Robotics - The urban environment as a development platform for robotics



Euroopan unionin
osarahoittama



Elinvoimakeskus

FORUM
VIRIUM
HELSINKI

 Metropolia

Program 16.4.26 9.00–12.00

9.00–9.15	Meet & Greet (coffee)
9.15–9.30	Opening: Why experimentation before investment? (Metropolia)
9.30–10.10	Cases: Underground City (Jussi Kuikka) – funding path in practice (in Finnish) Oinride (Ahmed Abdelazim) – funding path in practice (in English)
10.10–10.25	Break
10.25–10.45	Company talk from ExpeditionX (Joonas Holmi): What did the funder want to see before the green light?
10.45–11.15	Urban Mobile Robotics: Selected pilots (Metropolia)
11.15–11.25	Preview of Scale Down: A new robotics testing platform
11.25–12.00	Visit to the Robo Garage and Scale Down space & Discussion
12.00 →	Pizza & networking



Esittelyt

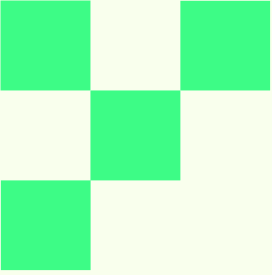
Kuka olet?

- Mistä organisaatiosta tulet?
- Oletko tällä hetkellä enemmän ostamassa vai myymässä?
- Etsitkö ratkaisua vai tarjoatko sellaista?

Who are you?

- Which organization are you from?
- Are you currently buying or selling?
- Looking for a solution or offering one?

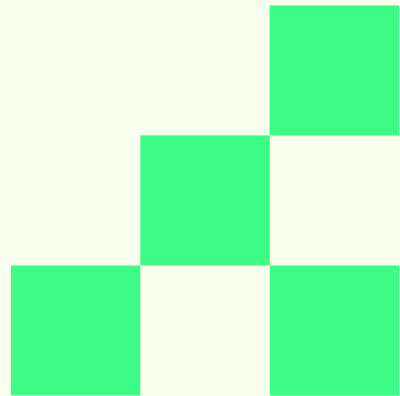


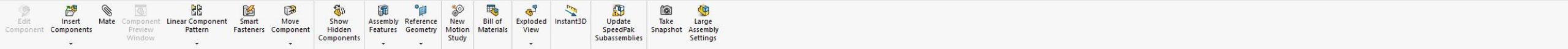


Opening

Why experimentation before investment?

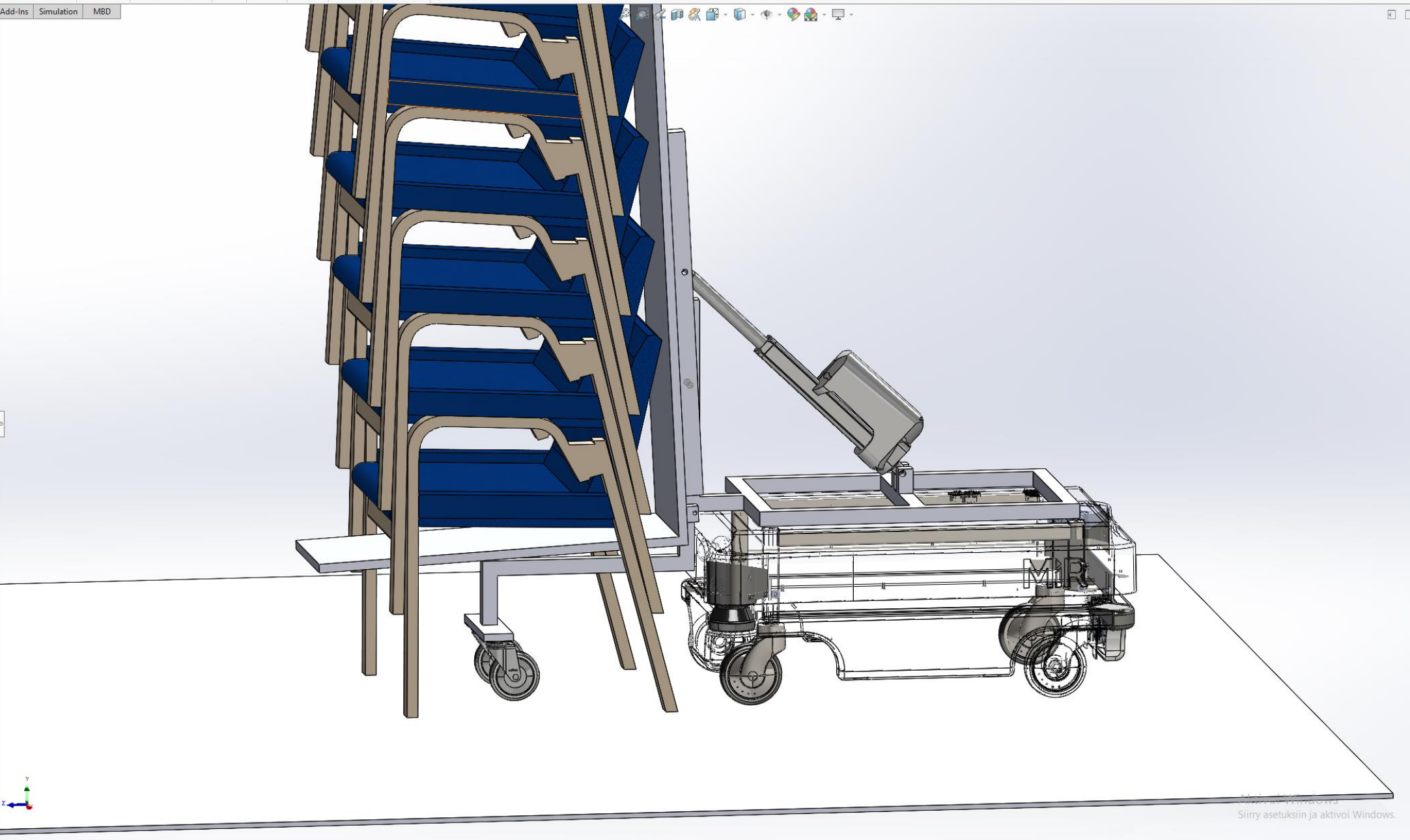
Metropolia





Assembly Layout Sketch Markup Evaluate SOLIDWORKS Add-Ins Simulation MBD

- Sensors
- Annotations
- Front Plane
- Top Plane
- Right Plane
- Origin
- (-) TUKIRUNKO<1> (Default) <<Default>_Display
 - History
 - Sensors
 - Annotations
 - Solid Bodies(1)
 - Material <not specified>
 - Front Plane
 - Top Plane
 - Right Plane
 - Origin
 - Boss-Extrude1
 - Boss-Extrude2
 - Boss-Extrude4
 - Mirror1
 - Boss-Extrude5
 - Boss-Extrude6
 - Cut-Extrude1
 - Mirror3
 - Boss-Extrude7
 - Cut-Extrude2
 - Boss-Extrude8
 - (-) Sketch12
 - Boss-Extrude9
 - Boss-Extrude10
 - Boss-Extrude11
 - Boss-Extrude13
 - Mates
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 - Mates in Assem3
 - History
 - Sensors
 - Annotations
 - Front Plane
 - Top Plane
 - Right Plane
 - Origin
 - (-) MiR100<1> (Default) <<Default>_Display State
 - Mates





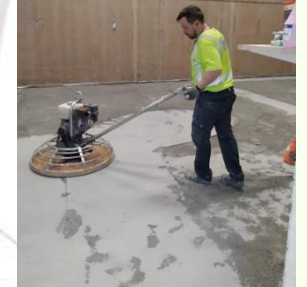
EVERY
MOVE COUNTS

EveryMoveCounts
everymovecounts.com



Demand for project space and collaboration on new technologies

- Need for physical project workshops
 - No clear concept/product for executing diverse projects
 - New technologies
 - Demand for an open collaboration platform
-
- PalRob 2015–17
 - Roboreel 2017–19
 - Digi-Flash 2019–21
 - Big-Flash 2021–23
 - TECHBOOST 2024–25
 - Urban Mobile Robotics and Scale Down
 - Garage was launched as the 'working title' of a construction project



Innovations are born in garages

- Where companies, universities, and technology meet
- Open learning spaces for experimenting and learning
- Robo & AIoT Garages at Myyrmäki Campus
- Facilities and tools for pilots, experiments, and scaling
- How robotics and new technologies drives competitiveness and solves global challenges
- WE BRING YOUR IDEAS INTO LIFE
- <https://www.metropolia.fi/en/rdi/collaboration-platforms/garage>

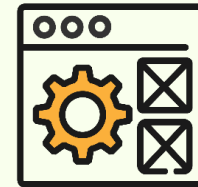
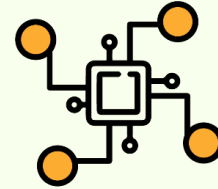


Future-driven services and methods for Industry 4.0 and beyond

- SPIN - Needs assessment
- MEGASPIN - Workshop
- Summer wind - Proof of Concept
- Lightning - Prototype / demo
- Big storm - Implementation Project / MVP

- Projects (commercial + funded)
- Support in applying for funding

- Innovation projects + other courses
- Internships and theses
- Garage club



Because evidence beats assumptions

- Reduce risk
 - Test what actually works before committing resources
- Validate value
 - Show real impact, not just assumptions
- Improve decisions
 - Data from pilots supports funding and scaling
- Save time and money
 - Fail fast – or prove what scales
- Increase credibility
 - Concrete results matter to investors and partners



Coming events / tulossa

Miten tehdä vakuuttava sijoittajaesitys, 18.5., 9.00–11.00

Yritykset pääsevät kirjoittamaan sijoittajaesityksen (investor pitch deck) sekä julkisia rahoitushakemuksia Inventure.VC:n **Lauri Kokkilan** ja Metropolian **Antti Liljaniemen** opastuksella.



Ilmoittaudu / sign up!

klo 9.00–10.00: Voittava Investor Pitch Deck, Lauri Kokkila, Partner, Inventure.vc. Lauri on yksi Pohjoismaiden luotetuimmista sijoittajista, jonka salkusta löytyy menestystarinoita kuten Swappie ja Amazonin ostama Umbra.

klo 10.00–11.00: Julkinen rahoitus ja hankeyhteistyö Antti Liljaniemi, Metropolia.

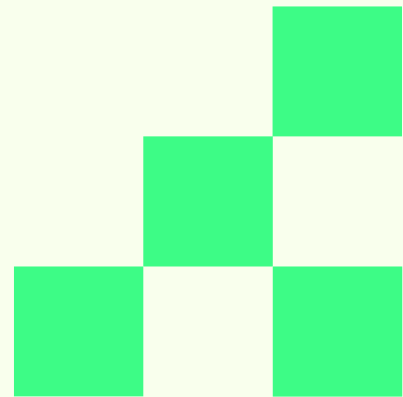
Robo Garagen vetäjä Antti on kokenut asiantuntija julkisten rahoituskanavien ja yritys yhteistyön rajapinnassa. Hänen tiiminsä on yhteiskehittänyt satoja projekteja eri yritysten kanssa.

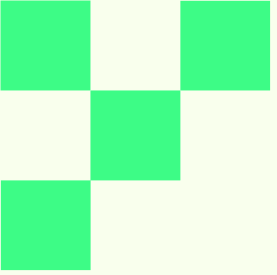


Cases

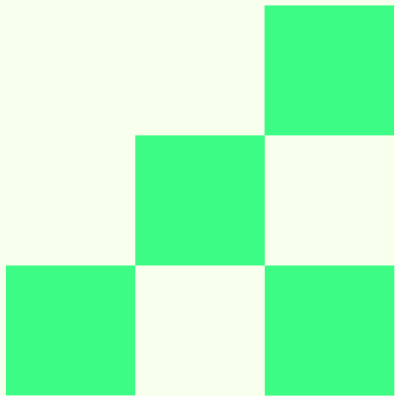
Underground City (Jussi Kuikka)

Oinride (Ahmed Abdelazim)





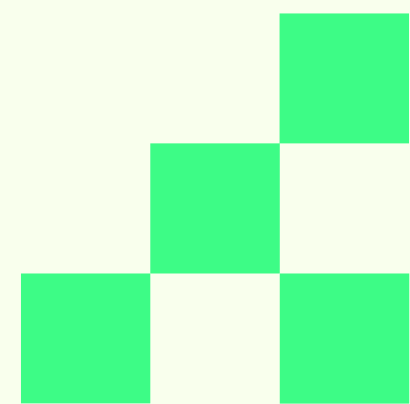
Break

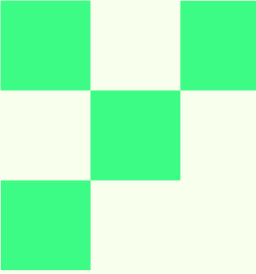




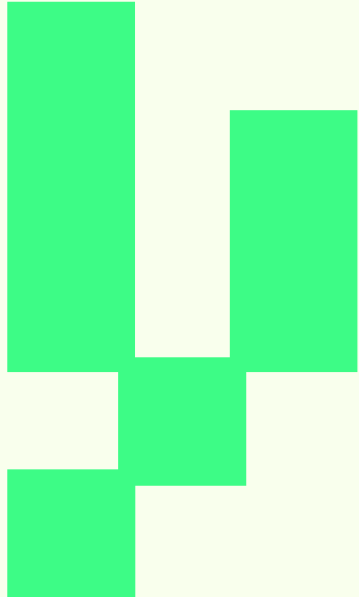
Company talk

ExpeditionX (Joonas Holmi)





Pilot projects



Smart Ground

- GIM Robotics Oy: Monitoring and modeling infrastructure
- Starship Technologies: Wide-scale charging infrastructure for delivery robots

Blue City

- ExpeditionX: Autonomous 24/7 capable underwater monitoring and defence systems
- System Kirsilä Oy: Environmental monitoring

Urban Sky

- Rumble Tools: Situational awareness with drones

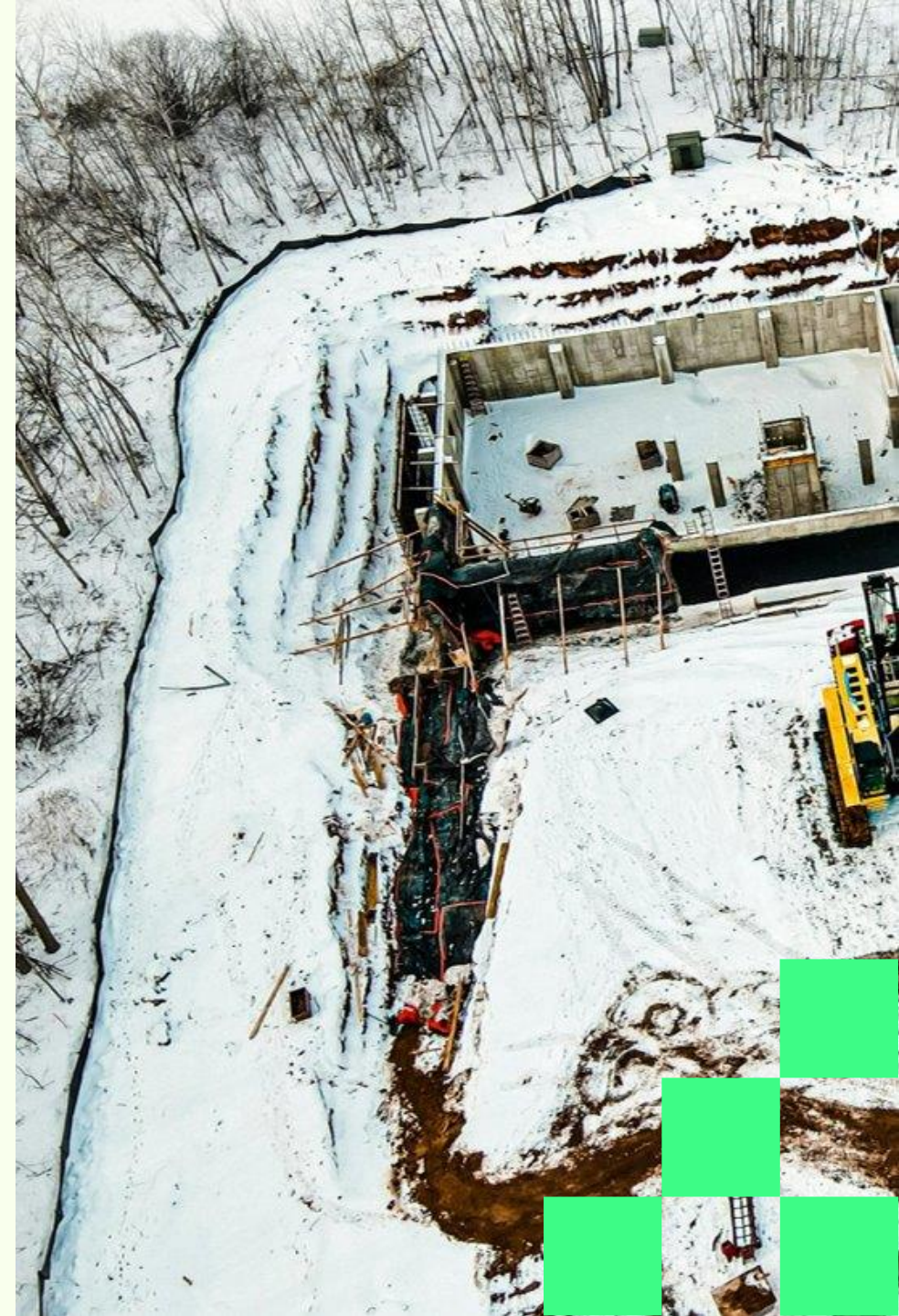
Data

- Lumi DB: Shared data platform for robotics pilots



Smart Ground

**A functional and sustainable
city throughout the year**



Starship Technologies

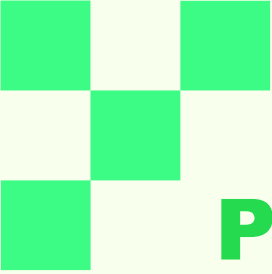
Description: Develops small autonomous delivery robots for urban areas

Founded: 2014

Country: Estonia

Pilot challenge: Wide-scale charging infrastructure for delivery robots





Pilot overview

What challenge does the pilot solve?

- **Urban charging infrastructure for autonomous delivery robots**

How?

- **Ideation and concept development + testing charging stations in Helsinki area**
- **Design and prototyping of improved winter solutions**

When?

- **Spring 2026 + onwards**

Where are we now?

- **At the beginning**

Next steps

- **Problem-solving**
- **Brainstorming prototypes**
- **Concept development**
- **Prototyping**



GIM Robotics Oy



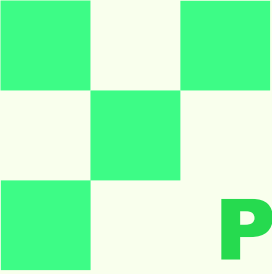
Description: Creating software that enables precise operation of mobile machines and robots in any environment.

Founded: 2014

Country: Finland

Pilot challenge: Monitoring and modeling infrastructure, automation and logistics of winter maintenance





Pilot overview

What challenge does the pilot solve?

- Identifies changes in urban infrastructure

How?

- By checking the snow conditions
- Virtual snowplow signs
- Infrastructure and data modeling platform

When?

- Summer & winter 26

Where are we now?

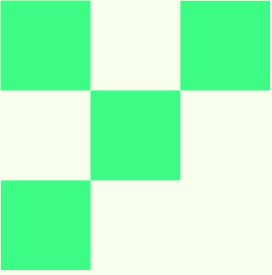
- At the beginning



Next steps

- Scanning a specific area of Helsinki
- Defining what is scanned in the infrastructure
- Requirements and specification for the user interface
- Development of the user interface and plowing logic





Urban Sky

**A smart and controlled
urban airspace**





Rumble Tools

Description: Develops autonomous drone systems.

Founded: 2016

Country: Finland, Imatra

Pilot challenge: Situational awareness with drones



Rumble Tools

SKYNEST SYSTEMS





Pilot overview

What challenge does the pilot solve?

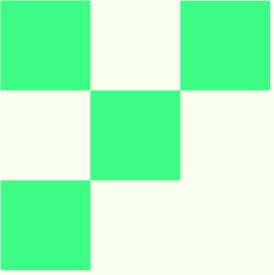
- The goal is to use autonomous drones to support monitoring and inspection in urban environments.

How?

- The drones operate from automated stations and collect data from the air:
 - Monitoring infrastructure such as roads, buildings, and construction sites
 - Detecting heat leaks and energy loss in buildings
 - Using AI tools to analyze video and image data
 - Sending automatic alerts when problems or unusual events are detected

When?

- Construction site monitoring in the summer, heat leak detection in winter



Blue City

**A safe and digitalized
marine city**





Expedition X

Description: Autonomous 24/7 capable underwater drones for monitoring and defence systems

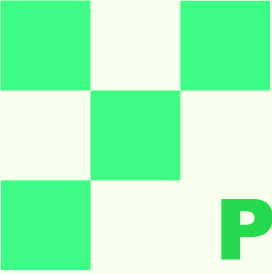
Founded: 2024

Country: Finland

Pilot challenge: Safe beaches and ports

EXPEDITION X





Pilot overview

What challenge does the pilot solve?

- Port and harbor monitoring, bridge areas and water infrastructure

How?

- Micro-drone
- Following predefined routs
- Regularly inspecting vessels, structures and pipelines
- Swarm collaboration

When?

- Spring 2026–Spring 2027

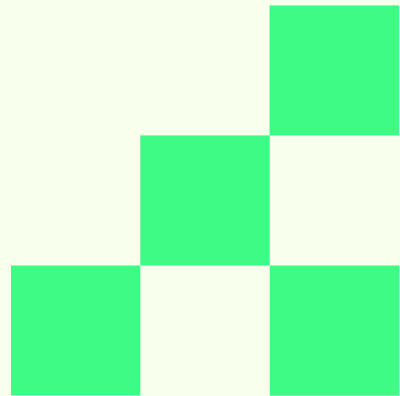
Where are we now?

- Developing 3rd generation micro-drone



Next steps

- **Complete core system development and integration**
- **Perform initial water testing**
- **Validate sensor and mission data**
- **Begin autonomous navigation and mission-feature development**





System Kirsilä Oy

Description: Developing surface vehicle for monitoring and data acquisition

Founded: 2012

Country: Finland

Pilot challenge: Water quality monitoring and seafloor mapping



Pilot overview

What challenge does the pilot solve?

- Water quality monitoring
- Seafloor mapping
- Possible use of camera data for situational awareness

How?

- 2 x 3 m catamaran
- Solar power usage
- Sensor fusion for environmental measurement
- Multibeam echosounder

When?

- Spring 2026–Spring 2027

Where are we now?

- Developing the catamaran and sensor payload



Next steps

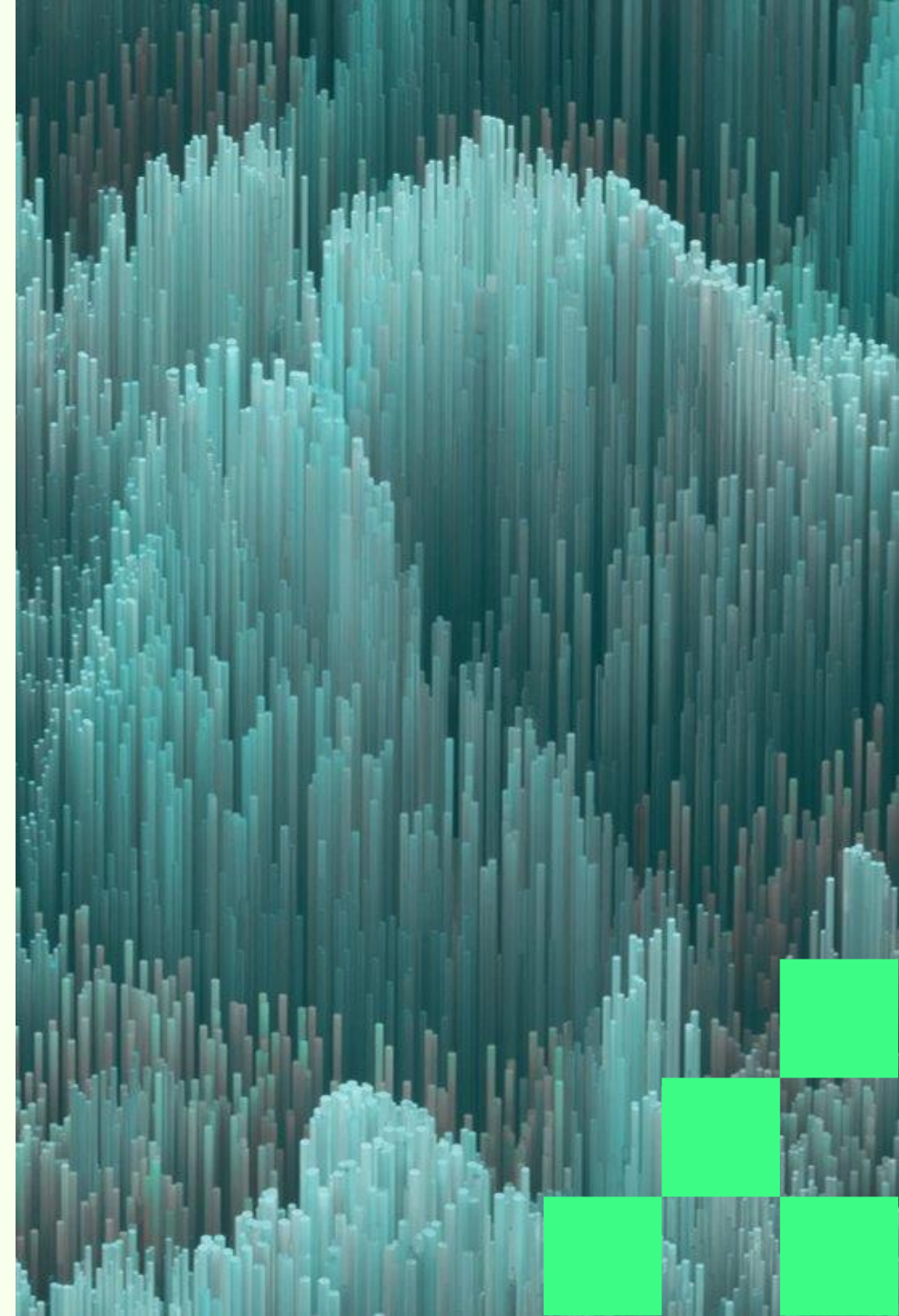
- **Finalizing the catamaran platform**
- **Verify basic water operation**
- **Integrate the sensor payload**
- **Develop data acquisition and logging**
- **Conduct real environment pilot tests**





Data

Data integration with LumiDB





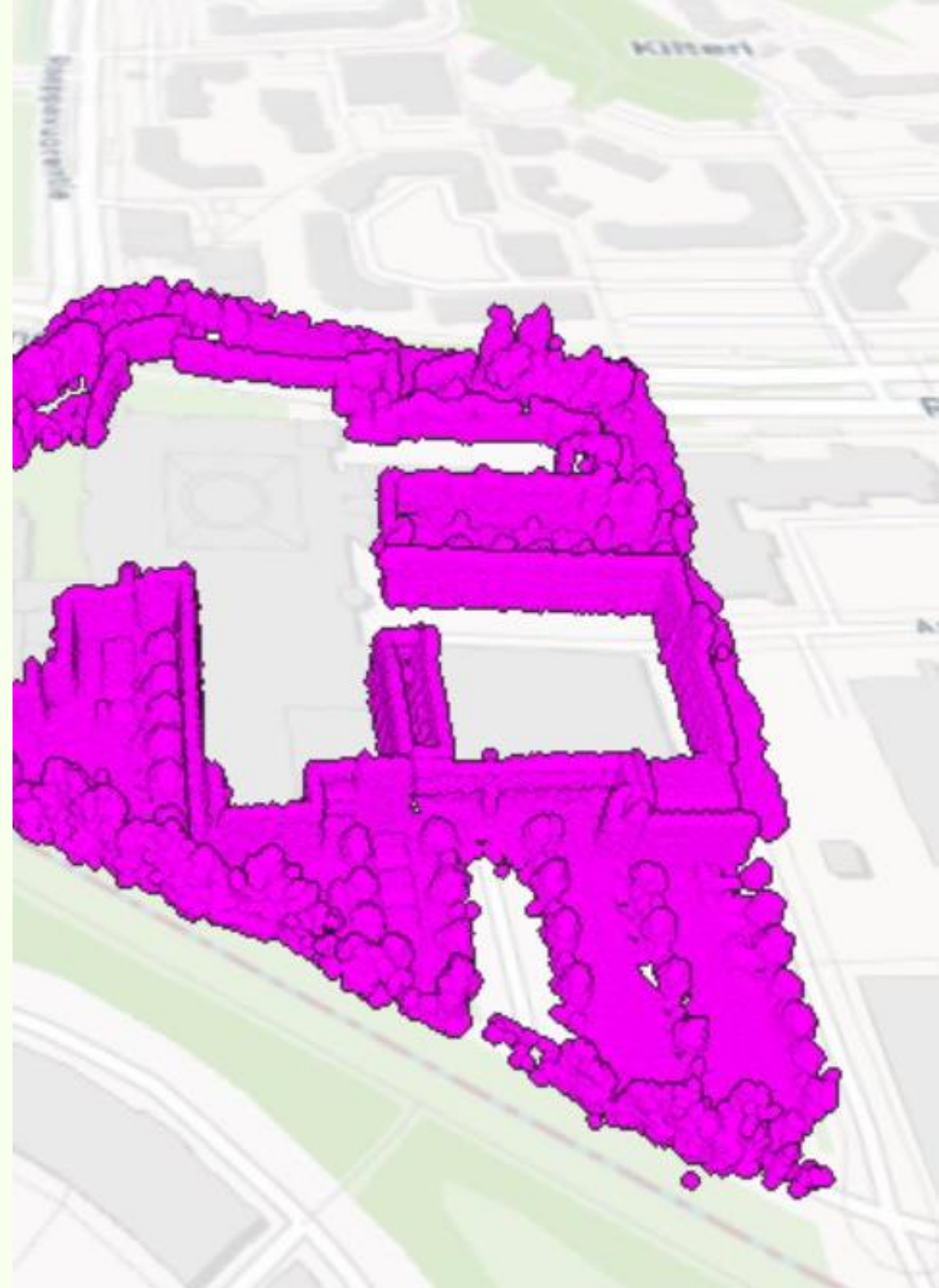
LumiDB

Description: A 3D point cloud database

Founded: 2023

Country: Finland

Role in the project: Shared data platform
for the robotics pilots





Pilot overview

What challenge does the pilot solve?

- Collect data from all robotics pilots in one place, so it can be reviewed, combined, and used for further development

How?

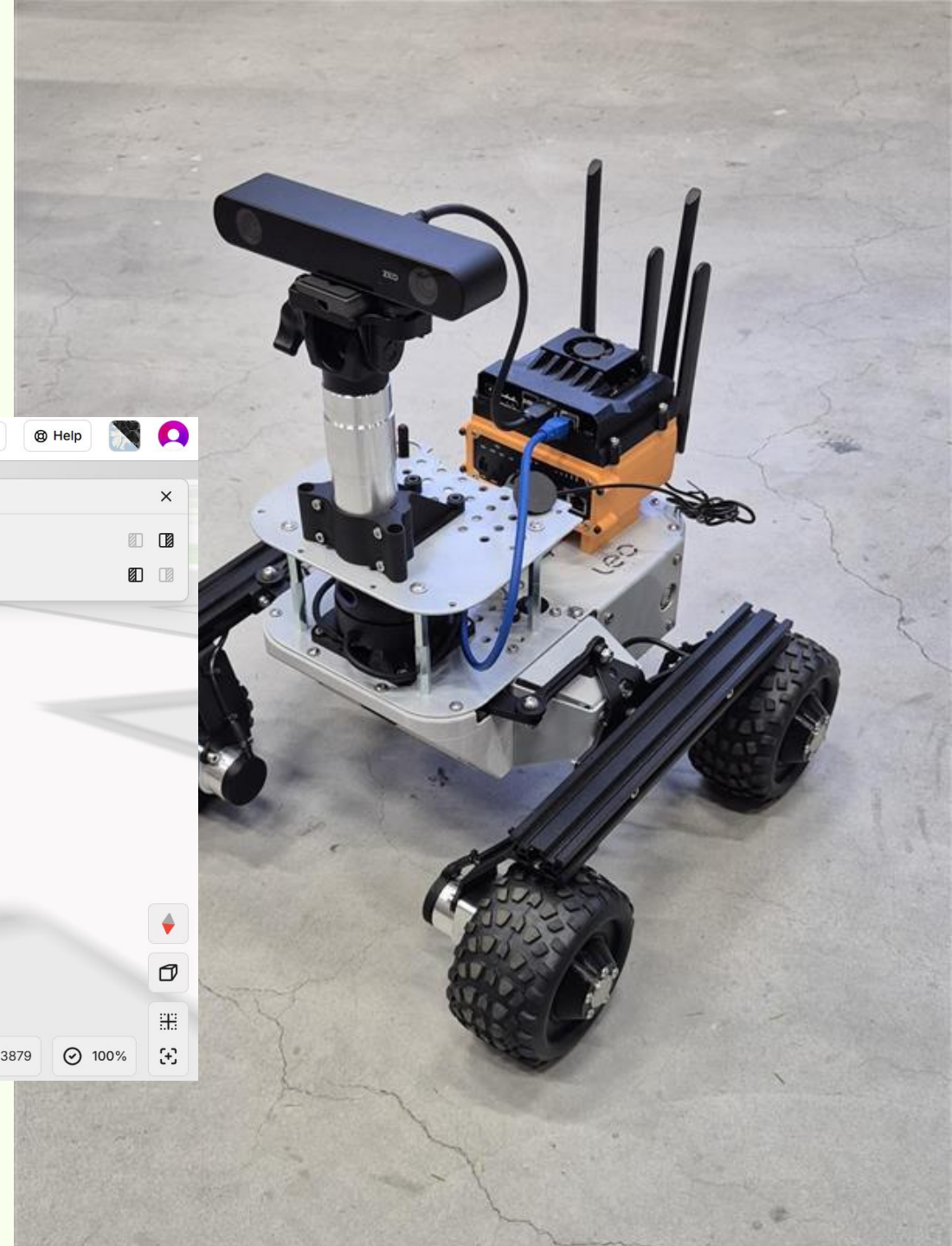
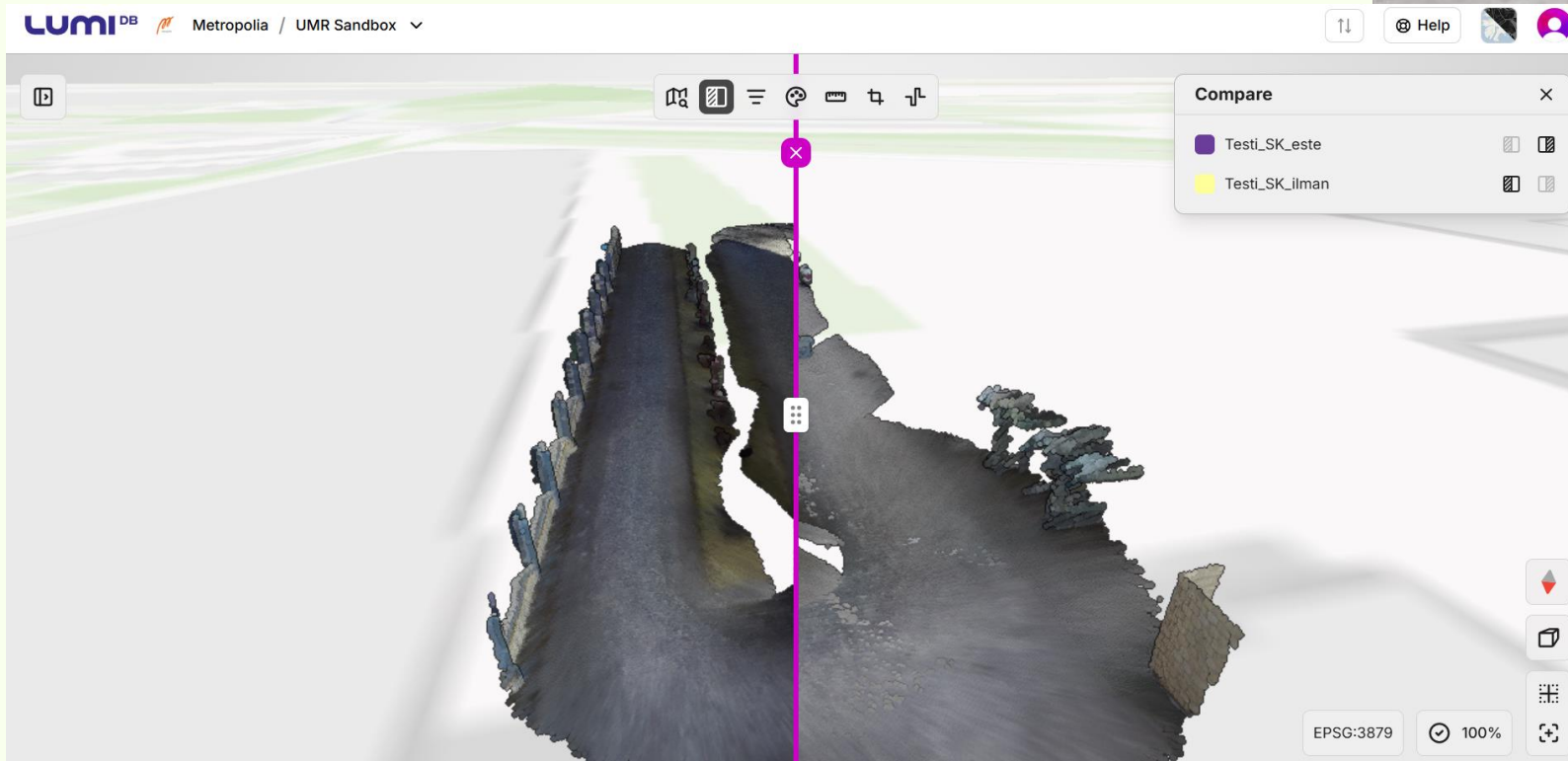
- Receives 3D point cloud data from ground, air, and water robots
- Stores and combines data from different sources
- Enables easy viewing and analysis of data
- Provides APIs for further use

When?

- Throughout the Urban Mobile Robotics project



Demot 1





Demot 2

Air Quality System

