

MOBILITY LAB HELSINKI



Business Helsinki

FORUM
VIRIUM
HELSINKI



From Helsinki City Strategy:

Helsinki will be an attractive city for people and companies that work to make the world a better place. At the same time, we will continue our work to make our everyday life more smooth, pleasant and enjoyable.

Helsinki actively cooperates with universities and businesses in research and innovation projects.

Helsinki must be an enticing place for testing out new solutions in an urban environment.

A place of growth

Helsinki City
Strategy
2021–2025

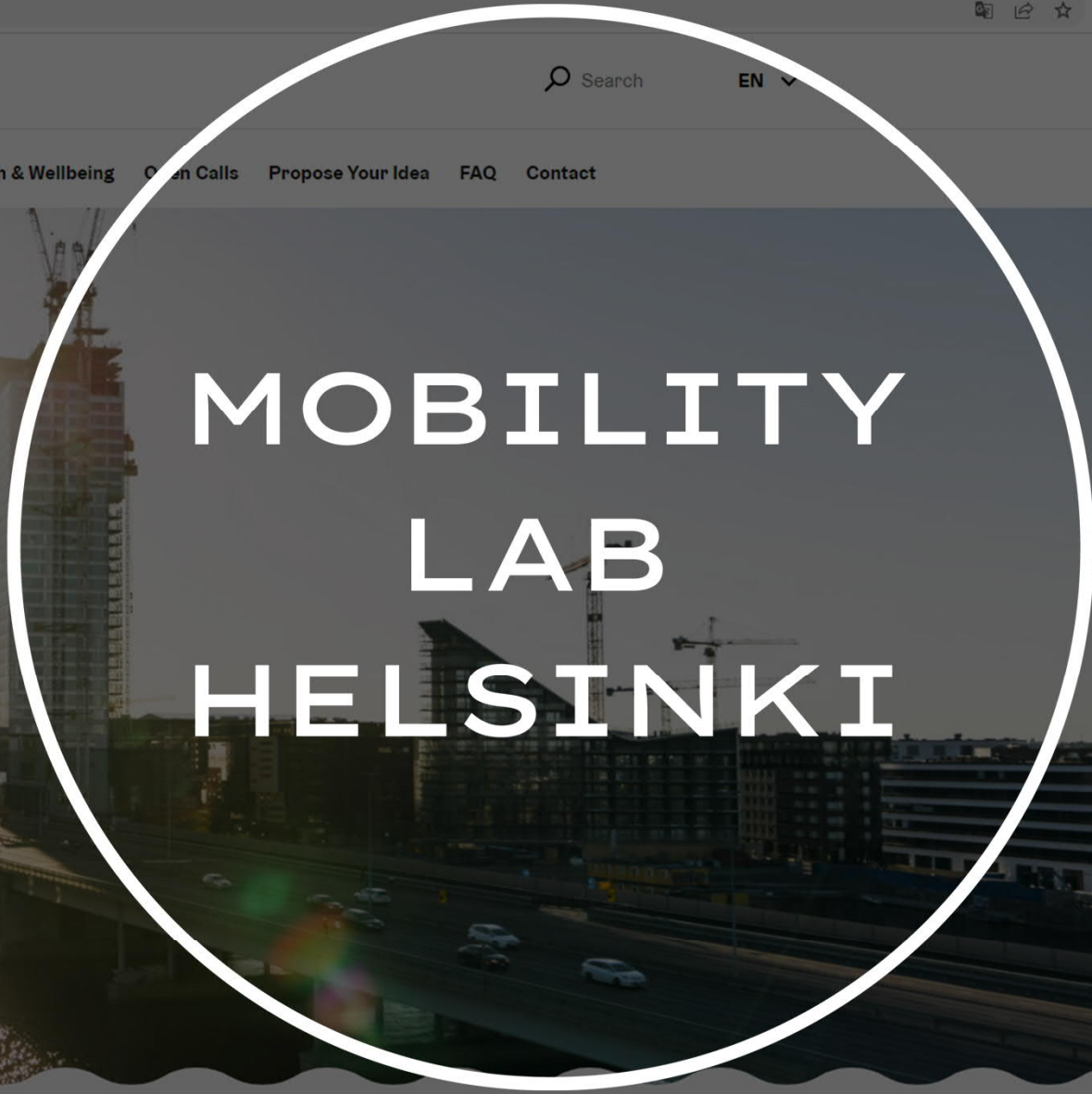


Helsinki

Welcome to explore experimentation opportunities in Helsinki!

Through the Testbed Helsinki website you can comprehensively find development and experimentation opportunities for new products and services offered by the City of Helsinki. The site is specifically aimed at companies and RDI actors. The key content areas of our testing platform activities are EdTech, Smart Mobility, Built Environment, Circular Economy and Health & Wellbeing.

Read more



Helsinki as a testbed

- Utilising city's resources (infra, buildings, street environment, ...), procurements, investments and service units as a testbed for developing new innovations, see testbed.hel.fi
- The objective from economic development point of view:
 - Supporting companies' research, development and innovation (RDI) activity and growth
 - Supporting creation of new business, and
 - Producing better services for the city and citizens



Objectives

1. Ecosystem:
Collaboration with different stakeholders, development and innovation community and creating new projects and pilots.
2. Digital twin:
Improving the usability and usefulness of data and APIs, developing tools for a mobility digital twin.
3. Testbed:
Enabling and supporting testing and developing new smart mobility solutions in practice, in the real urban environment.



Collaboration, communication, concrete piloting

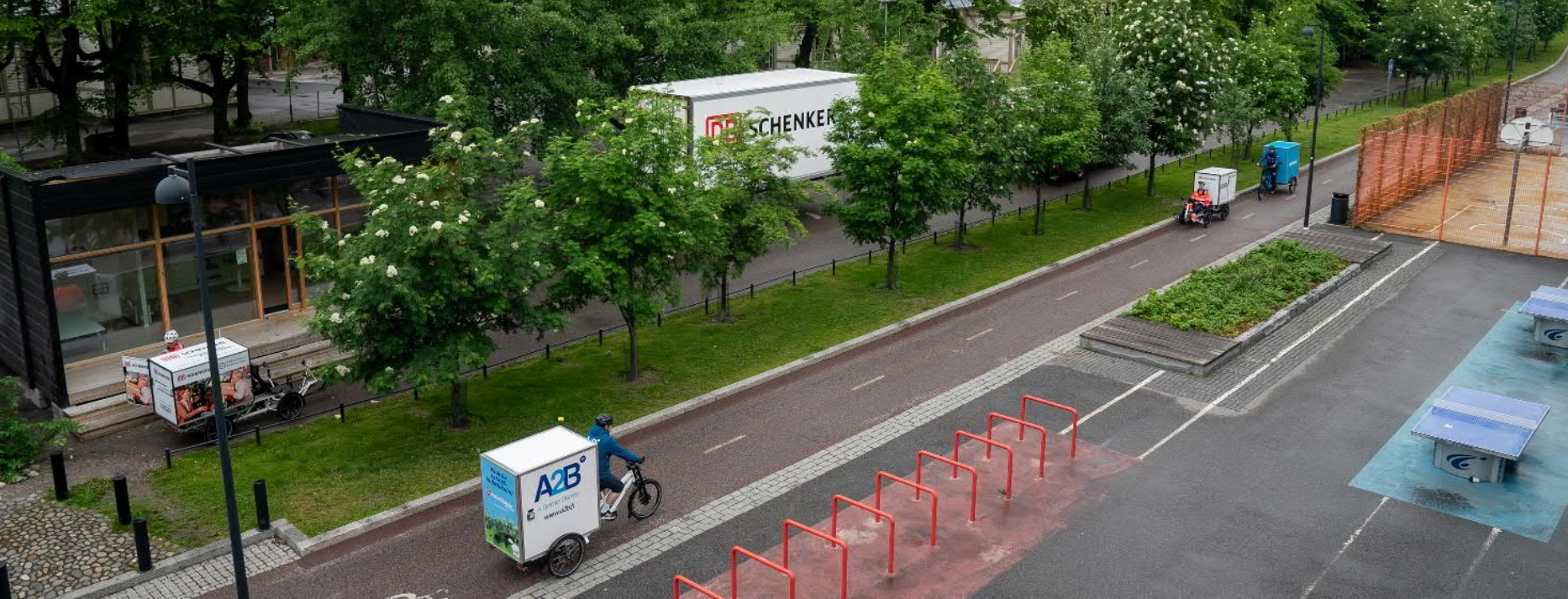


Locations and implementations

- Finding suitable places for ideas
- Complementary data
- Installation possibilities
 - e.g. power, permits
- Traffic arrangements



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From on-demand electric ferries...



8K-tarkkuuden videokuvaa dronesta Helsingin Jätkäsaaresta. Source: mobiili.fi 2.3.2020

...to streaming 8K video
over 5G from drones



Central railway station



Länsiväylä



West Harbour



Jätkäsaari

Population

ca. 10 000 (2020) >
18 000 (2025)



116ha/1,16km²



Building rate (2019)

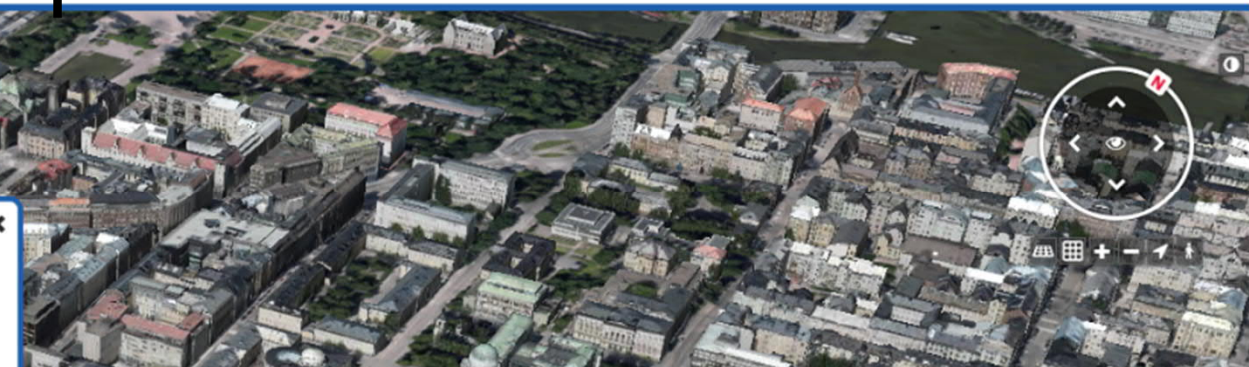
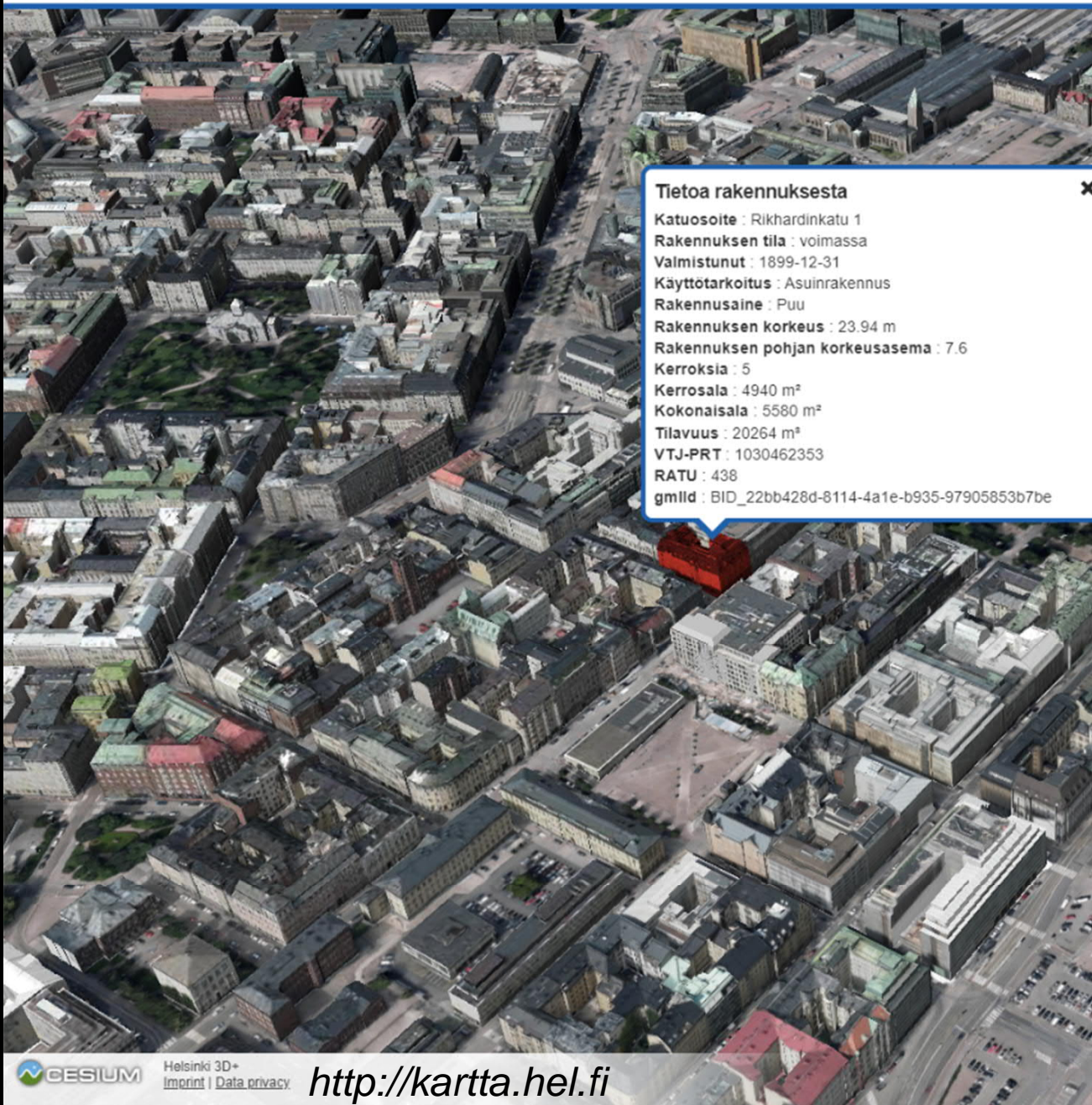
1300 apartments ready
600 building permit
granted



Harbour

Regular connections to
Tallinn
8M passengers / year





Reittipias

Itinerary suggestions

Työ

Sähkötäjänkatu 6, Helsinki

I'm traveling by

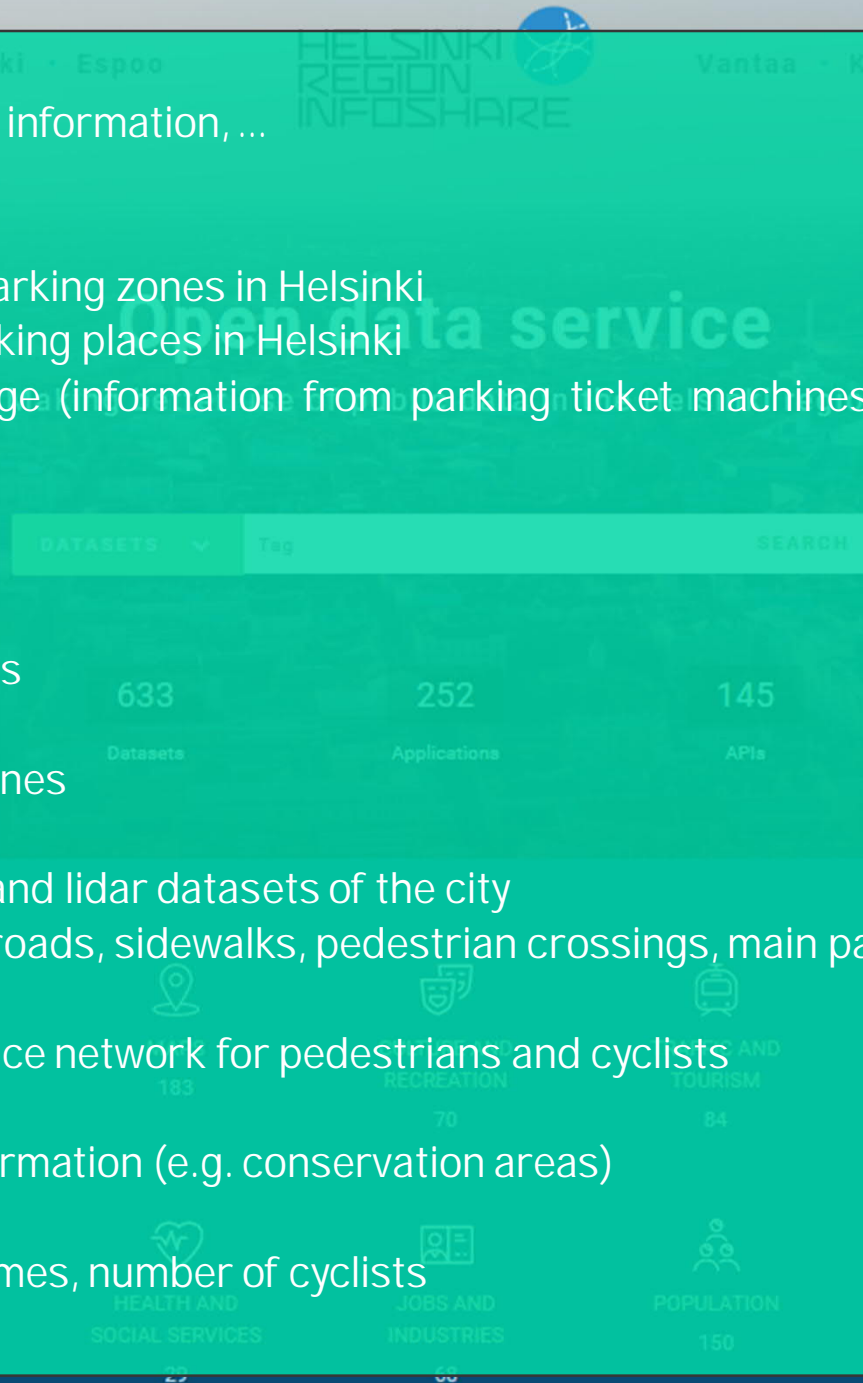
21:10 Today Leaving at Settings

Default settings

21:13	Unioninkatu	Kaisaniemenpuisto	21:38	24 min	900 m	300 m
	23	9				
21:11	Unioninkatu	Kaisaniemenpuisto	21:39	27 min	900 m	400 m
	23	23				

Journey planner (2001)
Open APIs (2009)
Open source code (2017)
<http://digitransit.fi/>

- Public transportation
 - Schedules, routes, real-time information, ...
- Parking
 - Parking payment zones
 - Residential and corporate parking zones in Helsinki
 - Tourist traffic stops and parking places in Helsinki
 - Real-time parking spot usage (information from parking ticket machines and all private mobile payment operators)
 - Parking violations issued
- Safety
 - Pedestrian slip warnings
 - Statistics on traffic accidents
- Emissions
 - Traffic and industry noise zones
- Urban environment
 - 3D city model, 3D buildings and lidar datasets of the city
 - Road map (center lanes for roads, sidewalks, pedestrian crossings, main park paths, etc.)
 - Crossings with traffic lights
 - Prioritised winter maintenance network for pedestrians and cyclists
- Activities
 - Nature trails and nature information (e.g. conservation areas)
- Traffic volume
 - Statistics on e.g. traffic volumes, number of cyclists
- ...





Mobility Data Catalog

Traffic | Infrastructure | Conditions & context



Explore mobility data in Helsinki.

Mobility Data Catalog provides access to diverse mobility-related data available in the Helsinki region. This data enables development of better services in diverse use cases.

The catalog acts as an intermediary service for several data providers, both public and private. It is complementary to other data providers, such as Helsinki Region Infoshare (HRI), avoindata.fi and Digitraffic. Also, it includes data produced by many pilots and experiments conducted by Forum Virium Helsinki and the City of Helsinki.

It presents data about traffic, infrastructure, and conditions and context. The categories are based on the concept of the Digital

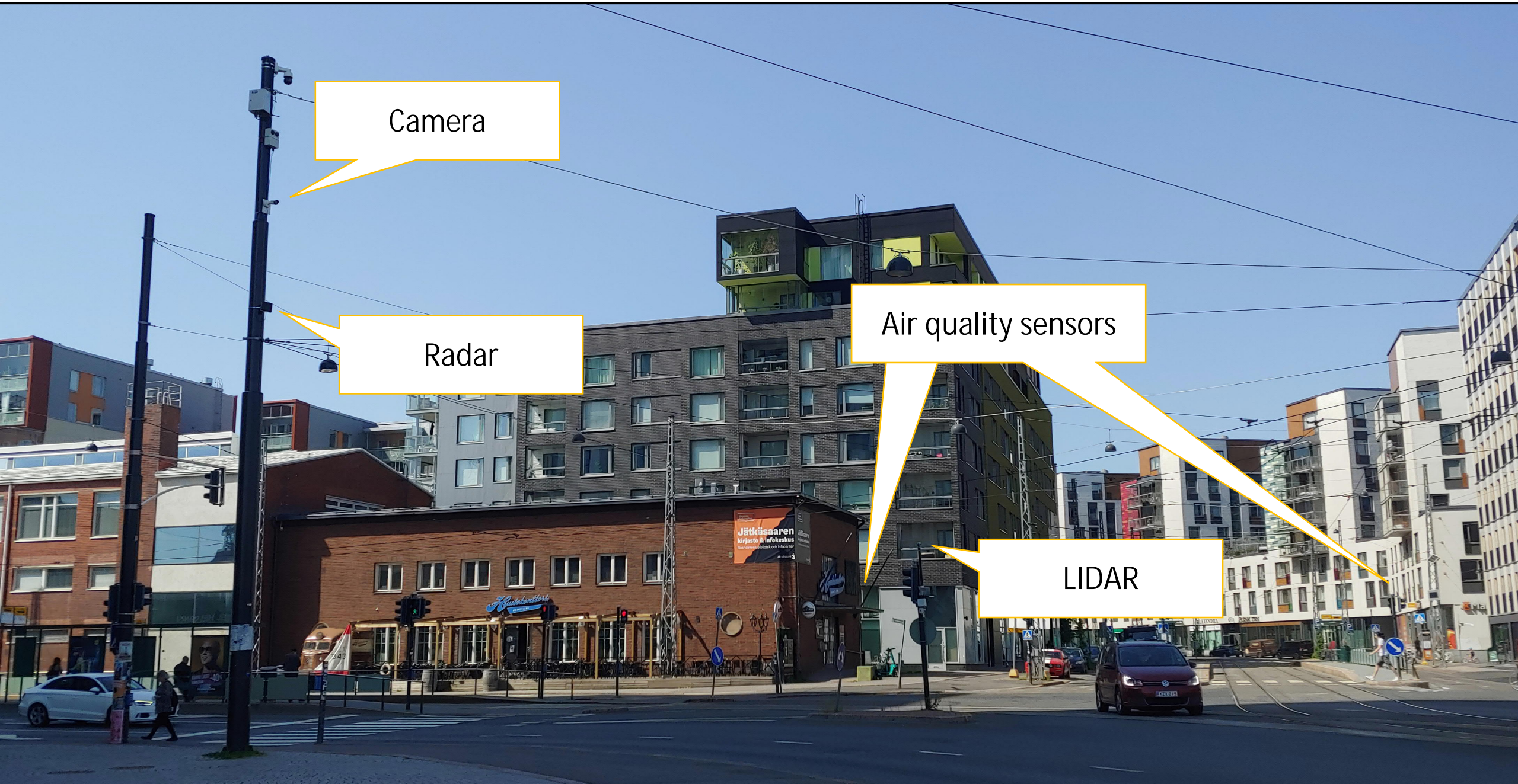


Camera

Radar

Air quality sensors

LIDAR



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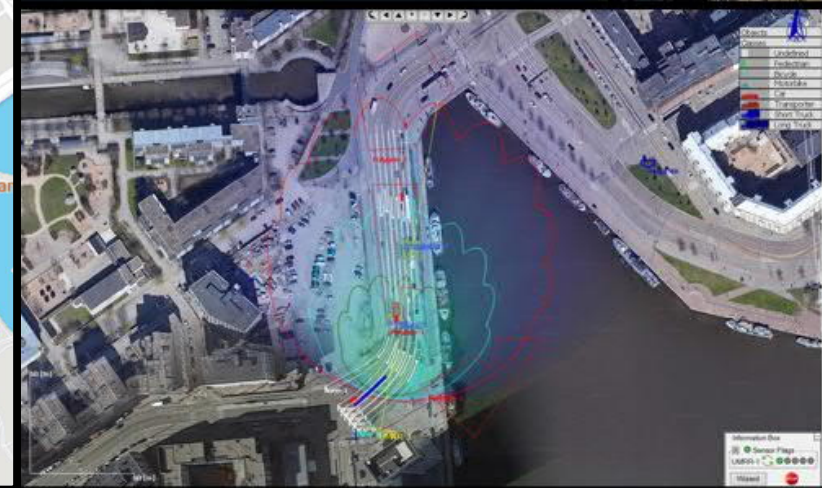
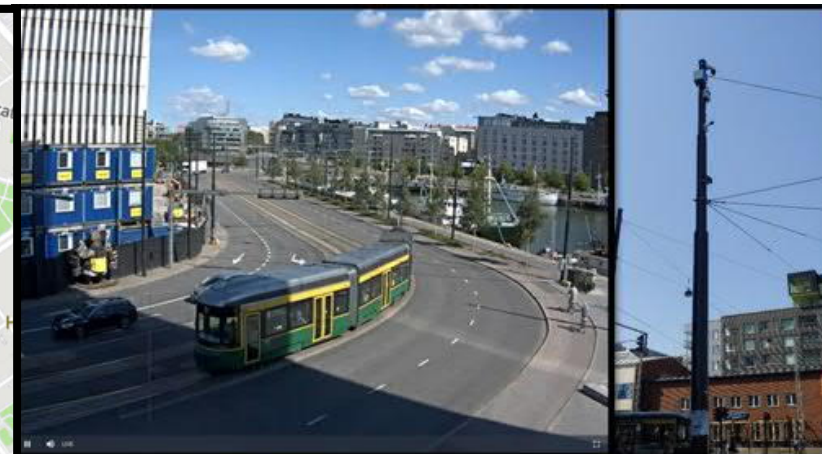
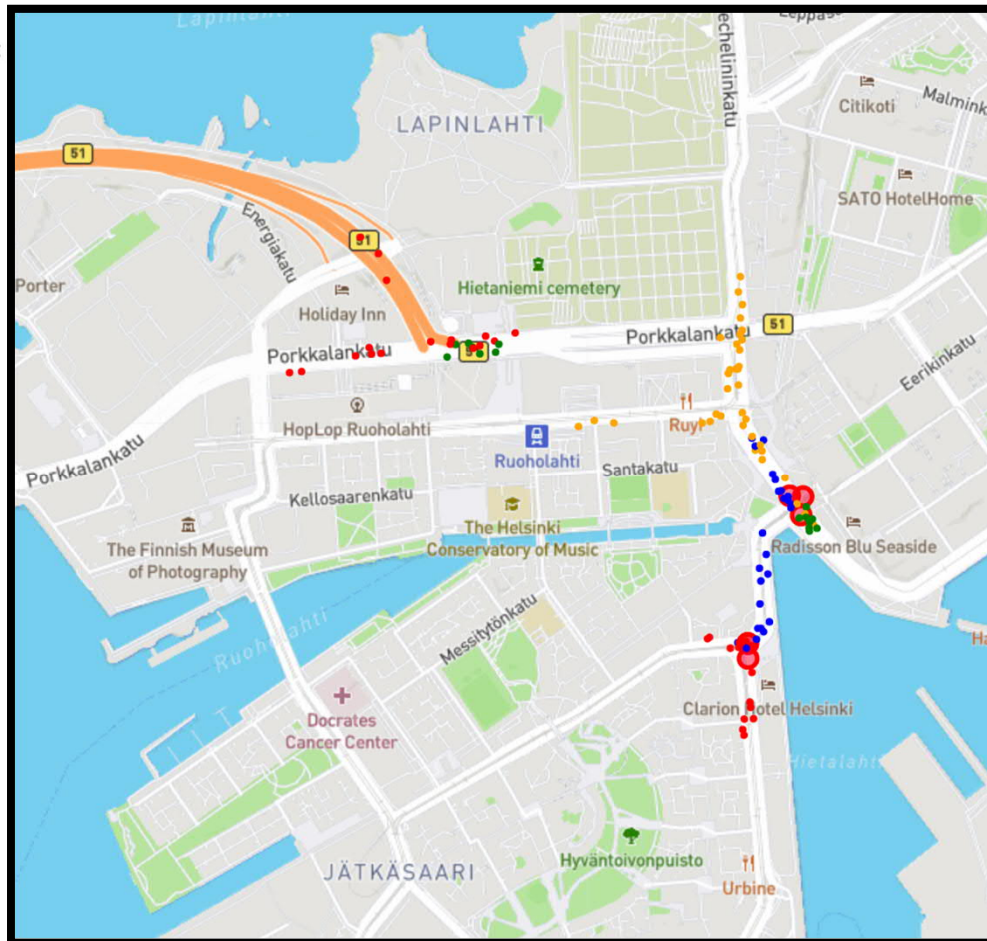
Key	Type	Unit	Description
source	string	-	Data source identifier
status	string	-	Sender status message
tstamp	int	Unix time	
nobjects	int	count	Number of objects in message

After the header there is a list of detections containing following fields:

Key	Type	Unit	Description
lat	float	Degrees	Latitude degrees
lon	float	Degrees	Longitude degrees
v_n	float	m/s	Speed towards north
v_e	float	m/s	Speed towards west[?]
len	float	meters	Length of the object
id	int	-	Internal id-number cycles from 0 to 254
lane	int	lane id	Lane id number
class	int	object type	Object type determined by the radar *)
cyc_ago	int	-	Number of cycles since last detection
quality	float	percentage	Detection quality determined by the radar

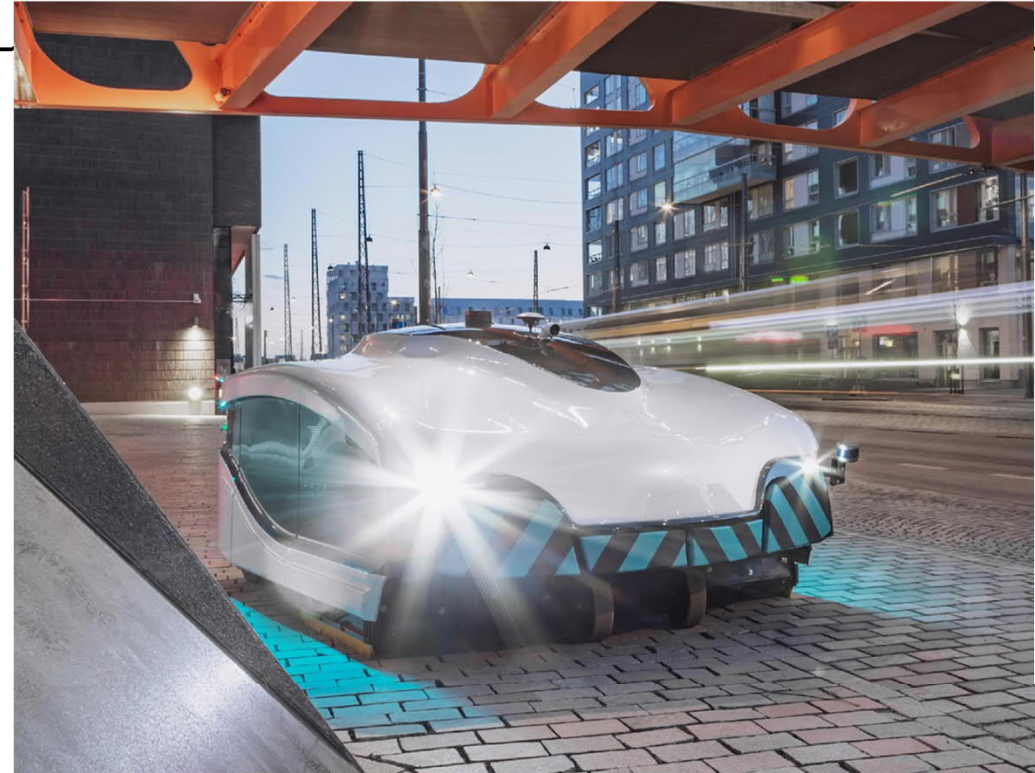
Sample data

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{
  "source": "radar.1.objects_geo.json",
  "status": "OK",
  "tstamp": 1601279853465,
  "nobjects": 1,
  "objects_geo": [
    {
      "lat": 60.16093739873581,
      "lon": 24.92177615985368,
      "v_n": -1.05,
      "v_e": -0.25,
      "len": 1.0,
      "id": 137,
      "lane": 0,
      "class": 1,
      "cyc_ago": 3,
      "quality": 58.82
    }
  ]
}
```



Trombia autonomous street sweeper

- Testing new ways to clean the streets of the residential area
- Hinders the residents' everyday life as little as possible → It's very quiet!
- Cut emissions in the Jätkäsaari district



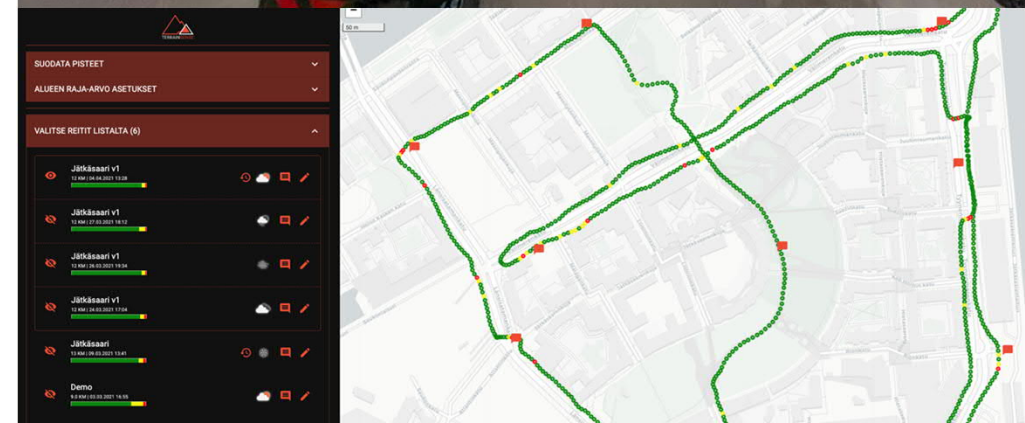
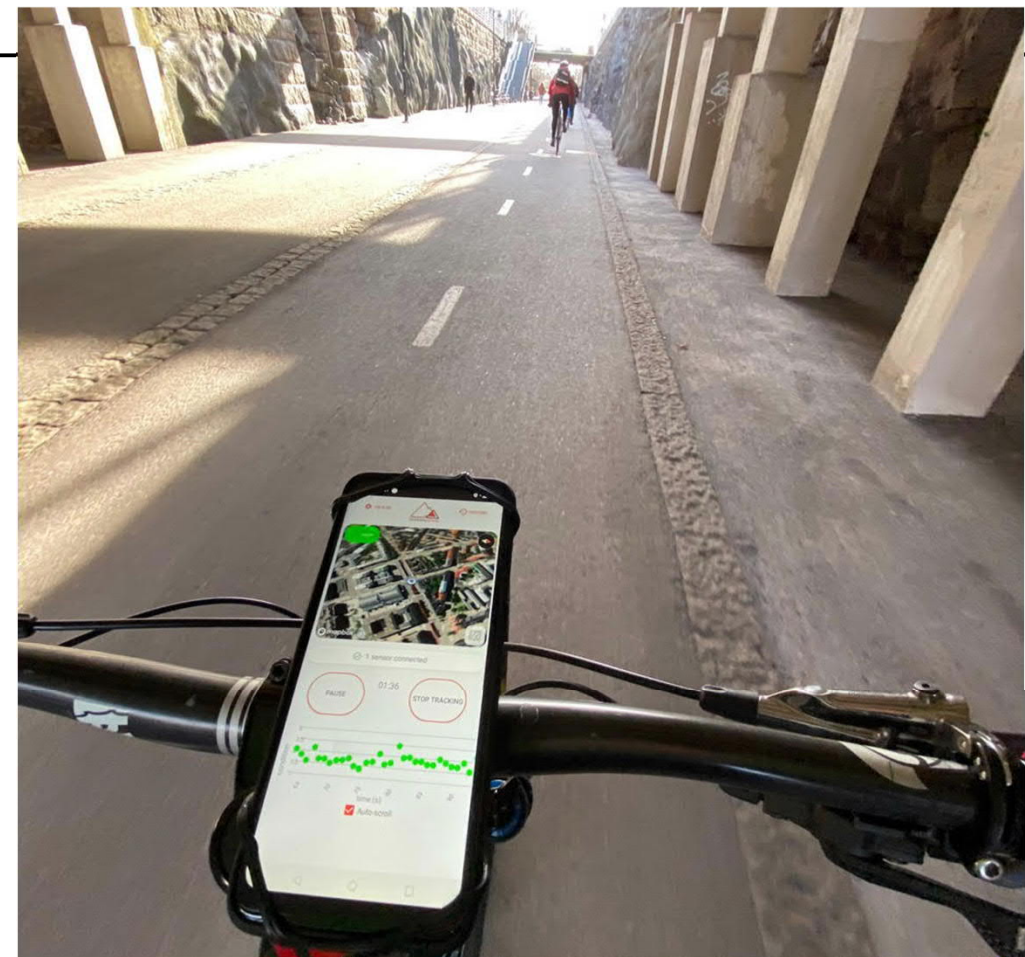
LMAD - Autonomous delivery robot

- Developing an autonomous platform for parcel deliveries
- LMAD is piloting their service in Jätkäsaari this December with DB Schenker.
- The delivery route goes through Hyväntoivonpuisto
- The aim of the pilot is to learn about possibilities and challenges of autonomous deliveries in dense urban areas



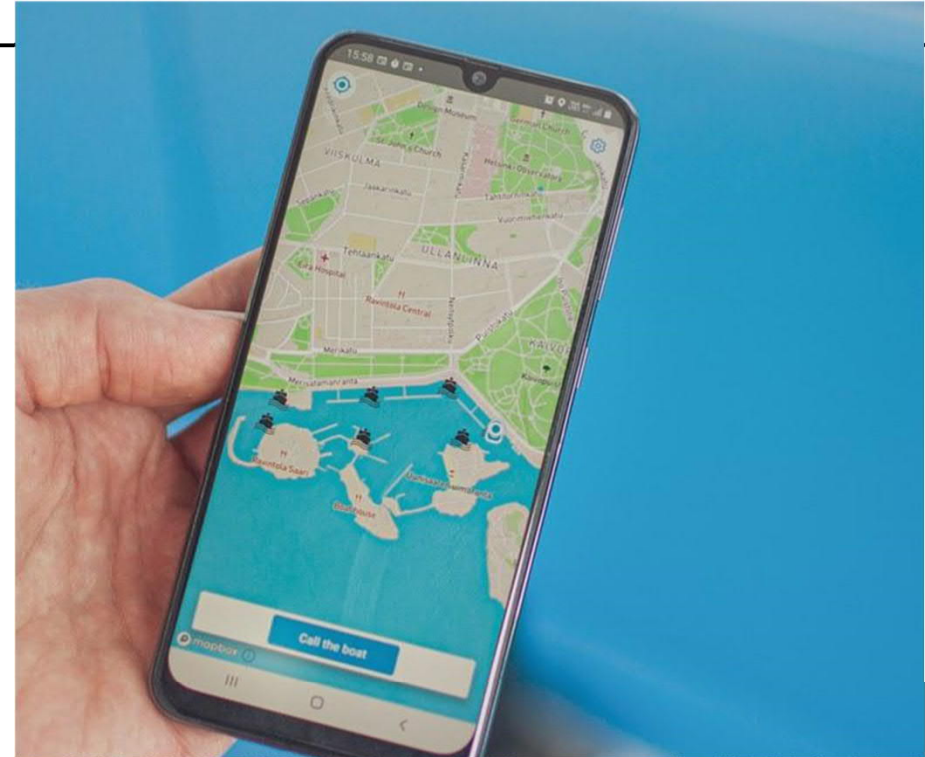
TerrainSense - better roads for cyclists

- Measuring the condition of bicycle lanes with a new type of sensor-based method.
- Activating residents to participate via TerrainSense platform

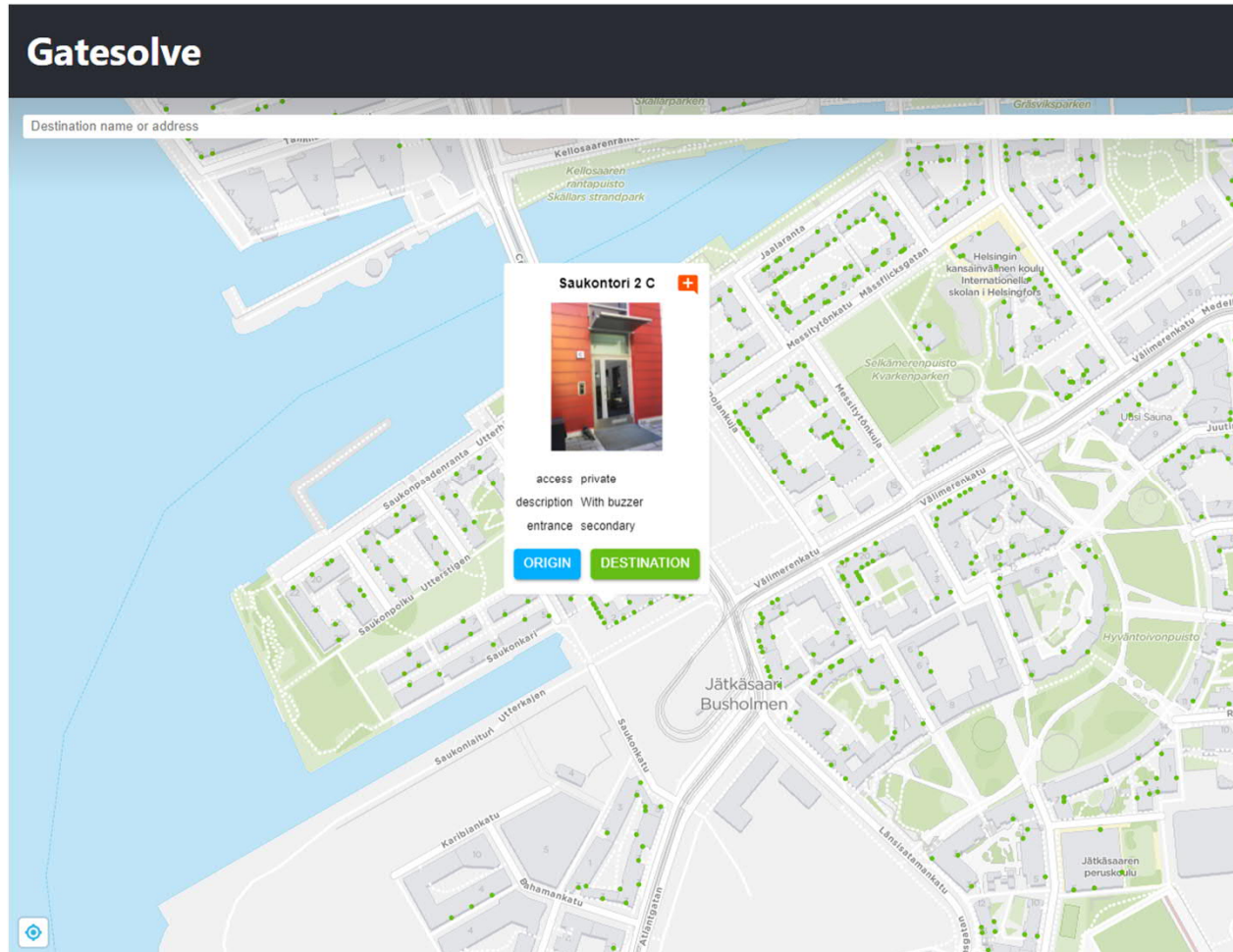


Callboats - electric on-demand boat service

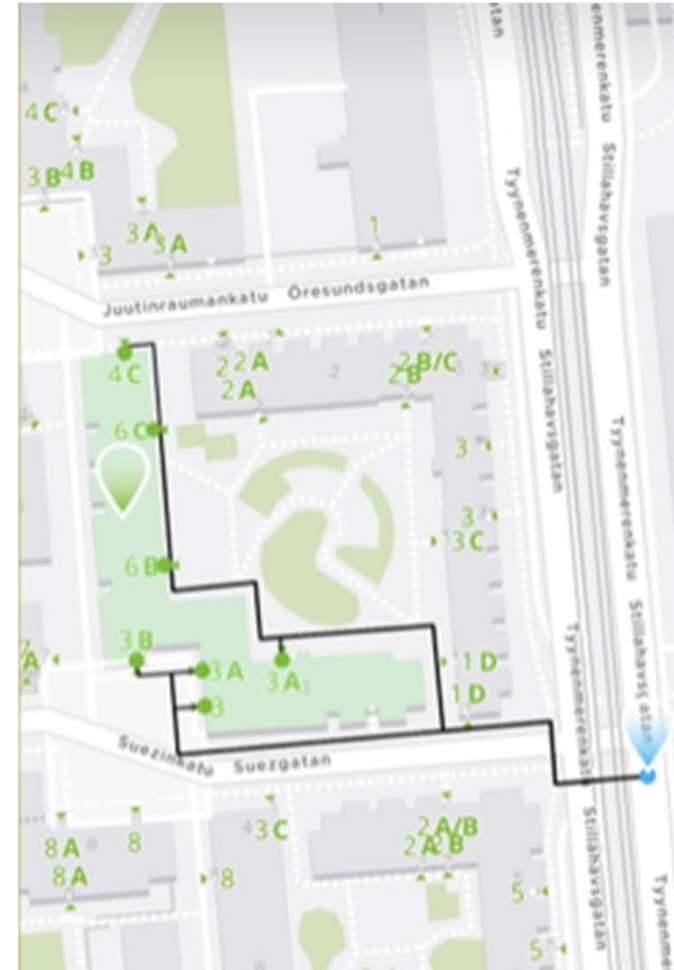
- Electric boat service piloted in Helsinki 2020 & 2021
- Fully electric & on-demand - autonomous in the near future?
- 10 000+ passengers



Last-meter navigation



Sproutverse, Mistmap



Tietorahti

Data Driven Mobility Analysis

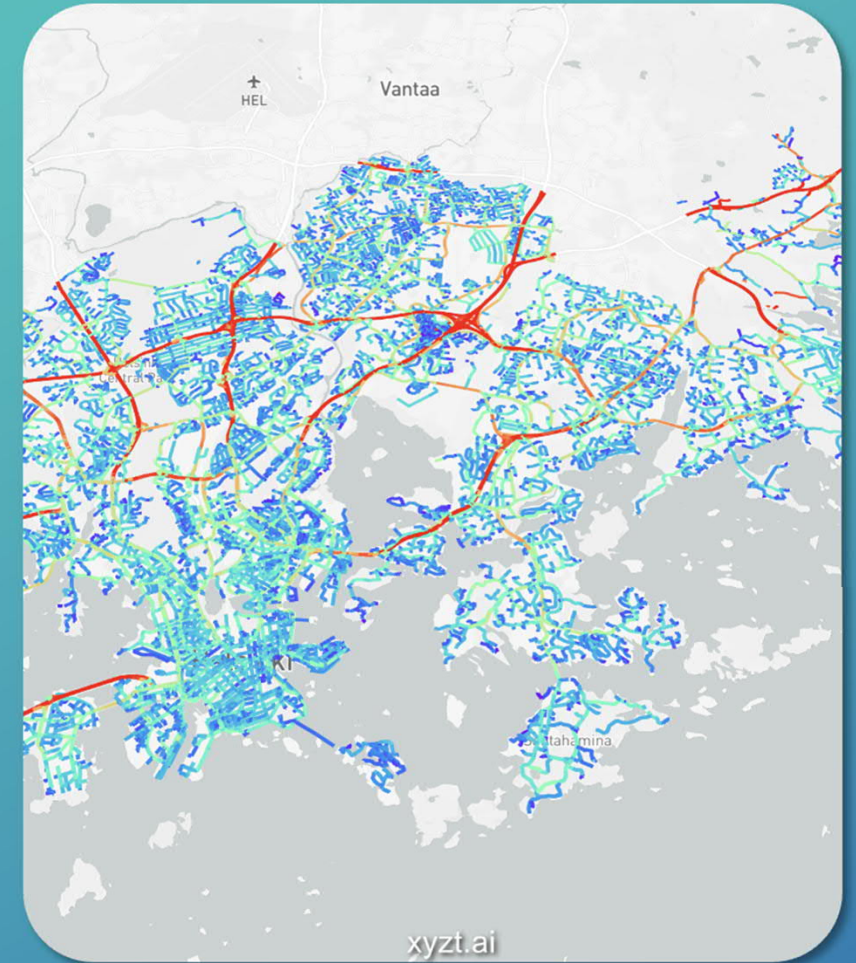
Location: Helsinki

Target users: Mobility, traffic, smart city analysts

Company: xyzt.ai

Partners: Geo Mobility

- The objective was to understand **different mobility data sources** and how they can be used for **self-service visual mobility analysis**.
- Multiple data sources were provided in the xyzt.ai analytics platform, including aggregate floating vehicle data from **Geo Mobility (HERE, TomTom, ODIQ (Google))**, aggregate people flow data from **Telia**, city traffic counting data, and air quality data from **Copernicus**.
- Helsinki analysts investigated the **coverage and quality** of the data and the different **possible use-cases**.



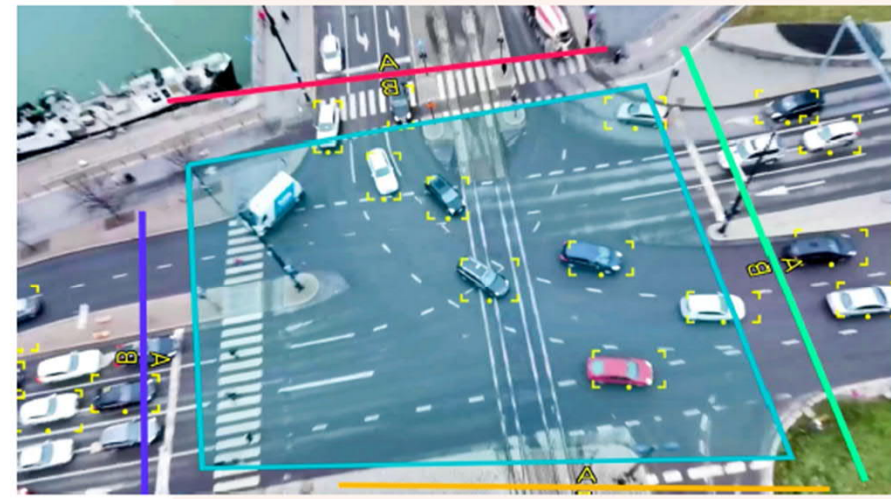
<https://xyzt.ai/>
<https://www.geomobility.eu/en/home>

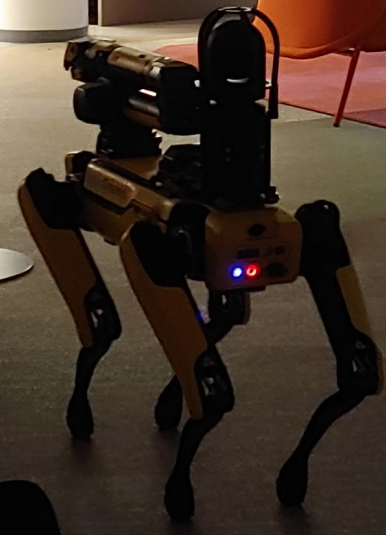
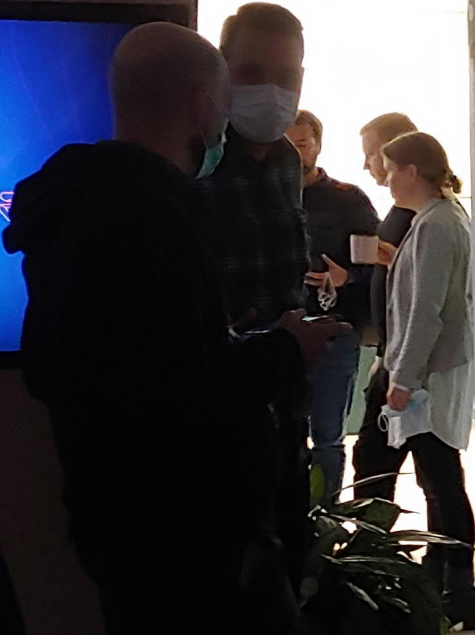
xyzt.ai
location analytics at scale

GEO
MOBILITY

Drones in Helsinki - examples (2020-2022)

- Stara: Inspections of construction sites; inventory of maintenance/repair work to city-owned buildings;
- Rescue Services: assess fires; search & rescue missions
- Environmental dept: inventory of invasive plants, bird nests; Mapping storm damage; counting park benches
- 3D modelling pilot
- Traffic counting pilot
- Pharmacy products pilot
- Defibrillator pilot
- Planning maintenance of parks or forests
- Google Wing: meals
- Police as largest drone operator








Jätkäsaari Apteekki Jätkäkokeilee.fi
24. elokuuta kello 9.25

Hei Jätkäsaari!

Tiistaina käynnistyy kokeilu, jossa testataan apteekkituotteiden dronekuljetuksia Jätkäsaareen. Lennot toteutetaan 24.-29.8.2021. Lennot suoritetaan päivisin klo 10-17. Torstaina 26.8. ei tehdä dronetoimituksia. Myös sää saattaa rajoittaa toimitusten määrää.

Tilaukset tehdään Lauttiksien Apteekin e-apteekissa (<https://www.e-apteekkari.fi/fi/>). Tilatut tuotteet lennätetään dronella Lauttasaaresta Jätkäsaaren Saukontorille, josta asiakas voi noutaa tilaukset. ... Näytä lisää



FORUMVIRIUM.FI
Helsingissä testataan apteekkituotteiden kuljetusta dronella Lauttasaaresta Jätkäsaareen - Forum Virium Helsinki

👍👎 Sinä, Ville Nousiainen ja 86 muuta

1 kommentti

Tykkää

Kommentti

Collaboration with incubators and accelerators



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Accelerator programmes

Taking your mobility startup to the next level

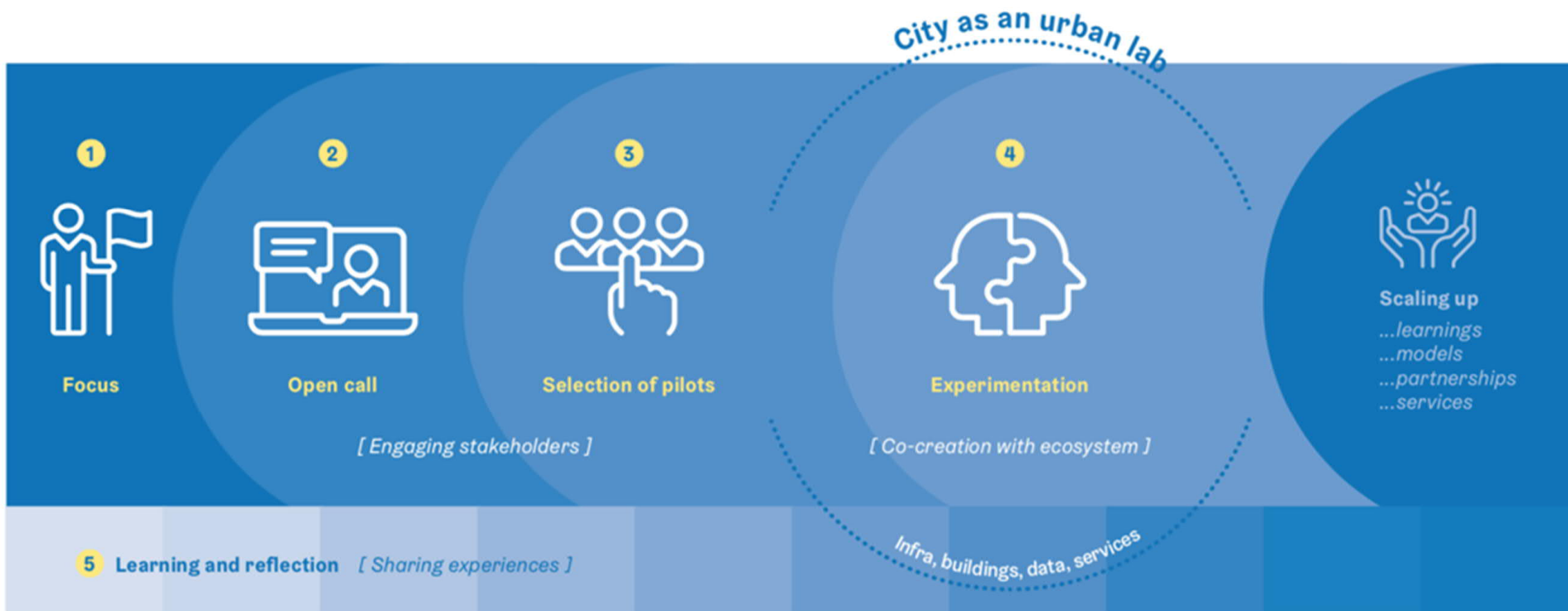
Is your startup helping to create liveable urban spaces? Become part of an EIT Urban Mobility Accelerator and get unique access to cities, mobility players and investors.

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Tools in the city's testbed and innovation activities

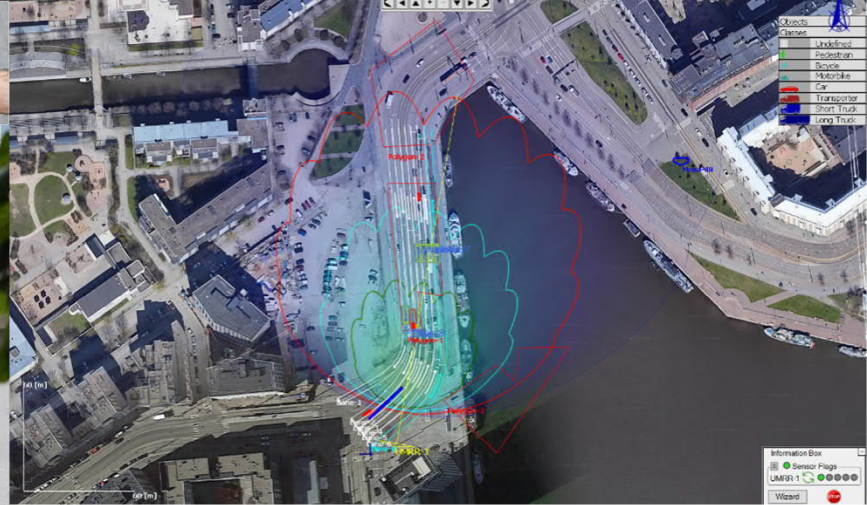
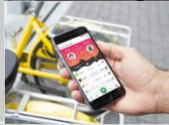
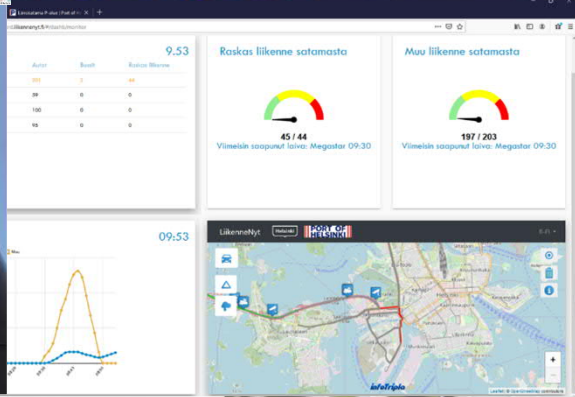
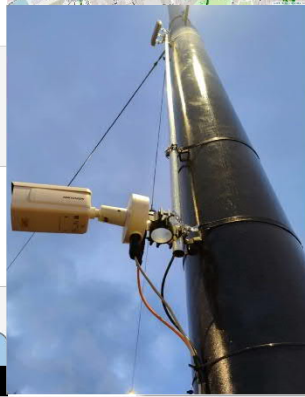
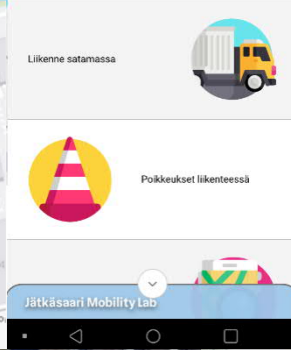
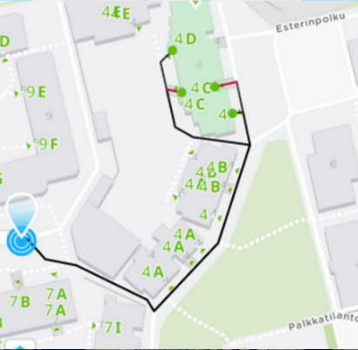
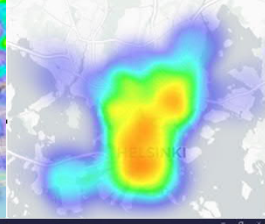
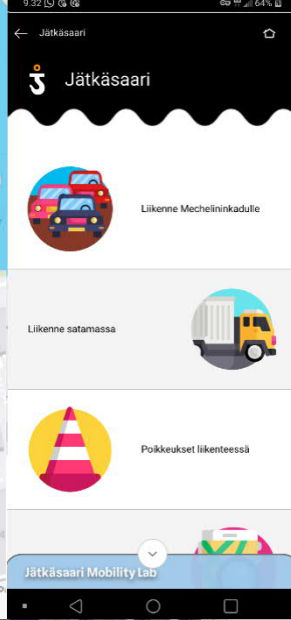
- Agile pilots, innovation challenges
 - Usually based on city's needs
 - Small pilot of a novel solution procured from a company
- Company-led pilots
 - Initiative from a company
 - The city evaluates feasibility and opportunities
 - The city usually does not fund the pilot
- Innovative procurements
 - Utilizing innovative procurements
 - Promoting the development of a market favourable for innovations
- RDI projects (utilizing different funding sources)
 - E.g. EU projects
- Collaboration with city's divisions, private sector and RDI actors' platforms







Bercman's Smart Pedestrian Crosswalk demo 31 Nov 2019



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