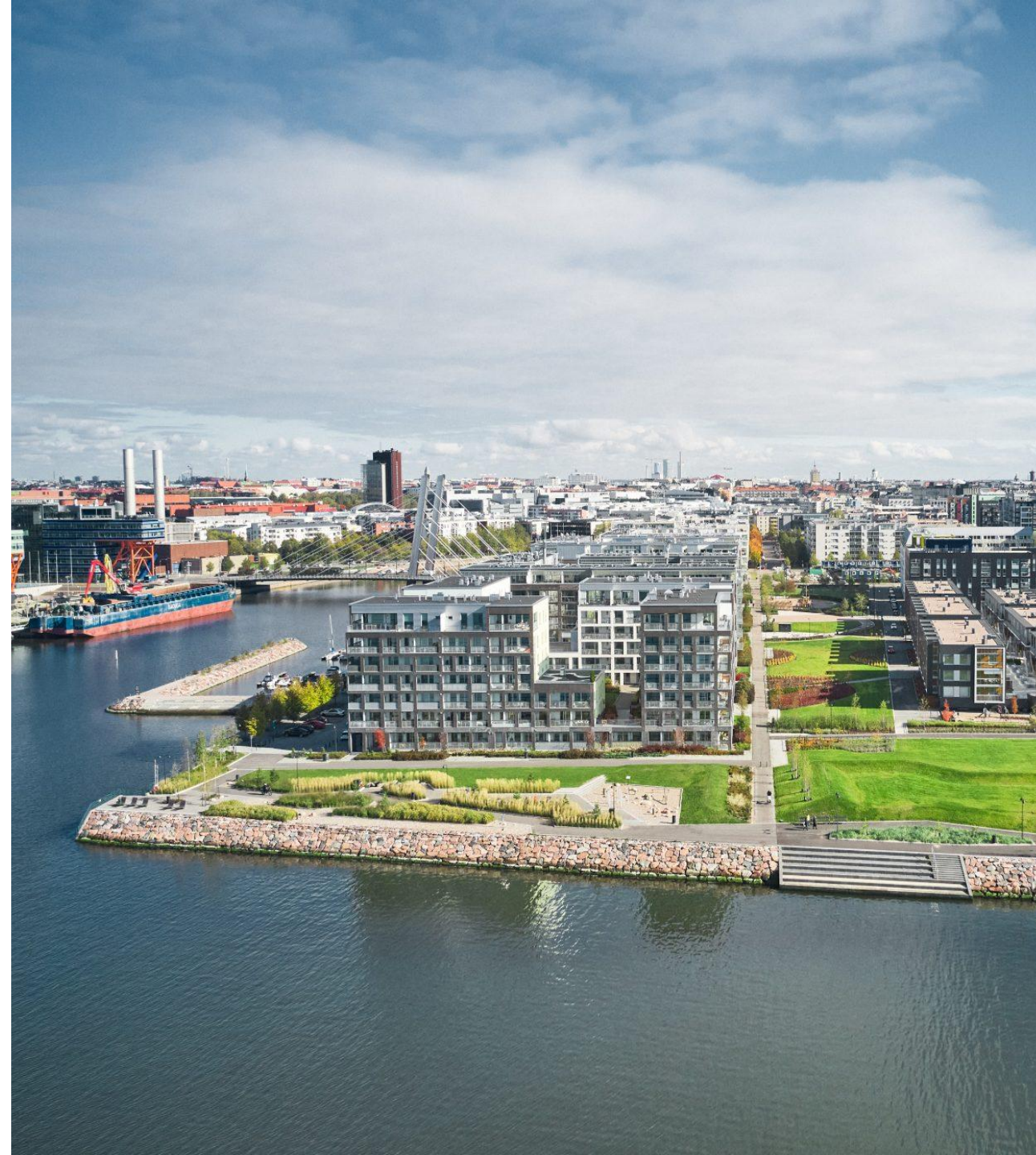


MOBILITY LAB HELSINKI

Agile pilots - Open call
Info webinar 27.11.2023



Tervetuloa kokeilemaan Helsingissä!

Testbed Helsinki –sivuston kautta löydät kattavasti Helsingin kaupungin tarjoamia uusien tuotteiden ja palvelujen kehitys- ja kokeilumahdollisuuksia. Sivusto on suunnattu erityisesti yrityksille sekä tutkimus-, kehitys- ja innovaatiotoimijoille. Kokeilualustatoimintamme keskeiset sisältöalueet ovat EdTech, rakennettu ympäristö, kiertotalous, terveys ja hyvinvointi sekä älyliikenne.

Lue lisää

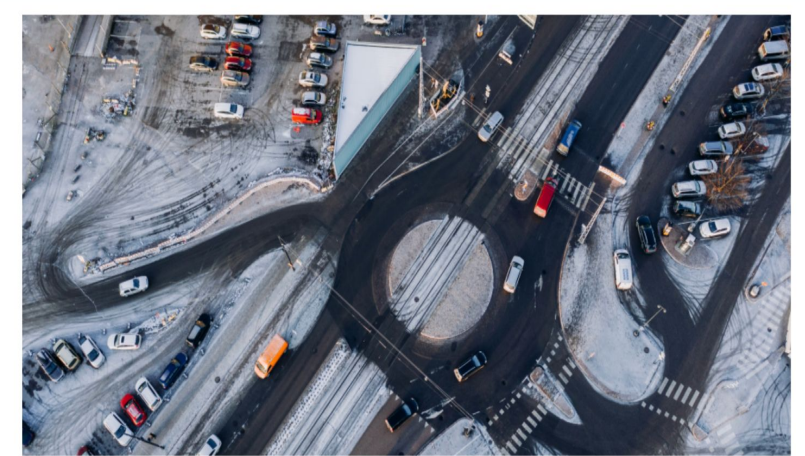
MOBILITY LAB HELSINKI

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.helsinki](https://testbed.helsinki.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



Collaboration, communication, concrete piloting - Focus on data & digital twins



Mobility Data Catalog

Traffic | Infrastructure | Conditions & context



Euroopan unioni
European Union



Uudenmaan tilta
Hjälonds förbund

Vipuvoimaa
EU:lta
2014-2020



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HELSINKI

Hel sinki
Business
Helsinki

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.

Objectives

1. **Ecosystem:**

Collaboration with different stakeholders, development and innovation community and creating new projects and pilots.

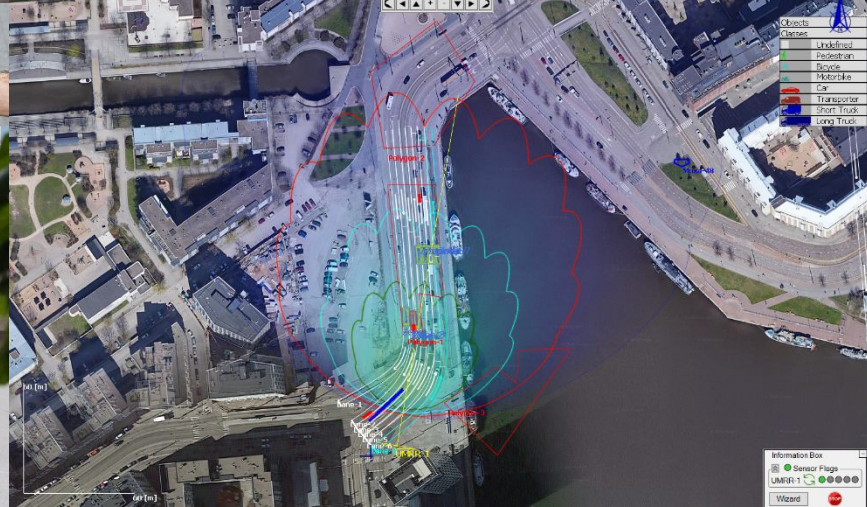
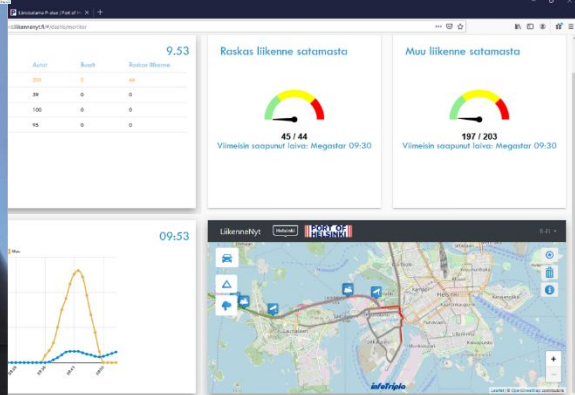
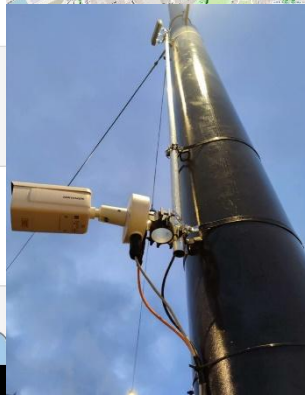
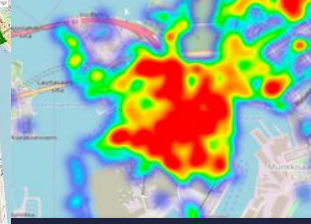
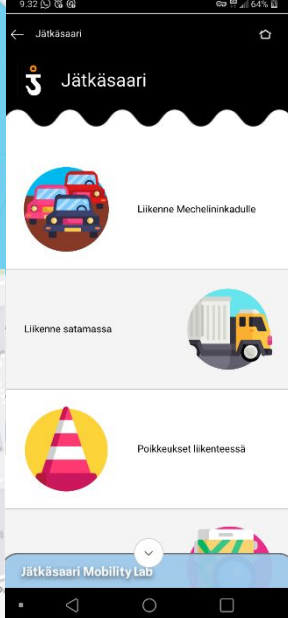
2. **Digital twin:**

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.





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MOBILITY LAE
MOBILITY LAB HE

Juho Kostainen

Project Manager

City of Helsinki

Juho.Kostiainen@hel.fi

+358 9 310 365 35



Jussi Tuurnala

Project Manager

Forum Virium Helsinki

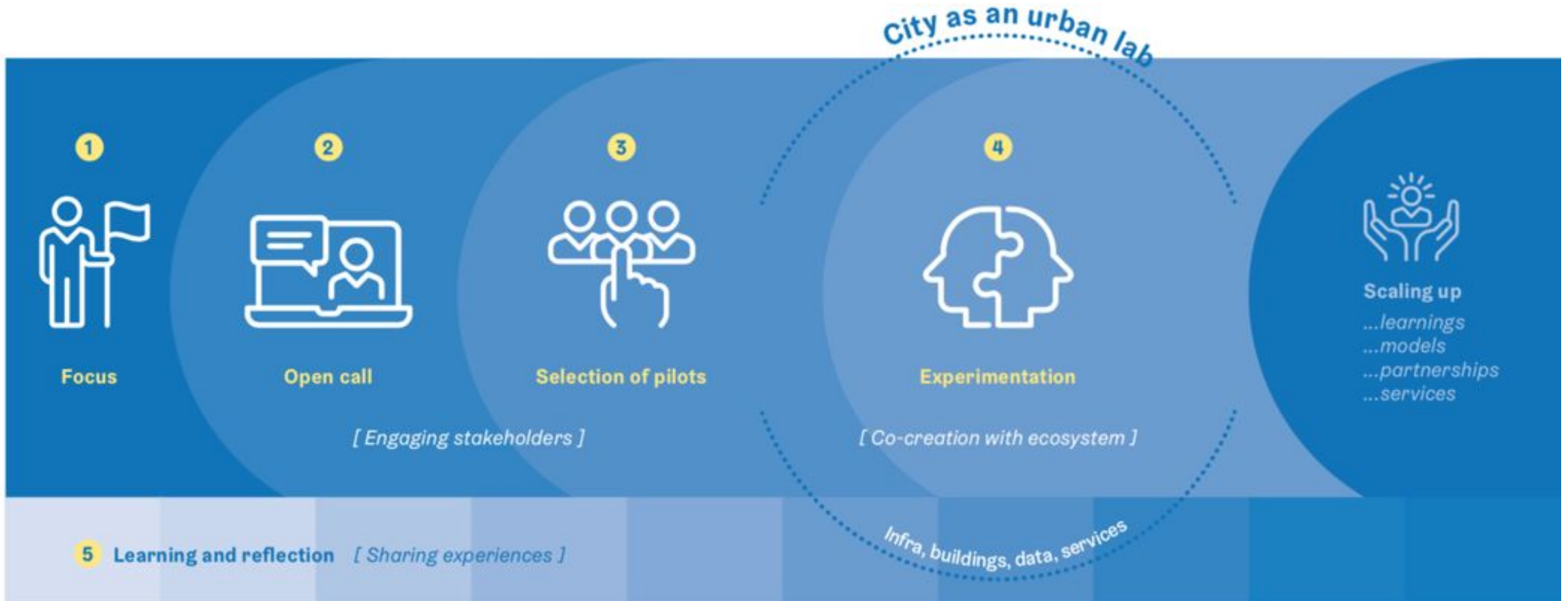
jussi.tuurnala@forumvirium.fi

+358 50 588 0352

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HELSINKI**

**Agile pilots for the development of a
digital twin for mobility**
open call 12/2023

Agile piloting



Nature of the agile pilot program

- Agile pilots are our way of developing a new and even more functional city in a genuine environment together with residents, businesses and experts.
- The aim of this work is to interactively create a broader understanding of the potential of new technologies for companies, researchers and developers.
- The final event of the pilots will be held in spring 2024. The companies selected for the pilots will present the pilot results and lessons learned at the event.

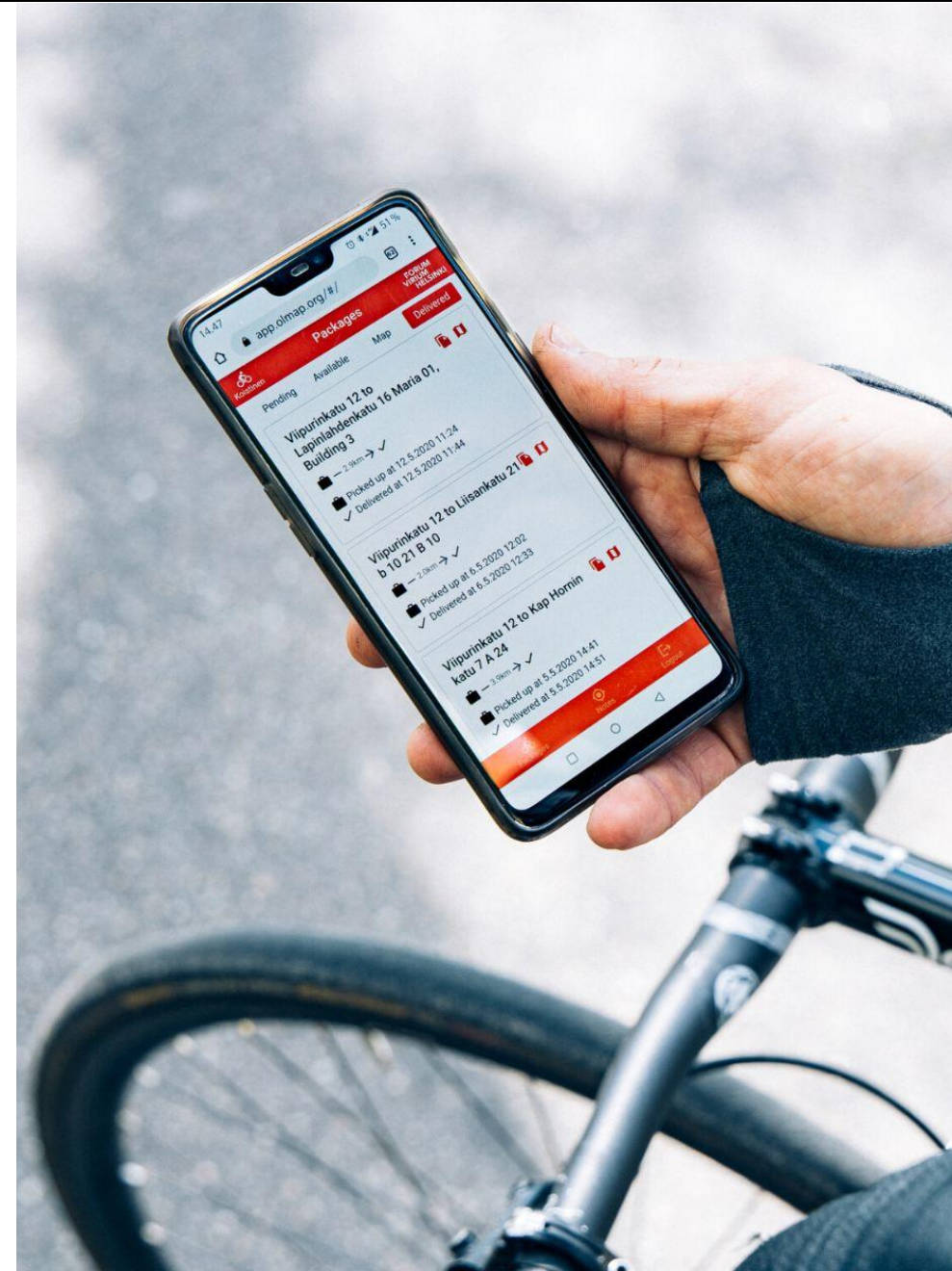
Open call 12/2023

- The call is open until 4 December (16.00 Finnish time)
- The invitation to tender is open to companies with a valid European business ID
- The submission of a tender as a consortium ('team') is allowed.
- The tender process will be carried out in Finnish and English.



Open call 12/2023

- The total budget of the procurement is up to EUR 45,000.
- The total number of pilot projects is three (3). We reserve the right not to select any pilot.
- The maximum cost of a single pilot project (= price ceiling) is EUR 15,000 VAT 0%.



Submitting the tender

- The deadline is 4 December 2023 at 16:00 (EET, Finnish time)
- The evaluation is by 8 December 2023
- The pilot projects are planned to begin in January 2024
- Bidders are required to fill in a dedicated electronic offer form at:

[https://mobilitylab.hel.fi/open-call-12-2](https://mobilitylab.hel.fi/open-call-12-2023/)

023/



Nature of the procurement - what we are looking for?

- The objective of the pilot procurement is to serve the overall development of the city's digital twin:
 - to explore and test new methods, such as AI, for the information modelling of the current state of street environments and street asset management.
- The pilot call is looking for a wide range of solutions with high novelty value
 - New methods
 - Technical novelty value
 - Use of open source
 - Scalability

CityGML 3

- The results of the pilot procurement will be used for the implementation of the CityGML 3.0 street environment test data in 2024.
- CityGML 3.0 makes it possible to present the traffic environment as centre lines, point clouds, 3D surfaces and spaces.

More information:

<https://tum-gis.github.io/road2citygml3/>



Examples of themes

Images created with Midjourney.



3D Geospatial Data Classification



Generation of Traffic Lane Center Lines

Examples of themes

Images created with Midjourney.



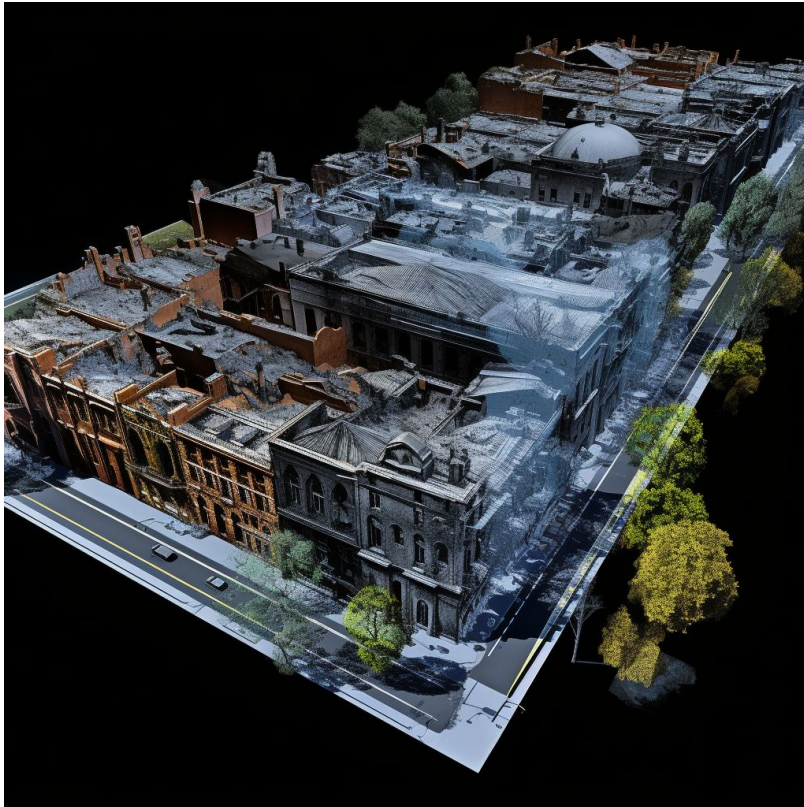
Support for Street Equipment Maintenance



Combining Geospatial Data for Enhanced Street Models

Examples of themes

Images created with Midjourney.



Automatic Classification of Laser Scanning Data



Enhanced Viewing of Street and City Model Data

Source data & other useful information

- The pilot will offer the possibility to use the mobile street space laser scanning & 360 street view data from the Jätkäsaari area produced in an earlier Mobility Lab Helsinki pilot (Cyclomedia, October 2022).
- A limited preview version of the data will be available for viewing before the deadline for the submission of tenders.

Please contact jukka.alander@forumvirium.fi for the preview version. The full dataset will only be made available to the selected companies once the pilot has started.

Evaluation criteria

- The winning tenders will be selected by the evaluators based on scores assigned in accordance with the evaluation criteria.
- The procurement criteria are 10% price and 90% qualitative evaluation.
- Tenders will be evaluated based on the following quality criteria in accordance with the specified weightings:
 - 1) novelty and innovativeness (30%)
 - 2) feasibility (30%)
 - 3) impact and effectiveness (30%).
- Each evaluation criterion is scored on a scale of 0–10 points. The points for each criterion will be multiplied according to their weighting
- The maximum total score that a tender can receive is 100 points (including the price score).

Evaluation criteria

1. Novelty and innovativeness (total max. 30 points)

- The novelty value and innovative qualities of the service or product (evaluation is carried out based on the personal competence and general and special know-how of the members of the evaluation panel selected by the procuring entity).
- The pilot brings new practices/solutions/perspectives to the modelling of street and urban space.
- What does the pilot implementer think that they will learn as a result of the pilot?

Evaluation criteria

2. Feasibility (max. 30 points in total)

- The description of measures, timetables and resources shows that the service can be implemented in a high-quality and safe manner, within the agreed timeframe and at the location specified in the invitation to tender. Feasibility will be evaluated on the basis of the work plan submitted.
- The competitor demonstrates that they have sufficient competence and resources to implement the service. Competence of the personnel assigned for the pilot project, e.g. CVs or other characterisations and support material.
- Other partnership arrangements (the implementing team, subcontractors and collaboration with the sector or other operators, for example) are described well.

Evaluation criteria

3. Impact and effectiveness (max. 30 points in total)

- The intended impact of the service/method and the method to verify the impact are described clearly.
- The service can be replicated or reproduced.
- The solution to be tested will create new opportunities, methods or practices for collecting, combining and utilising data.
- The code produced in the pilot is open source and documented on GitHub or a similar service.

4. Price (max. 10 points)

- The calculation formula for the price comparison is this: the lowest price / the comparable price x 10 points.

Schedule

- Call opened 8.11.2023
- Questions about the open call must be submitted in writing by 1 December - Q&A will be published in the open call website (see details in the open call documents)
- The call will be closed 4.12.2023 16.00 (EET, Finnish time)
- The evaluation will be carried out by 8 December 2023
- The separate contract between Forum Virium Helsinki Oy and the selected service provider(s) will be signed by the end of January 2024
- The pilot projects are planned to begin in January 2024

What we offer?

- Agile pilot will be purchased as a service (open invitation to tender)
- The city of Helsinki as a testbed
- Contacts to stakeholders and representatives of the city
- Support in the facilitation of the pilot
- Technical support (incl. Forum Virium and possible external experts)
- References
- Visibility and support in communications



What is expected from the companies taking part in the pilot?

The company implementing the pilot commits to share the information mentioned below with Forum Virium Helsinki and the City of Helsinki.

- The datasets and open source code created in the pilot will be distributed to Forum Virium Helsinki and the City of Helsinki and, where applicable, to third parties.
- Preliminary information: Basic information of the experiment, goals and/or hypotheses of the experiment, implementation plan
- Public results: The main results of the pilot, key figures and lessons/conclusions
- Documentation of the experiment (short online surveys): Progress monitoring in the middle of the experiment, final reporting at the end of the experiment, post-evaluation approx. one year after the experiment

Further information

Jussi Knuuttila

Project Coordinator

Forum Virium Helsinki

jussi.knuuttila@forumvirium.fi

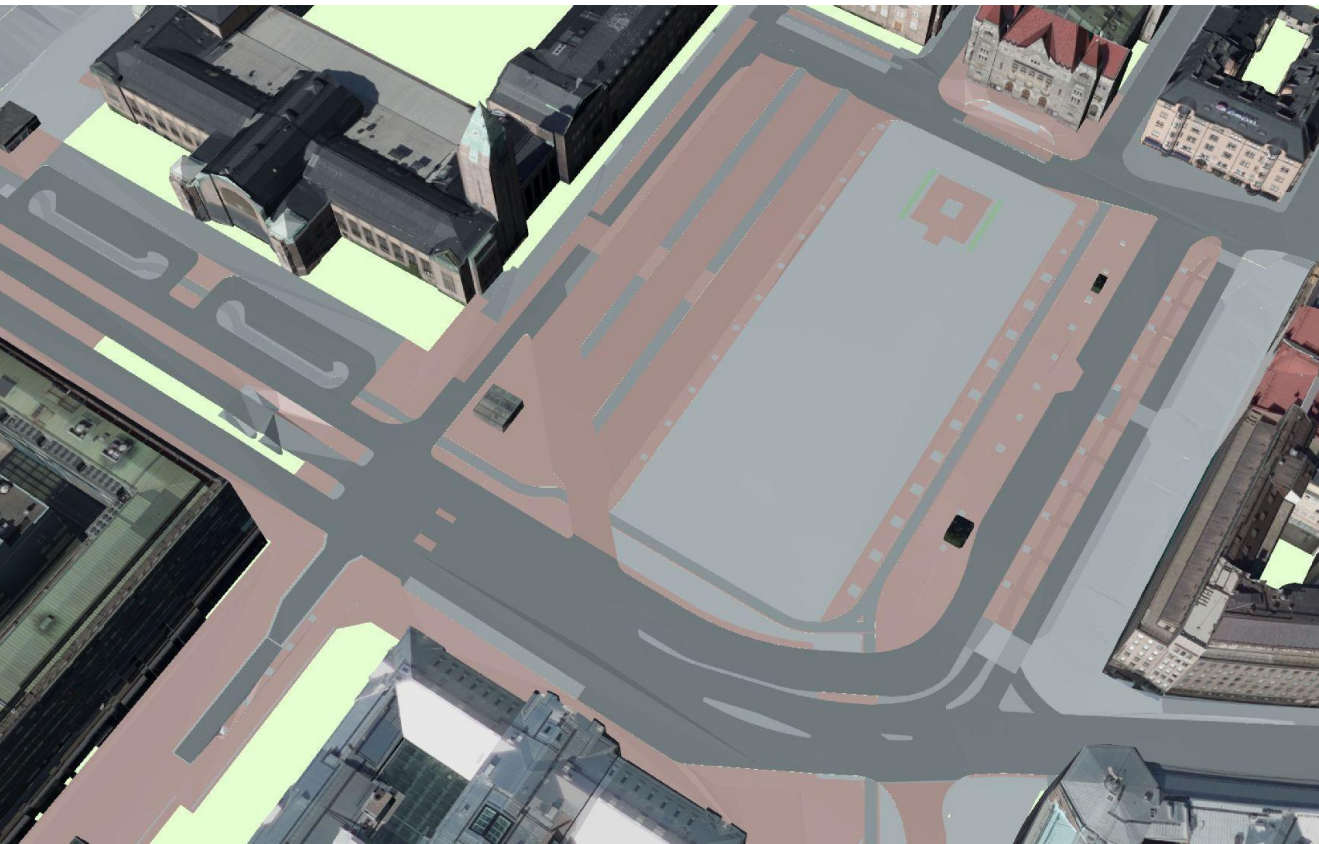
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<https://mobilitylab.hel.fi/open-call-12-2023/>

CityGML3 and Helsinki

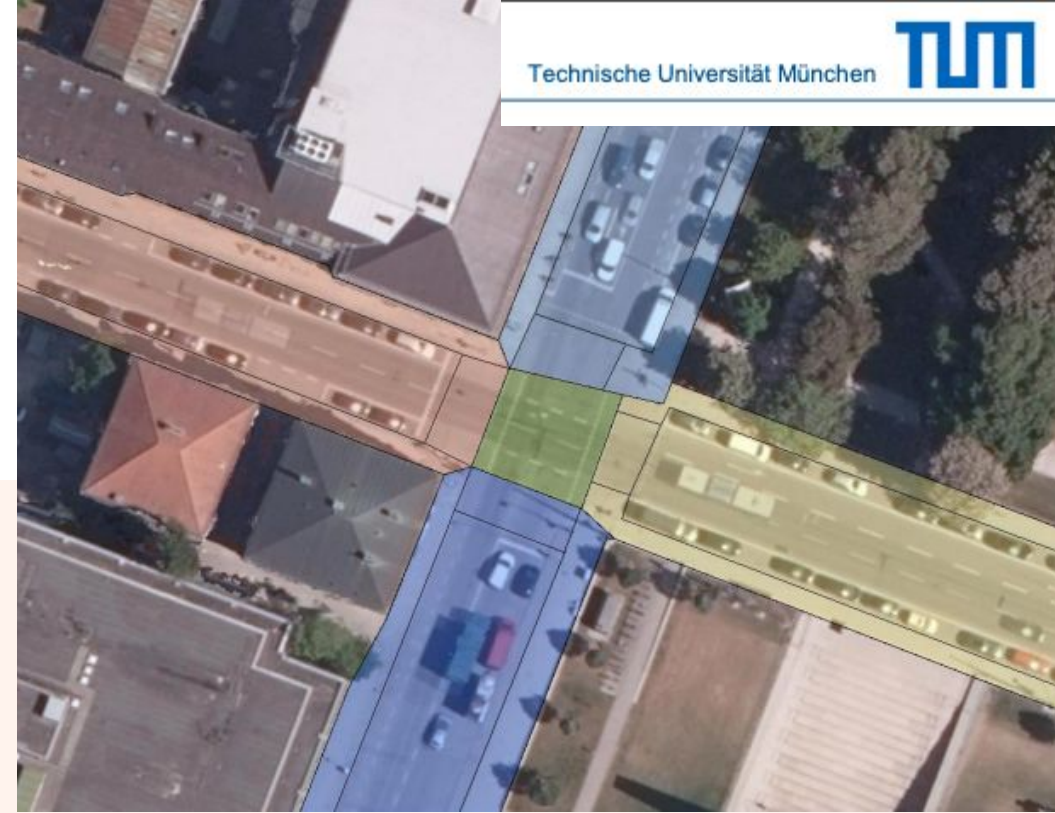
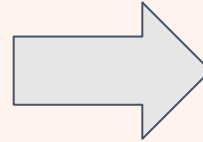
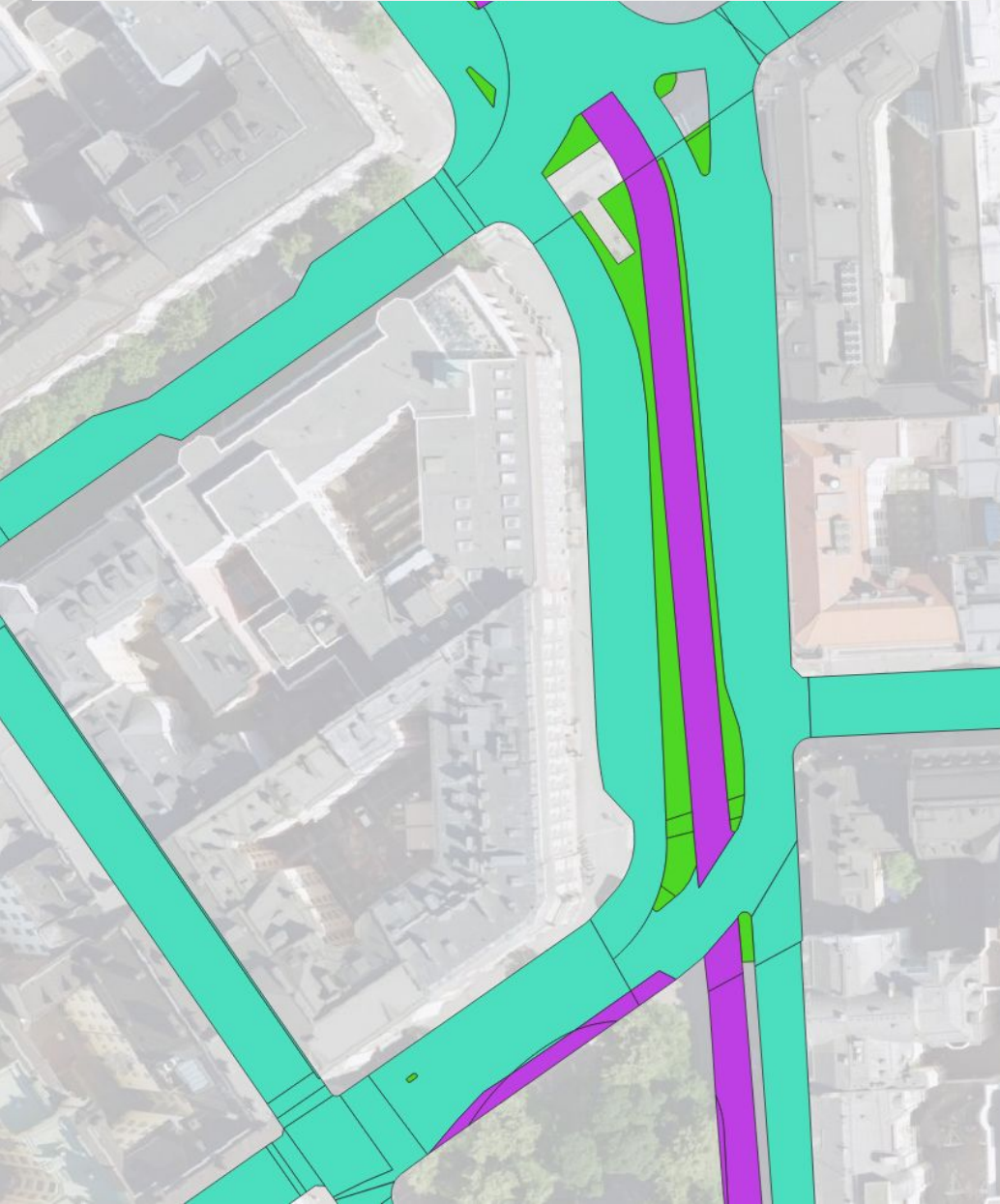
- Keynote speech: Possibilities of CityGML 3.0, Christof Beil, Technical University of Munich
<https://youtu.be/pP84ScnfJYI?si=irjUYnUfpZI4RX5c&t=400>
- Mobility Lab info 15.2.2023
<https://youtu.be/eeTa2wXD3AU?si=BR4kcBUXbTrtg3wd&t=886>
- Helsinki Cityinfra brief, MLH info 08/2022
https://youtu.be/iDHBHh7fuvI?si=TnYbqXrj_7IfWFcG

Where are we now?



- In Helsinki, the current CityGML model is focused on buildings
- New version of standard also supports detailed modeling of street environments
- Limited amount of international examples available
- CityGML 3 models are not yet tested in Helsinki, as support in software is still limited.
- We are early in CityGML3!

Helsinki registry of public areas YLRE,
only traffic areas visible



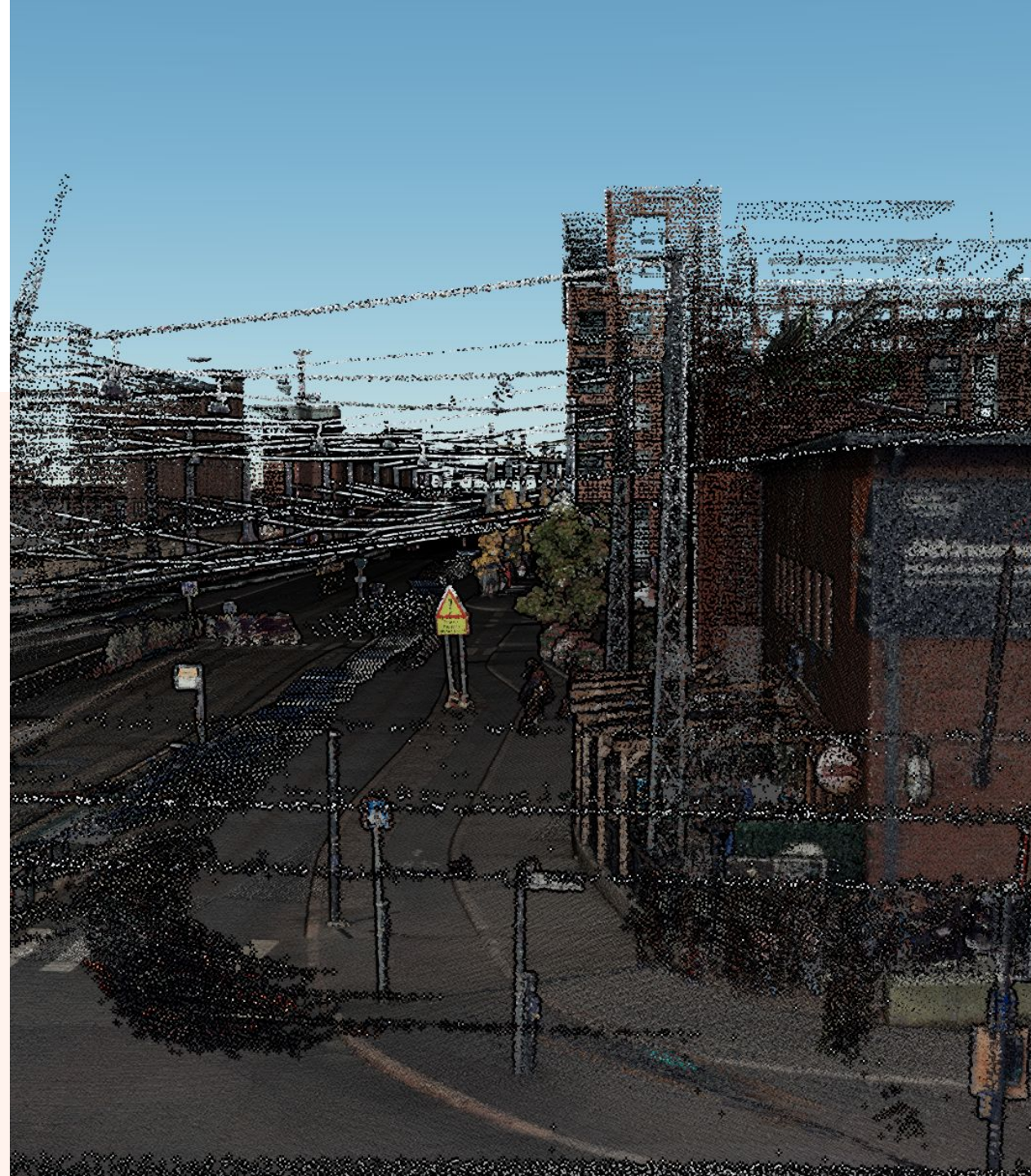
CityGML3 way-granularity example.

Image by Dr Christof Beil, source:

<https://www.asam.net/index.php?eID=dumpFile&t=f&f=4689&token=9e7ee676756dd4894580d2bc6f5795d17b05343b>

What data we have?

- Mobile laser scans and 360-images raw data including trajectories etc. by Cyclomedia
 - Traffic signs in CityInfra (see Helsinki WFS server and [Github](#))
- City's open GIS data
 - YLRE is the most important area type representation
 - Aerial laser scans (open data)
 - [More information](#)
- Don't have: the official Helsinki's street MLS dataset
(over 1300 km by Cyclomedia 2023)







Few images visible

<https://www.mapillary.com/app/user/fvhmapper?lat=60.153232600000024&lng=24.915692600000057&z=17&pKey=328336449931940&focus=photo&x=0.23828585579045797&y=0.49485477714090165&zoom=0>

Questions?