

Urban Innovative Action: Healthy Outdoor Premises for Everyone – **UIA HOPE**





- Urban Innovative Action Healthy Outdoor Premises for Everyone UIA HOPE
- Time line: 3 years 11/2018 10/2021
- Budget: 5,7 M € of which 4,56 M € is European Regional Development Funding, by Urban Innovative Action Initiative.
- Project partnership:

City of Helsinki University of Helsinki's Faculty of Science Vaisala UseLess Company Forum Virium Helsinki Llc Helsinki Region Environmental Services Authority HSY Finnish Meteorological Insitute FMI







Helsinki

VARA



Helsinki

HOPE - Healthy Outdoor Premises for Everyone

« HOPE project is an excellent example of how the collaboration between different actors from businesses to scientist and to citizens can be build. At the same time, it showcases the possibilities of data utilisation to create higher quality services that meet the individual needs of the users»



Anni Sinnemäki, Deputy Mayor for Urban Development of the City of Helsinki



Aix-Marseille Provence

metropole

DIAMS - Digital Alliance for Marseille Sustainability

Topic: Air quality Population: 1800 000 ERDF: EUR 3,775,181.60 Duration: 01/11/2018-31/10/2021



Breda

AirQon - Air Quality through EV Battery Connectivity

Topic: Air quality Population: 184.025 ERDF: EUR 2,544,876.12 Duration: 01/11/2018 - 31/10/2021



Ostrava

CLAIRO - CLear AIR and Climate Adaptation in Ostrava and other cities

Topic: Air quality Population: 299,622 ERDF: EUR 2,073,503.96 Duration: 01/11/2018 - 31/10/2021



Portici

AIR-HERITAGE - Improving the environmental quality of the City of Portici: Monitoring, Modelling, and Mitigating Air Pollution through participated and efficient Policies

Topic: Air quality Population: 55,012 ERDF: EUR 3,274,475.68 Duration: 01/11/2018 - 31/10/2021 **O Air Quality Monitoring**

O Developing AQ Data Analysis

O Academic Research

• Air Quality Index 2.0

Data Visualization Applications

O Participatory Budgeting

 \odot Innovation Competition

 \odot Best Practices for Urban Planning

• Creating Awareness on AQ Issues

Focus on three districts in Helsinki, each with different Air Quality issues

- Jätkäsaari

New large waterfront development at former harbor area, with a busy passenger port in the area.

- Vallila

Old densely built residential district at edge of the inner-city with major traffic routes passing through.

- Pakila area

Older suburban housing area, mostly single-family housing. Two highways passing through the area.



Developing Air Quality Monitoring

University of Helsinki has developed portable mobile AQ sensors to be used by volunteering citizens, the 'Air Quality Troops'.

Six measuring campaigns in the three city districts will be organized in 2019-2021: up to 100 citizens in each district will carry a mobile sensor for four weeks. The measuring will done twice in each district.

The participating citizens will have their own individual air pollution exposure profiles based on the data from the sensors and the citylevel AQ measuring network via mobile phone app.

Portable AQ sensors' measuring parametres:

- Micro particles (PM_{2.5})
- Particles (breathable size) (PM_{10})
- Ozone (0₃)
- Carbon Monoxide (CO)
- Nitrogen dioxide (NO₂)
- Temperature, pressure and relative humidity
- Movement and light (to regulate the sampling frequecy)
- GPS location data

Sensor uses Bluetooth to connect to users' mobile phone in order to send the data to Univ. Helsinki servers.



Vaisala has updated their AQT420 sensors into improved new generation versions for the project.

Thirty AQT420 monitors will installed on volunteering citizens balconies' and similar location in the three districts to form a on a highly optimized measuring network. The monitoring will last at least for two years.







Vaisala AQT420

Pegasor AQ Urban

Passive NO₂ sampler

- Total number of new HOPE sensor sites: 30
- Main instrument is Vaisala AQT420 along with weather transmitters with passive CO2 sensors.





Both sensors types will feed rich location specific real-time AQ monitoring data into FMI's ENFUSER model to improve the existing city-level modelling and analysis.

Developing AQ Data Analysis Methods

New AI and machine learning based AQ analysis algorithms will be developed by utilizing the new increasingly precise data. The regional and local AQ maps as well as forecasting will be developed.

Open API for data access will be provided during the project.

Air Quality Index 2.0

An advanced Air Quality Index 2.0 will be developed as a new standard for AQ information by using the data and analysis methods developed by the project.



Participatory Budgeting

Participatory budgeting exercise(s) will be organized in the three city districts in the 2020.

UseLess Company will develop a mobile phone app for the citizens to report their district-specific daily activities in reference to AQ and to vote for their preferred Air Quality Interventions in the exercise. By reporting their activities and choices the citizens can increase/decrease their credit and voting power. Citizens, schools, sports clubs, companies etc. can challenge each other as well.

The project will procure different types of Air Quality Interventions, services and products, which the citizens can vote for to be applied in their own districts.

Innovation Competition

LLITTI

An innovation competition will be organized for startups and SMEs to develop Air Quality related services and products by utilizing the AQ data produced by the project.

Best products or services will be procured as 'Interventions' for the participatory budgeting excercise.

Data Visualization and Applications The project will develop data visualizations and Green Path mobile app and an AQ layer for the HSL mobile route planner app.

Best Practices for Urban Planning

As part of the project's dissemination activities, new solutions and best practices of taking AQ issues into account in City of Helsinki's urban planning and construction works' processes will be produced.

Creating Awareness

Creating better awareness on Air Quality issues and helping people make healthier and better choices in their daily lives.

Urban Innovative Action-initiative: https://www.uia-initiative.eu/en/uiacities/helsinki

Project website: <u>https://ilmanlaatu.eu/</u> & <u>https://hope-airquality.eu/</u>

Twitter: <u>@UIA HOPE</u>

Instagram: https://www.instagram.com/ilmanlaatu/

Facebook: https://www.facebook.com/UIAHOPE



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