



## CITYZER - SERVICES FOR EFFECTIVE DECISION MAKING AND ENVIRONMENTAL RESILIENCE

The main objective of this project is to develop new digital services and products to support decision making processes related to weather and air quality. This includes for example early warnings and forecasts (0-24 h), which allow for avoiding weather-related accidents, mitigate human distress and costs from weather-related damage and bad air quality, and generally improve the resilience and safety of the society. These services and tools will be piloted in the Helsinki area, and will be specifically targeted for export. This will be achieved through services definition and localization in cooperation with Chinese and South American University teams, taking advantage of the pre-existing business connections of Vaisala, FMI and CLIC Innovation with those market areas.

The key CITYZER outcomes are the piloted services and products with envisaged great commercial and export potential. The project develops a localizable and customizable set of services and tools for decision making support to facilitate understanding, rising of alert level and issuing warnings. The targeted set of services will cover the needs of several customer segments such as governmental and municipal customers, city and real estate level decision makers and managers, and individual citizens. The project takes advantage of the latest scientific know-how and directly exploits the expertise obtained for example from the MMEA research program (<http://mmea.fi>) and EU-funded (HAREN, EDHIT) projects.

The system utilizes weather radars, air quality sensors and other observational systems feeding their data to a probabilistic ensemble-based now- and forecasting model. A specific sensor network will be developed to enable knowledge feed from local in situ observations to refined decision making support services. Central to the observational systems is the Observation Network Manager NM10 developed by Vaisala within the MMEA program, on which CITYZER defines and builds new commercial services and connects new sensor networks (for example air quality).

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### For more information:

<http://cityzer.fmi.fi>  
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### Participating organisations

Pegasor Ltd, Vaisala Corporation, Inno-W Ltd, Sasken Finland Oy, Emtele Ltd, Helsinki Region Environmental Services Authority (HSY), Haaga-Helia University of Applied Sciences Ltd, Finnish Meteorological Institute (FMI), Tampere University of Technology, CLIC Innovation Ltd

The project started 1.1.2016 and runs until 31.12.2018



## Work Packages (WP)

The project work is divided into five distinct work packages. WP1 and WP2 form the technical basis for the project establishing the observational and forecasting systems on which the services (WP4) are based on. WP3 focuses on the international aspects, in particular in customer profiling, market analyses and business models suitable for them. WP5 consists of the project management.

### WP1 – Observations

WP1 develops an observational network system that can be formed from pre-existing in situ sensors and remote sensing instruments. Central to this is the Observation Network Manager NM10 developed by Vaisala, which collects and allows for the fusion of the multisource data. This project will implement the network of air quality monitoring instruments with interfaces for additional sensor systems, e.g., soil moisture sensors (mud-floods), water level detectors, as well as snowpack thickness and water content detectors.

### WP2 - Diagnostics and Predictions

WP2 provides the primary source of data for the services to be developed in WP4. First, observational data provided by WP1 will be analyzed and diagnosed. These data will then be used as input for the nowcast and forecast models to provide predictions of precipitation and air quality up to 24 hours into the future.

### WP3 - Localization, User profiling and Business Models

WP3 will map the special needs of different markets, and profile the customer needs. The work will include an assessment of societal benefits of targeted service business models in selected target markets, China, India and South America. Assessment of business models will be done in close co-operation with the chosen research partners in the selected target markets.

### WP4 - User-specific products and services

WP4 develops models for user-tailored environmental services based on the data, products and tools generated and developed in WP1 and WP2, and market and generic business model studies obtained from WP3. The services will support decision making processes in all levels of societal organizations, and provides new business opportunities for local commercial organizations.

### WP5 - CITYZER concept integration and coordination

WP5 coordinates and manages the CITYZER project work and, in particular, guarantees the successful integration of CITYZER concept.