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EnCLOD

Pilot Action: VICENZA

Safer winter roads through Open Data

How Vicenza is using real-time weather data to prevent ice and improve road safety

- **Location:** Vicenza, Italy
- **Focus:** Road safety, mobility & environmental monitoring
- **Data:** Weather and road condition data (temperature, humidity, rainfall, snowfall, road surface conditions)
- **Tools:** Weather stations, IoT sensors, predictive algorithms, dashboards, Open Data platforms
- **Stakeholders:** Province of Vicenza, Vi.abilità, ARPAV, University of Venice, local authorities, citizens

Pilot Action: *Vicenza*

Using Open Data to optimise winter road salting

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CONTEXT

Every winter, **the north mountainous roads of Vicenza face changing weather conditions** that can quickly lead to **ice formation** and increase the **risk of accidents**. Before the project, the Province of Vicenza lacked a comprehensive system to continuously monitor road and weather conditions, making it challenging to plan salt-spreading operations efficiently and support data-driven decision-making.

WHAT WAS IMPLEMENTED

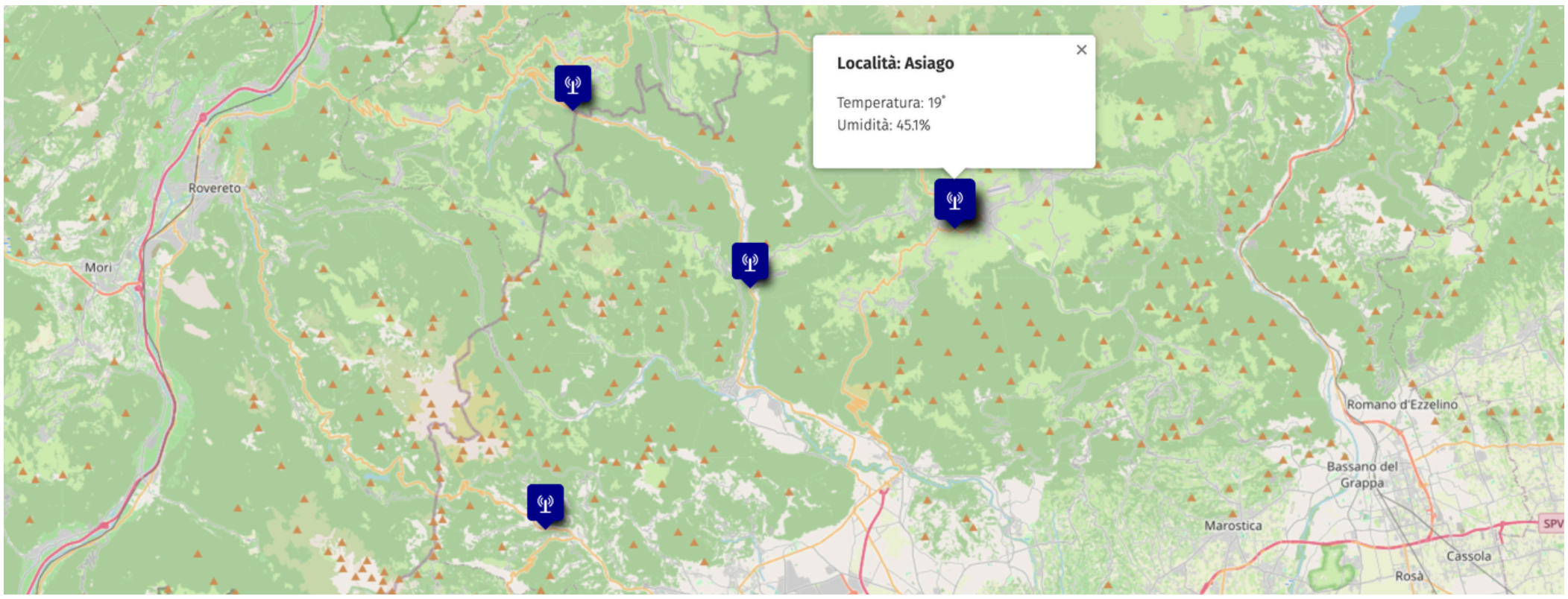
To respond to this challenge, **the Province of Vicenza installed four weather stations in strategic points along the mountain roads north of Vicenza**. These stations collect continuous data on weather and road conditions, **including temperature, humidity, rainfall and snowfall.**

This information helps road managers understand when ice may form and when salt-spreading interventions are actually needed, **making winter road maintenance safer, smarter and more efficient.**

A weather station and an informative panel along the mountain roads North of Vicenza.
Photo credit: MTX s.r.l. / Provincia di Vicenza

MAIN RESULT

- **4 weather stations** installed along mountain roads
- **15 environmental sensors** deployed to monitor weather and road conditions
- Weather **data updated every 15 minutes** and made **available online**
- **Open datasets published on the Province of Vicenza website** and the **Open Data Veneto portal**
- An algorithm developed to estimate **when road salting is needed**



Open data map available on the website of the Provincia of Vicenza: https://www.provincia.vicenza.it/focus/enclod-meteo-stradale-alto-vicentino

IMPACT ON LOCAL GOVERNMENT AND THE CITY

The Pilot Action helps the Province of Vicenza and Vi.abilità make more informed decisions on winter road maintenance, enabling more efficient salting operations, better use of resources, and safer roads for local communities.

IMPACT ON CITIZENS/STAKEHOLDERS

Citizens benefit from safer roads during winter and free access to real-time weather and road condition information, helping them travel more safely and plan their journeys with greater confidence.

FUTURE GOALS

- **Expand the use of data** by integrating weather information with additional sources, such as traffic and accident data, to support safer and more informed decisions.
- **Strengthen the local data ecosystem** by involving more stakeholders and encouraging the wider use of Open Data across the territory.
- **Increase data availability and accessibility** through the Open Data Veneto portal, providing citizens, businesses, and public authorities with a broader range of useful information.

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ABOUT THE PROJECT

The project EnCLOD aims at strengthening the governance capacity of 5 local public authorities in Central Europe by promoting the use of Open Data (OD) and the Internet of Things (IoT) sensor networks. This initiative strengthens multi-level governance, promotes civil society involvement, and fosters public-private collaboration. Within the five pilot areas - Vicenza (Italy), Olomouc (Czech Republic), Debrecen (Hungary), Zilina (Slovakia), and Nova Gorica (Slovenia) - a specific challenge related to mobility/transport, environment, or climate change policy area is addressed through the development of 5 local Action Plans for the effective usage of Open Data and IoT opportunities for territorial governance and city-region planning. Furthermore, project activities will significantly increase awareness and knowledge of public authorities on OD and IoT potentialities for territorial governance, through case study collection and capacity building activities. Citizens' engagement will be enhanced through the organisation of events like "hackathons" and raising awareness activities.

PARTNERS INVOLVED IN THE PILOT ACTION OF VICENZA

Provincia di Vicenza

alda SRL Benefit Corporation

IUAV

EUROPEAN PROJECT CONSULTING epc

OTHER PROJECT PARTNERS

DKV

city:one

CITIQ Intelligent technologies for urban mobility

UNIVERSITY OF ŽILINA

Palacký University Olomouc

FA UNIVERSITY OF LJUBLJANA Faculty of Architecture

MESTNA OBČINA NOVA GORICA