PERIOPSIS Ltd

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Introduction

Few words about PERIOPSIS Ltd

We provide **satellite and aerial image analytics** using **artificial intelligence** and our proprietary **computer vision models**.

- Spin-off of CYENS Centre of Excellence
- Funded by Research & Innovation Foundation
- Certificate of Innovative Enterprise from the Deputy Ministry of Research, Innovation and Digital Policy

CYENS
CENTRE OF EXCELLENCE

RESEARCH
& INNOVATION
FOUNDATION

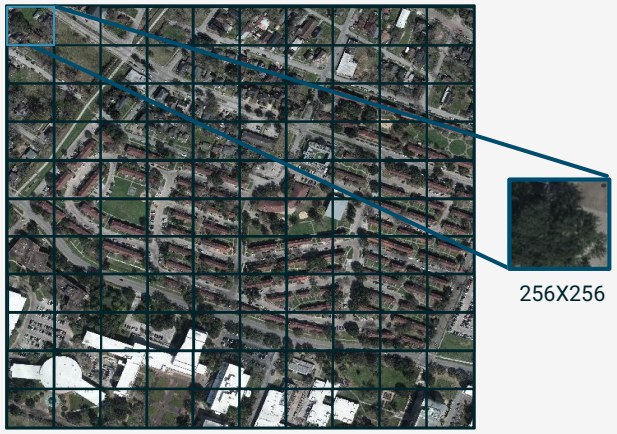
The Dumping Mapping project is funded by the Cyprus Research and Innovation Foundation, Programmes for research, technological development and innovation "Restart 2016 – 2020", under the programme "Creation and initial development of startups with international orientation (Pre-Seed) under the project number PRE_SEED/1221/0147

The problem

- **Increase of illegal garbage dumps** and landfills across Cyprus and Europe.
- **Large environmental risks** created due to the accumulation of waste in uncontrolled areas.
- **Impact on vital economic sectors** such as tourism.
  Reinforcement of citizens' dissatisfaction and distrust towards the involved bodies and services.
- **Need for innovative solutions** for early identification of waste.

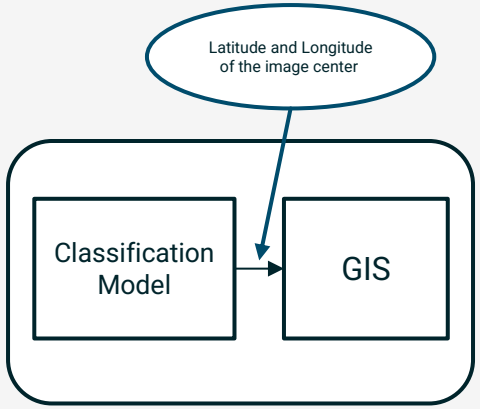
Introducing DumpMapper

We **identify and classify illegal dumping** from satellite imagery, transforming into **actionable data** using advanced computer vision and AI algorithms.

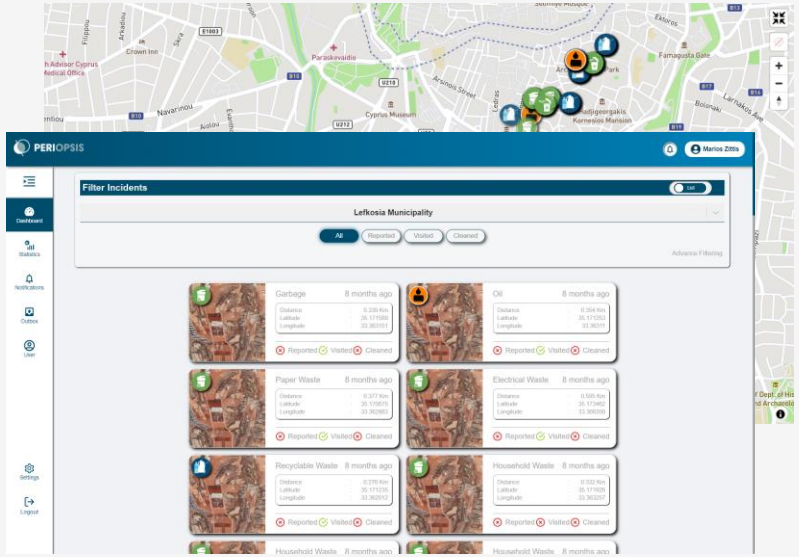


Nicosia, Cyprus

Satellite Imagery



CV/DL Model



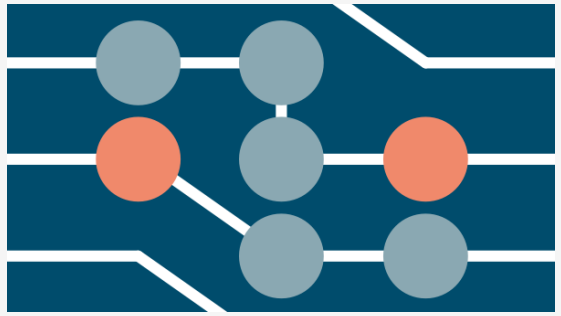
Actionable analytics & data

Dumping Detection

Powered by:

Satellite Imagery

High spatial resolution satellite imagery, @0.3-0.5 meters/pixel, capable of identifying small-scale dumping sites (from 1m²) to larger landfills.



Artificial Intelligence

Proprietary AI models trained on extensive datasets to detect dumping with **high precision** (90%) and **recall** (85%) across diverse terrains.

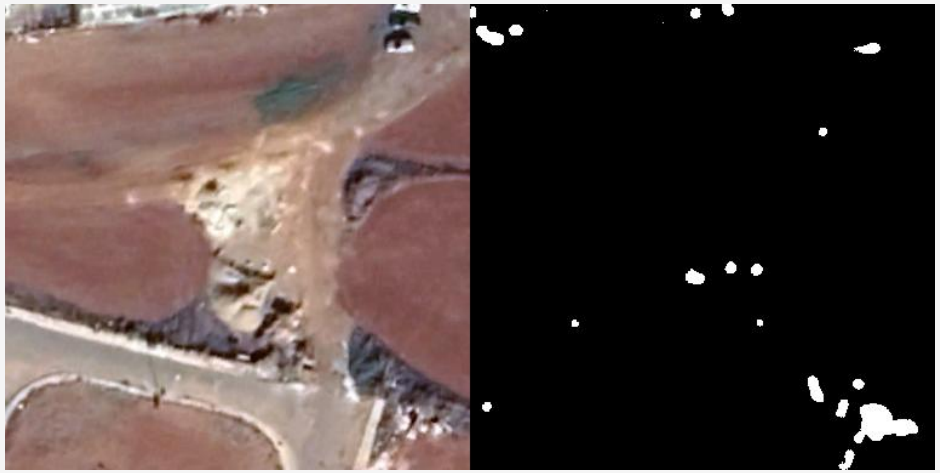
GIS-Based Portal

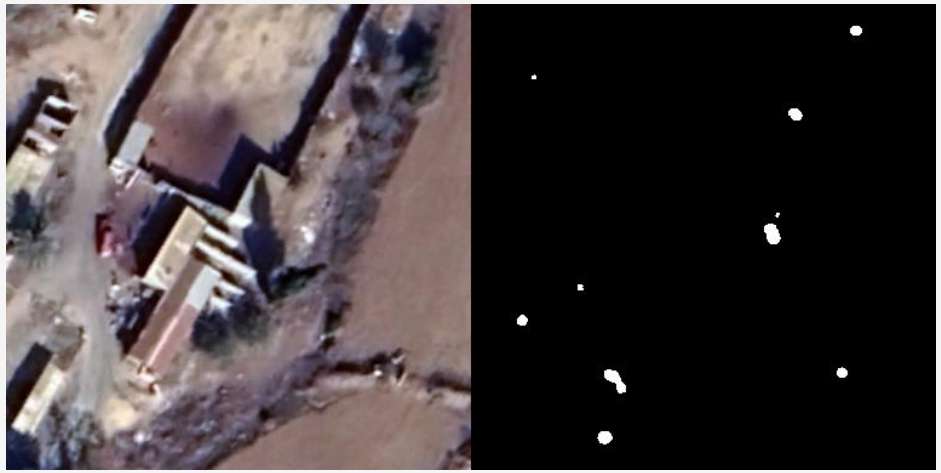
Access via the PERIOPSIS Portal, featuring a comprehensive interface for monitoring, visualizing, and managing illegal dumping data.

What does it detect?

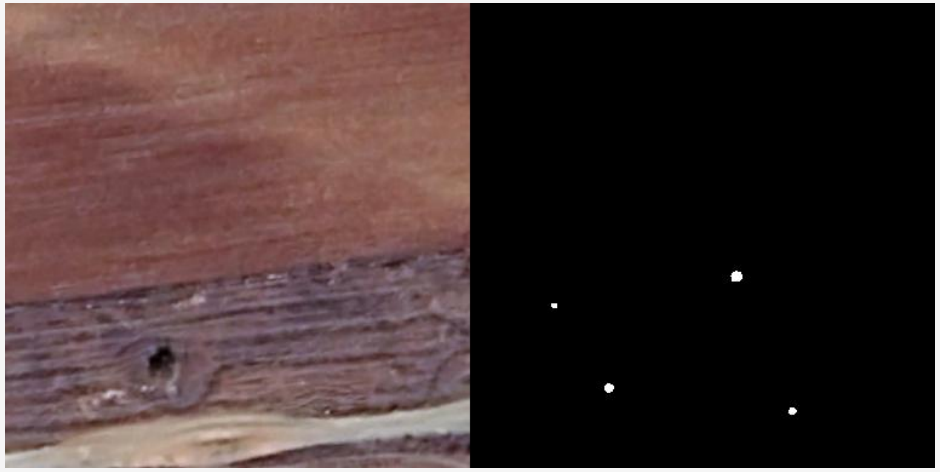
- Individual garbage/litter (1-2 m²)

Urban/ Suburban Environment





Countryside



What does it detect?

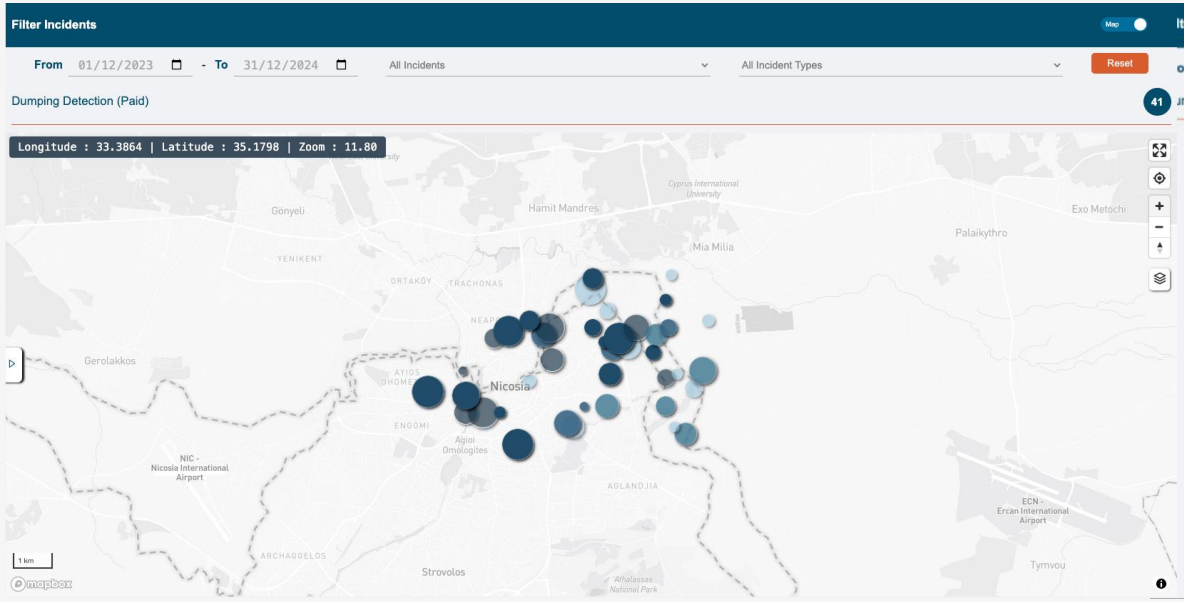
- Stacks of garbage of different nature (2-9 m²)

Countryside

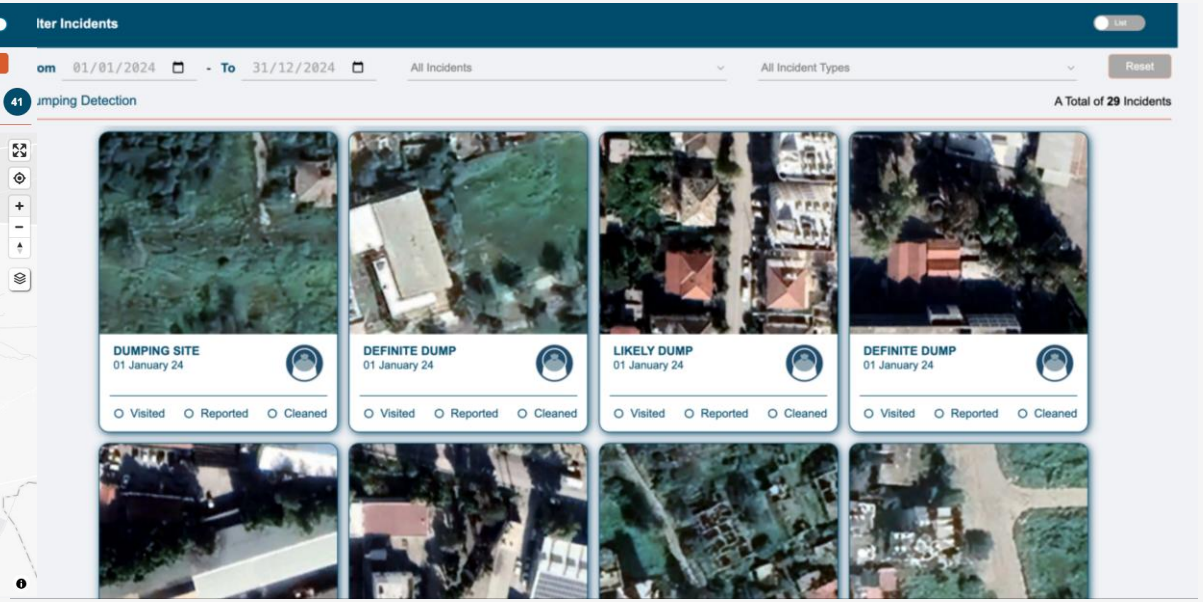
Urban/ Suburban Environment

Portal Insights

Offered via the **PERIOPSIS Portal**



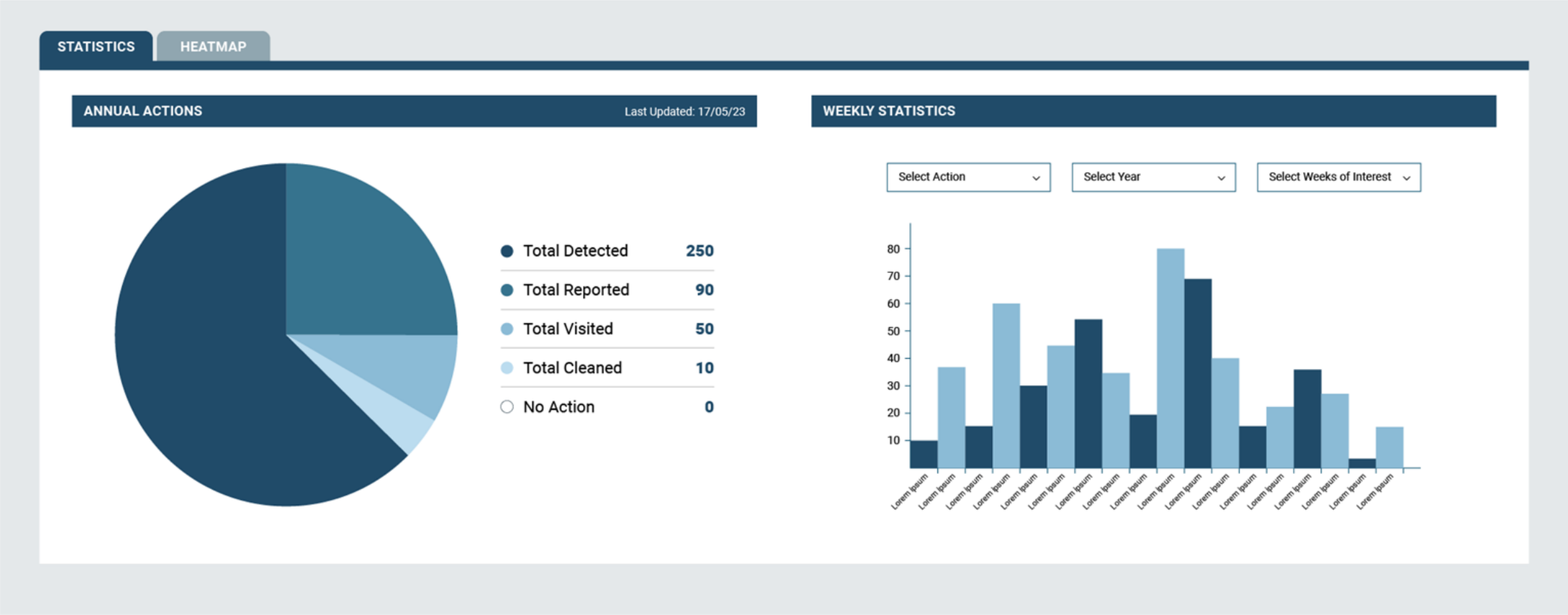
Map view



List view

Portal Insights

Providing analytical data and statistics on incidents detected, such as monthly and annual data, incident history and more.



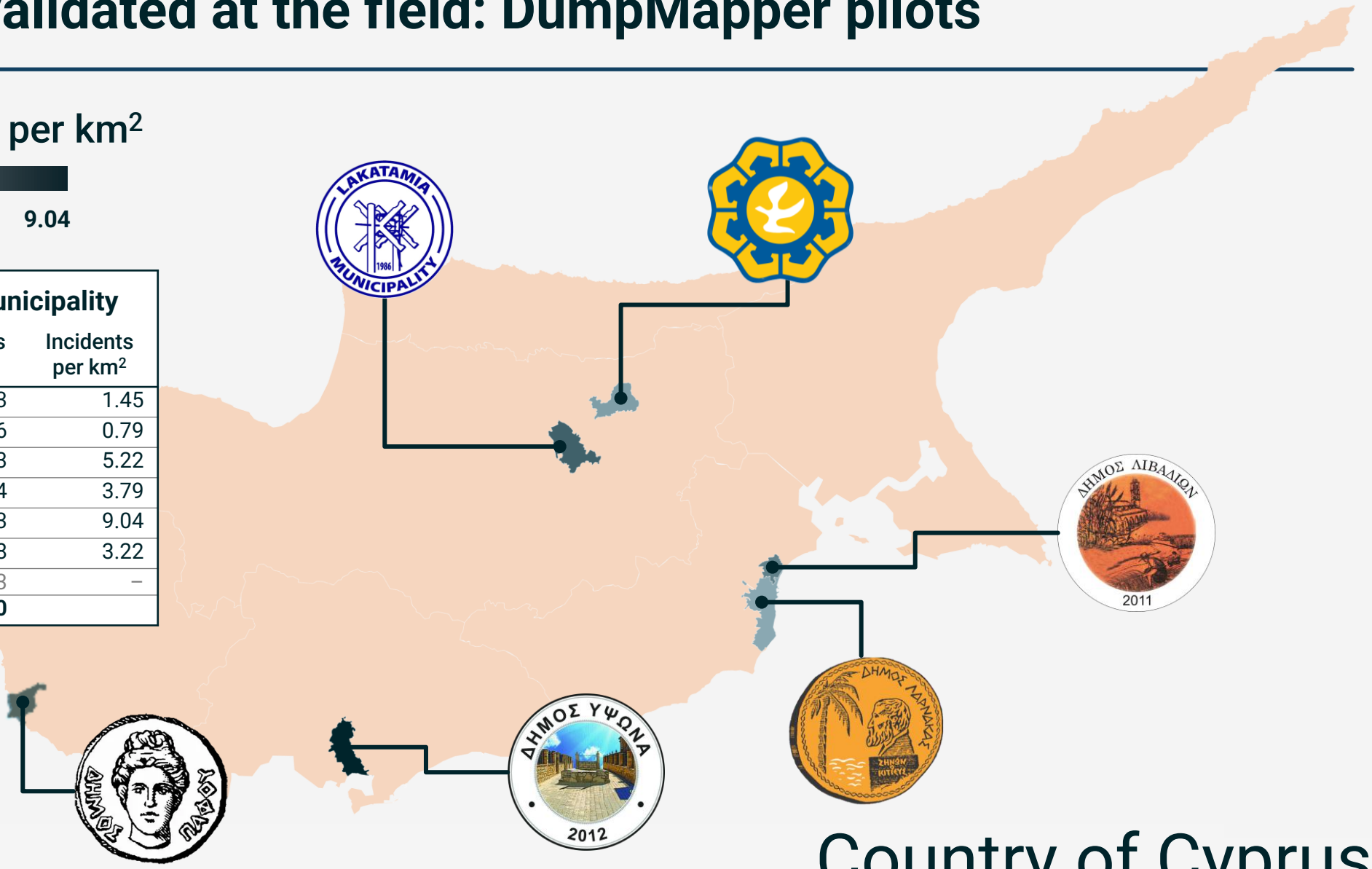
Technology validated at the field: DumpMapper pilots

Detected incidents per km^2

0.79 — 9.04

Incidents detected per municipality

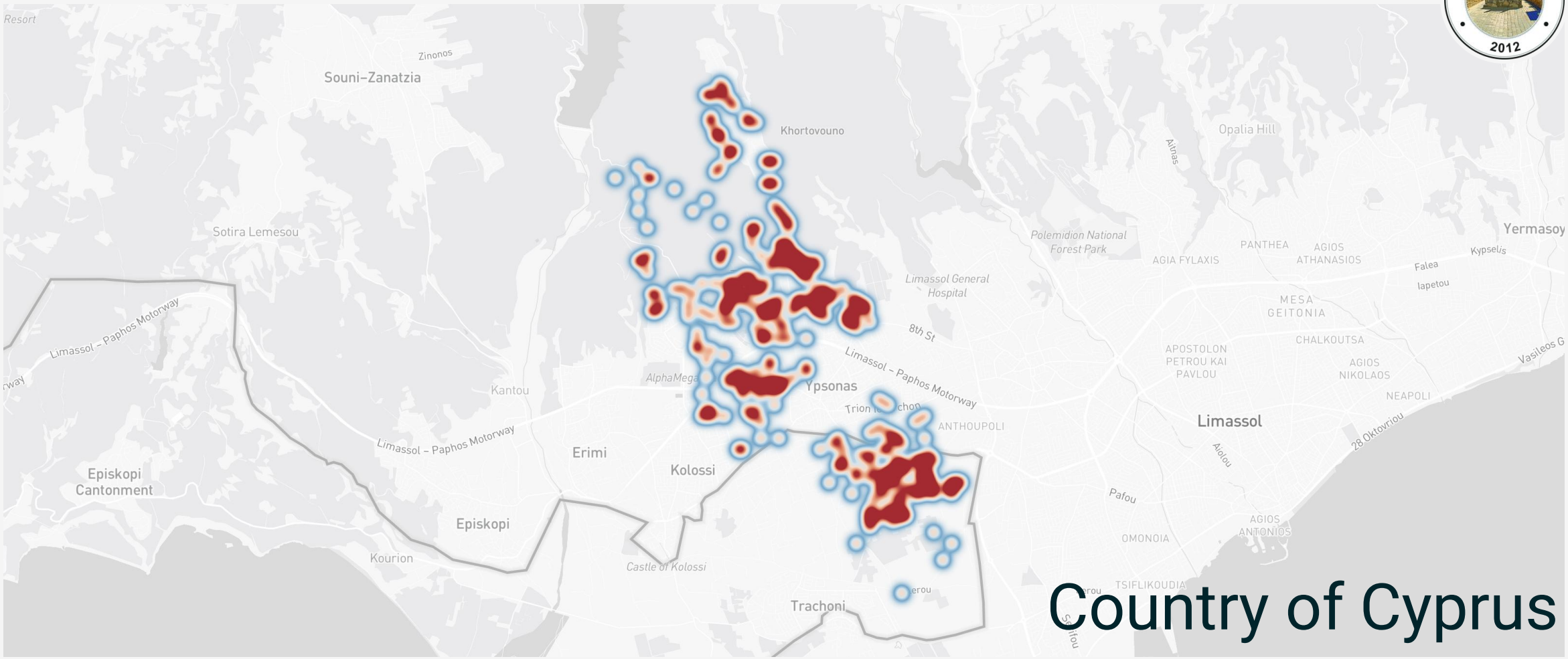
Municipality	Area (km^2)	Incidents	Incidents per km^2
Nicosia	50.3	73	1.45
Larnaca	32.8	26	0.79
Lakatamia	27.4	143	5.22
Paphos	16.9	64	3.79
Ypsonas	32.4	293	9.04
Livadia	8.7	28	3.22
Others	–	193	–
Total		**820**	



Country of Cyprus

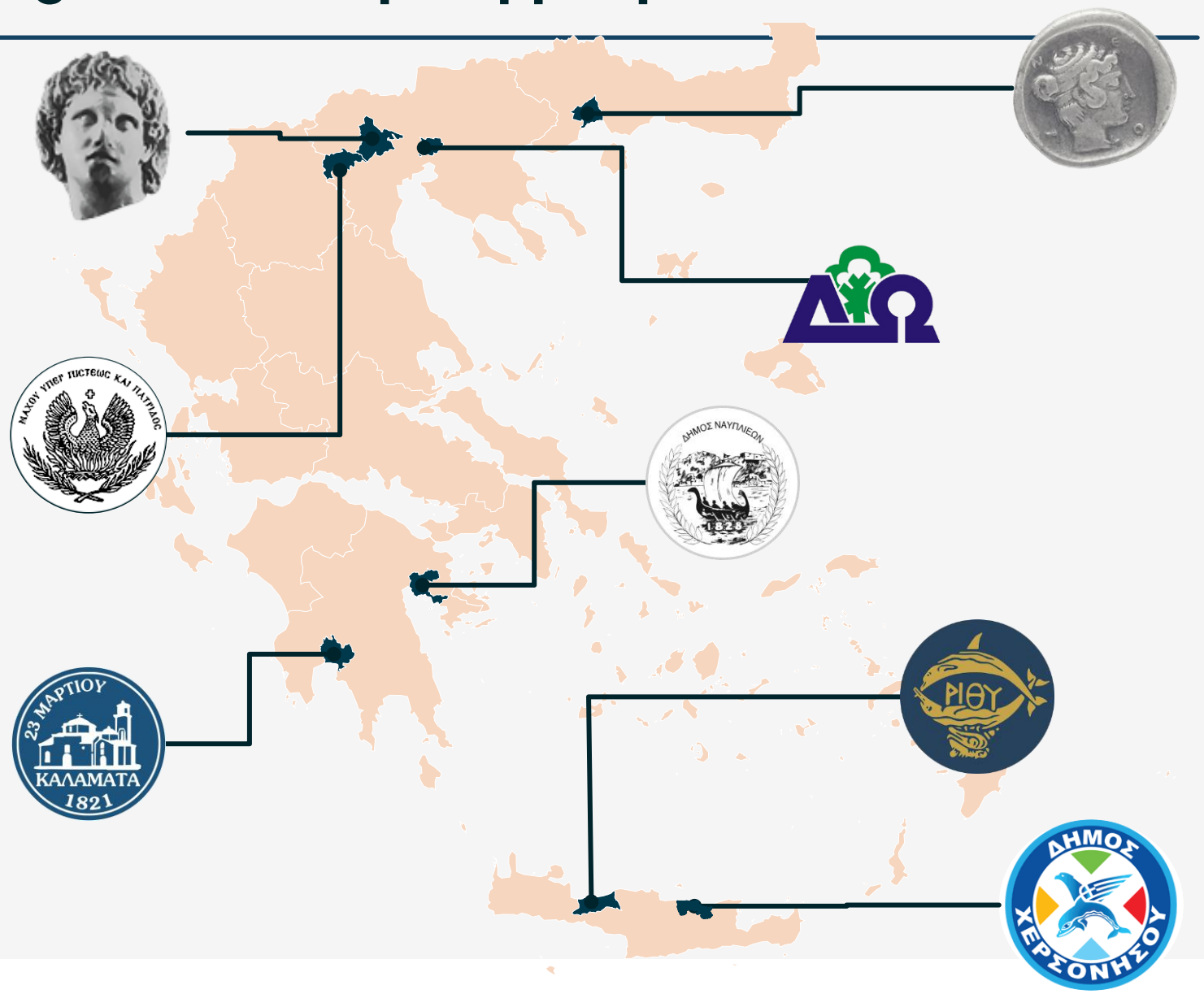
Technology validated at the field: DumpMapper pilots

Dumping heatmap at the Municipality of Ypsonas



Municipalities participating in the DumpMapper pilot in Greece

Municipality	Size (km²)
Kavala	351.4
Naousa	425.5
Oreokastro	217.9
Pella	669.2
Hersonissos	272.2
Rethymno	396.3
Kalamata	440.3
Nafplio	390.2



Market

Targeted users

- Municipalities (~130K such authorities in Europe)
- Waste operators/Cleanup companies (~ 47 thousand only in Europe)
- Ministries/national agencies, communities and other beneficiaries

Why?

- Timely detection of dumping
- Savings from reduced person-hours and vehicle use (up to 25%)
- Data-driven monitoring
- Enhanced Efficiency

Competitive Advantage

- Very limited direct competitor (designated landfields)
- High accuracy of models (**98% precision, 85% recall**)
- Easy to use for less skilled personnel
- First to the market

Our services

A **platform technology** that we apply in other domains as well, providing a growing number of services in the field of **environmental observation** to achieve sustainable goals, including:

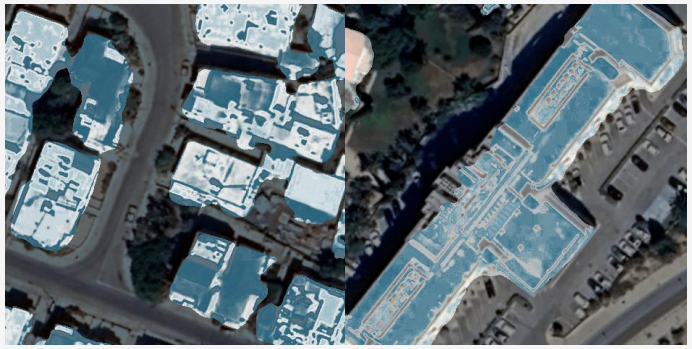
URBAN PLANNING & INFRASTRUCTURE

Swimming Pools Detection

Reliable insights for sustainable ecosystems

URBAN PLANNING & INFRASTRUCTURE

Building Detection/Building area estimation



ENVIRONMENTAL & CLIMATE MONITORING

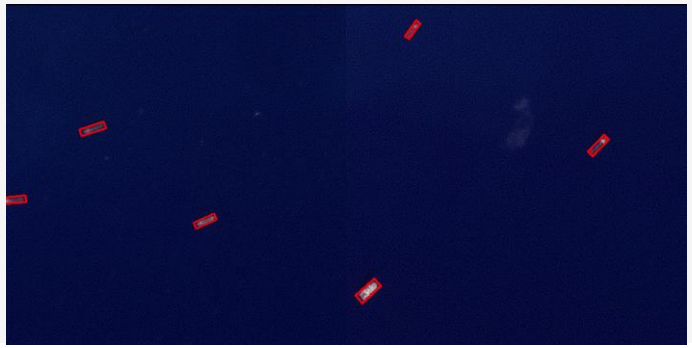
Trees Detection

Reliable insights for sustainable ecosystems

MARINE & MARITIME

Vessels' detection

Tracking vessels for maritime compliance.



OTHER

Custom services

Our Team

Andreas Kamilaris
Managing Director

Chirag Padubidri
Operations Manager

Savvas Karatsiolis
Deep Learning Scientist

Marios Zittis
Project Manager

Aytac Guley
Full-Stack Web Developer

Jyoti Harti
AI Engineer

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Thank you for your attention!

Find us on social media:

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