



A distributed data-mining software platform for extreme data across the compute continuum

www-extract-project.eu

Harnessing EXTREME Data for Crisis Management: An Urban Digital Twin for Personalized Evacuation Routes in Venice



@EXTRACT_EU_proj



EXTRACT EU project

PERSONALIZED EVACUATION ROUTING (PER)



The EXTRACT project revolutionises data mining by integrating advanced computing technologies—from edge to cloud to HPC—into a unified platform.

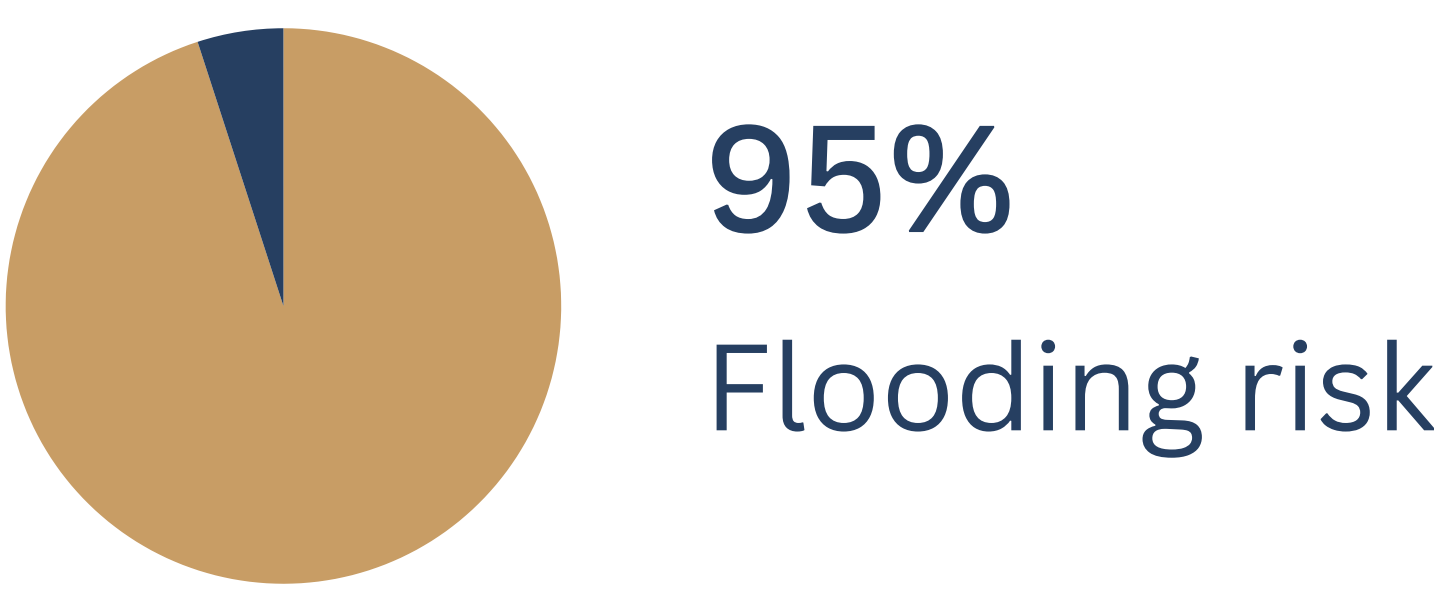
In the PER use case, EXTRACT technology will serve to guide people safely through the city of Venice in real time.

This use case leverages high-volume and high-variety data from multiple real-time and static sources, to enable personalised evacuation routes tailored to individual needs and changing environmental conditions.

BUILDING A RESILIENT VENICE THROUGH INNOVATION

THE CHALLENGE

Venice's unique geography

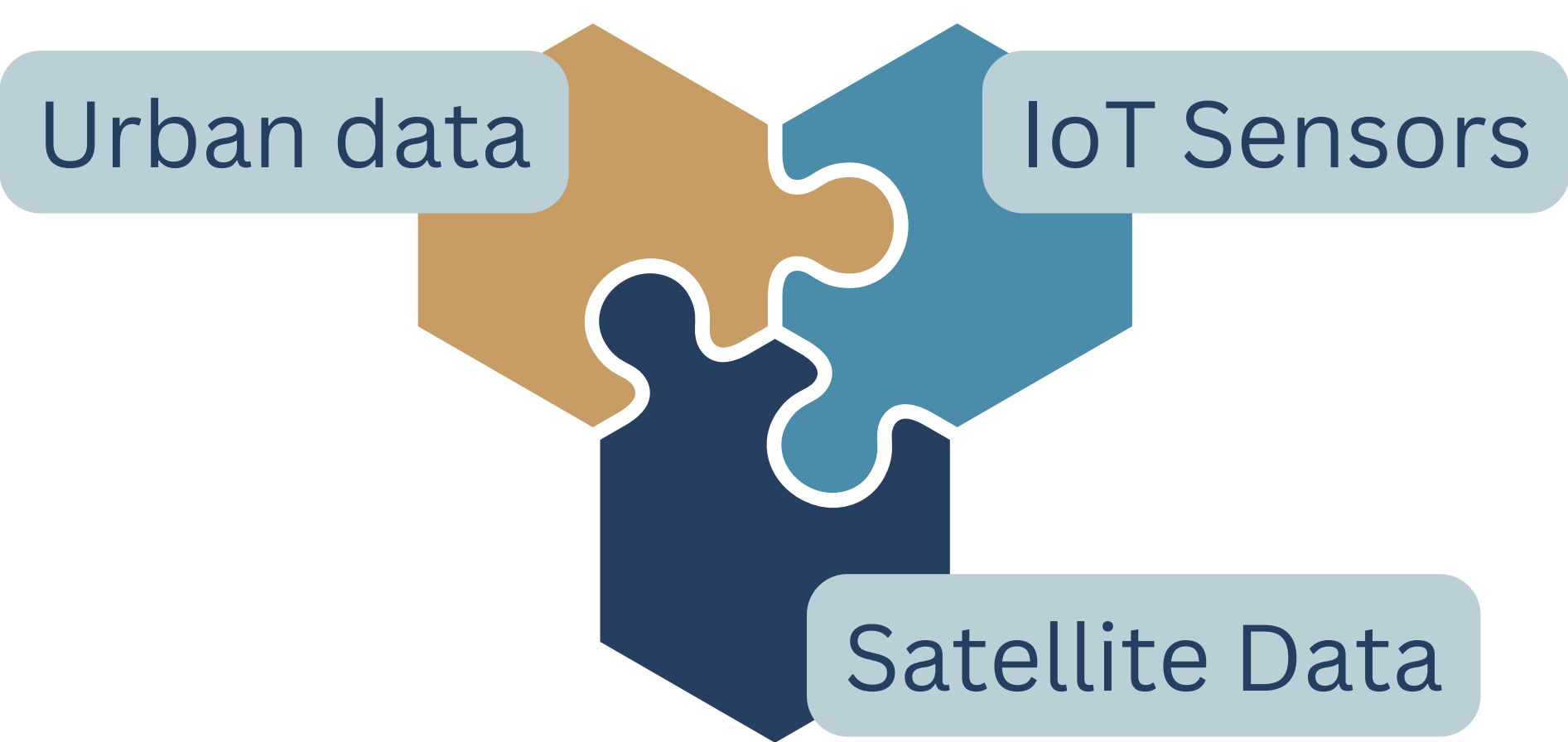


Overcrowded and unprepared population

THE BIG DATA

Real-time, data-driven evacuation routes

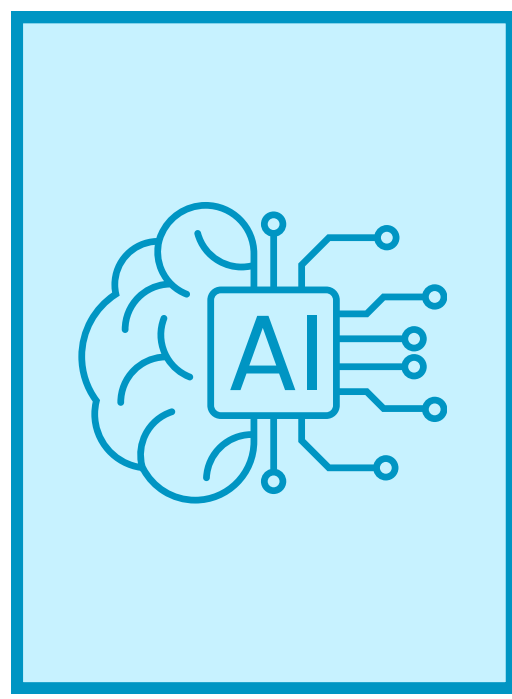
Guides citizens to safety in **real-time using mobile phones**



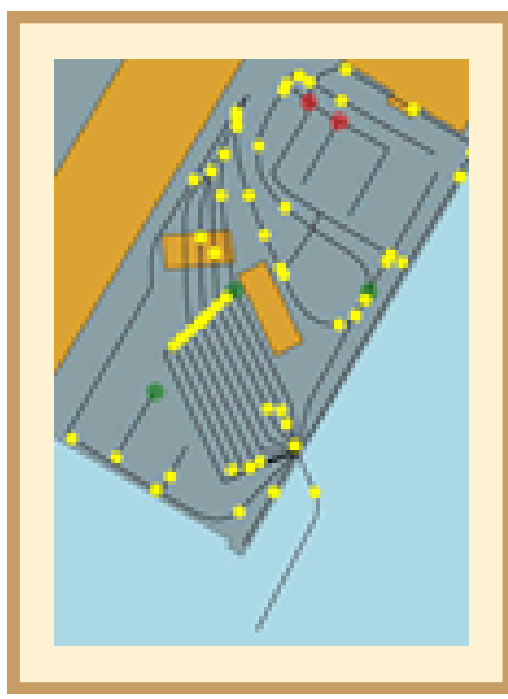
THE TECHNOLOGY



Urban Digital Twin



Multi-Agent Reinforcement Learning Model



Simulation environment

THE USE CASE How Personalized Evacuation Route works



Event



Data integration & analysis across the compute continuum



Instructions to individuals

WHY IT MATTERS

- Reduced vulnerability, faster evacuations, and better coordination for first responders
- Harness the power of technology for fast insights
- Less overcrowding, congestion, and confusion during crises



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