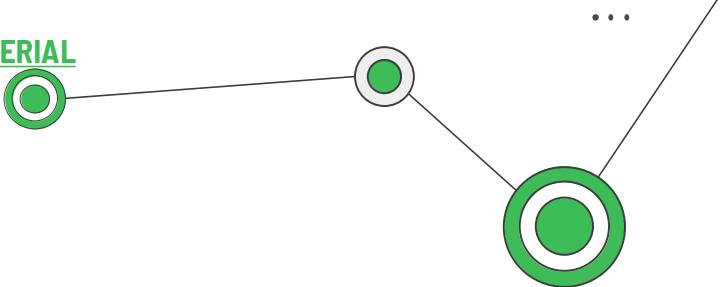
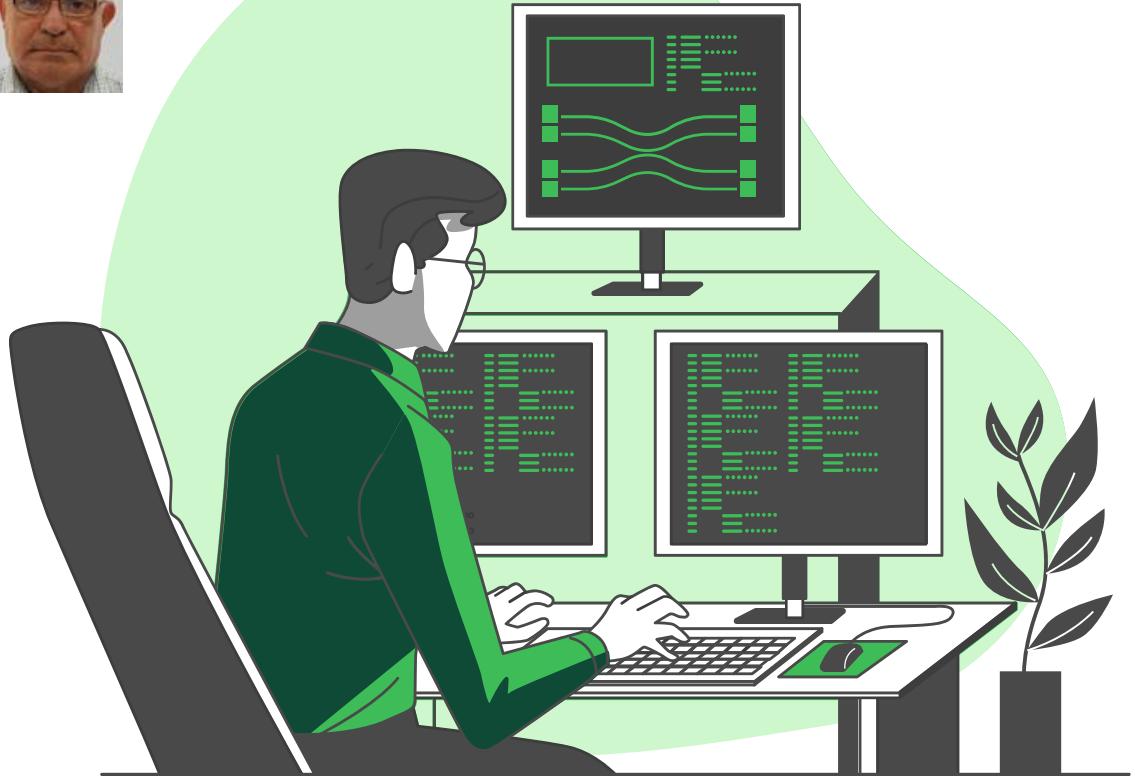


OxFORD SUSTAINABLE DEVELOPMENT ENTERPRISE -QUANTUM AI MULTIPHYSICS-HP2 IMPERIAL  
COLLEGE -OPEN WEATHER- (LONDON AI MULTIPHYSICS CLUSTER)  
DATA FIRST SECOND SUSTAINABILITY

[www.multiphysics.org](http://www.multiphysics.org)

E-MAIL: [S.BONFA@YAHOO.CO.UK](mailto:S.BONFA@YAHOO.CO.UK) [U.GUNASILb@mutiphysics.org](mailto:U.GUNASILb@mutiphysics.org)

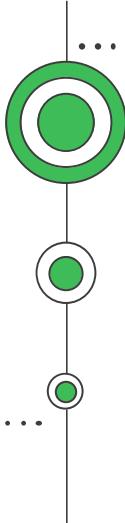


AI CITY AND  
TERRITORIAL  
INITIATIVES  
ACROSS  
EUROPE

# AI TOOL DEVELOPMENT CONNECTED AND DELIVERY SUSTAINABLE DEVELOPMENT

Imperial College London

<https://www.imperial.ac.uk/earth-science/research/research-projects/aiurbanhealth/>



# THE EU RESEARCH

## EUROPEAN INNOVATION COUNCIL

EUROHPC-AI Human Centric Data Stewardships Infrastructure Platform

1.1

### The EU preparatory initiative

Innovation for place based territorial transformations as well as actionbook practices and tools.

Demonstrator Area:  
Dello Stretto, Calabria, Italy

1.2

### A New European Innovation Agenda

Communication from the commission to the:  
European Parliament

The Council  
The European Economic and Social Committee  
The Committee of Regions

1.3

### Imperial College London and Open Weather AI Challenge Funding

1.4

### EU-Mediterranean HUB for R&I Programme

1.5

### Horizon Europe

Horizon Europe is the world's largest collaborative research programme worth £80bn+ over 7 years (since 2021).

It is aimed at driving research excellence, fostering innovation and tackling global challenges through collaborative projects and funding opportunities.

1.6

### EUROHPC-AI Human Centric Funding

Mission: To bridge  
Data Stewardships  
HPC Computation  
Artificial Intelligence  
Infrastructure serving humanity  
[eurohpc.europa.eu](http://eurohpc.europa.eu)

1.7

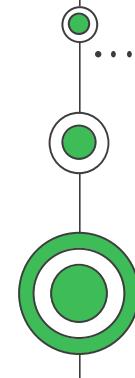
## Data Space Funding Opportunities

1.8.1 Connecting Local Digital Twins [www.ltd4ssc.eu](http://www.ltd4ssc.eu) all year round.

1.8.2 In preparation: EU Data Space call (Next Year)

1.8.3 Data Space for Manufacturing Digital 2026 DSM AI o/09

1.8



# ONE EUROPEAN DIGITAL TWIN CLUSTER

Oxford Network for sustainable  
development Enterprise and  
Eviroment -ONE-HP2  
[www.clustercollaboration.eu](http://www.clustercollaboration.eu)

# RELEVANT PACKAGES

## 5.0.0

### **Best Practice Proposal AI Digital Twin Master Plan**

Area Metropolitana Reggio Calabria and Messina, Italy.

Demonstrator: Calabria AI Digital Cluster Activities

The EU Initiative in collaboration with EU joint research center and the EU Parliament is at the moment delivered in 250 EU territories with us being selected as territorial ambassadors for the calabria region.

## 5.1.1

### **Set-up of an AI Digital Cluster**

Lead by Metropolitana Reggio Calabria, Ferruzzano Municipality composed of:

- The University of Messina
- The University of the mediterranean, Reggio Calabria.
- Area Grecanica GAL
- Private Sector Agrojonica
- Studio Cantisani
- OxSDE EEIG, United kingdom
- Imperial College London
- Belfast Region Digital Twin Center

## 5.1.2

### **Pilot Project**

Area : Vasta Dello Stretto evolving to Interregional Integrated Transport AI Surrogate Model Digital Cluster for Calabria,Basilicata, Puglia Campania and Molise region Studio Cantisani



## Urban Space Innovation Pilot Area

Motivation

Key projects as solutions

...

02

## Proposal focus

Sustainable development strategy  
for Area dello Stretto.

...

03

## Testbeds and Scaling

Calabria Pilot , River Laverde  
Sicily Pilot, Milazzo Coast  
Commitment

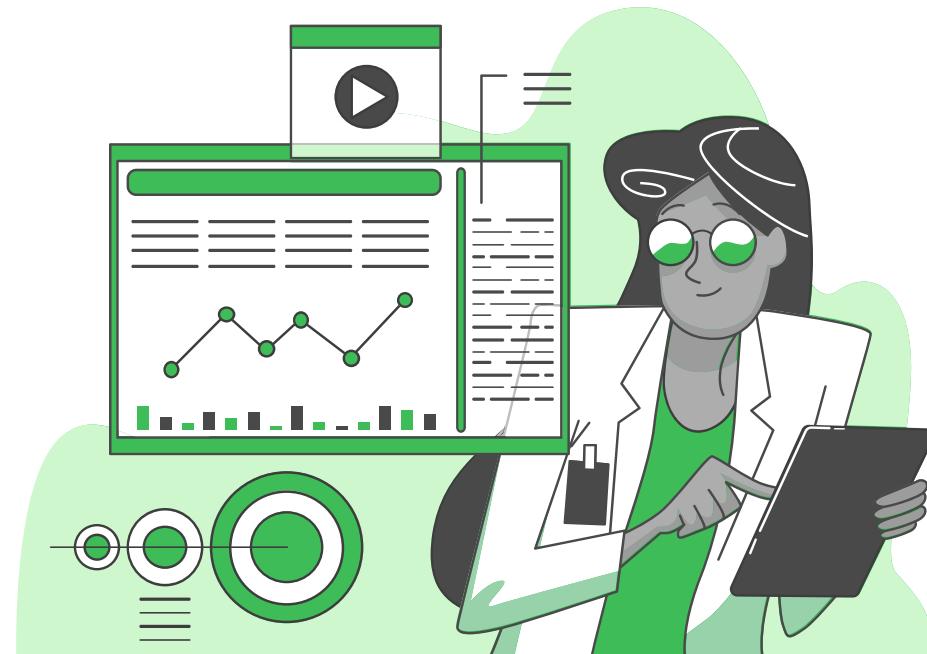
...

04

## Activities, Actions and Outcomes

Citizen and Stakeholder activities  
Core Actions, expected outcomes  
and replication potential.

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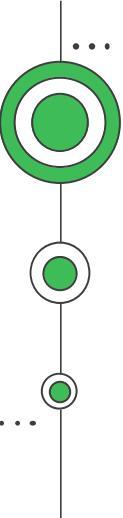




01

# URBAN DATA SPACE AI INNOVATION PILOT AREA

TESTBED: RIVER LAVERDE, CALABRIA, ITALY  
A TERRITORIAL TRANSFORMATION AREA GRECANICA AND BEYOND



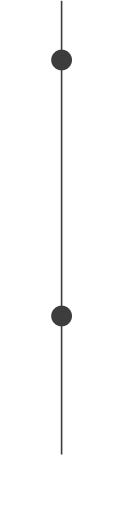
# MOTIVATION

Since 2013, the European Straits Initiative (ESI) has called for a sustainable development strategy for the Area Dello Stretto. Building on this, NOSTRA partners (Messina and Reggio Calabria) propose a common participatory strategy spanning both metropolitan areas and the wider "VASTA AREA" (Area Dello Stretto), engaging parks, coastal zones, ports, and citizens. The VASTA AREA is fragmented across water, mobility, energy, health and transport.

A long-term, unified territorial transformation plan is needed, anchored by a DT Center to integrate, plan, and manage this interconnected territory.

In this direction, 8 key projects have been or are being implemented.

...





# KEY PROJECTS

01

## Vast Digital Cluster

Spanning 40 municipalities in the Area Grecanica, Reggio Calabria is being implemented under the EU place-based innovation/territorial-transformation initiative.

02

## DT Feasibility study

Completed by the University of Messina, specifically for the ports of the Metropolitan City of Messina.

03

## Establishment of Calabria Digital Cluster

Through the University of Reggio Calabria.

04

## Launch of Open Calabria Observatory

Pioneered by the university of Reggio Calabria.



# KEY PROJECTS

05

## DT Center development and Ports DT

Collaboration with Belfast City Region (UK) for the development of the DT center.

Collaboration with the University of Southampton (UK) on Ports DT.

06

## “One Health, One Planet”

Collaboration with Imperial College London on the “One Health, One Planet” agenda.

07

## HPC-enabled AI-DT

A collaboration with UPC.

08

## Extensive EU pilot supported by European Parliament

An EU “Innovation Capacity Building-Place-Based Territorial Transformation” Pilot with 40 Area Grecanica communities (GAL) and the JRC.



02

# PROPOSAL FOCUS: AREA DELLO STRETTO.

SUSTAINABLE DEVELOPMENT STRATEGY DESIGN

# THIS PROPOSAL DESIGNS A SUSTAINABLE- DEVELOPMENT STRATEGY FOR THE AREA DELLO STRETTO BY...

**CREATING A CENTER OF EXCELLENCE**

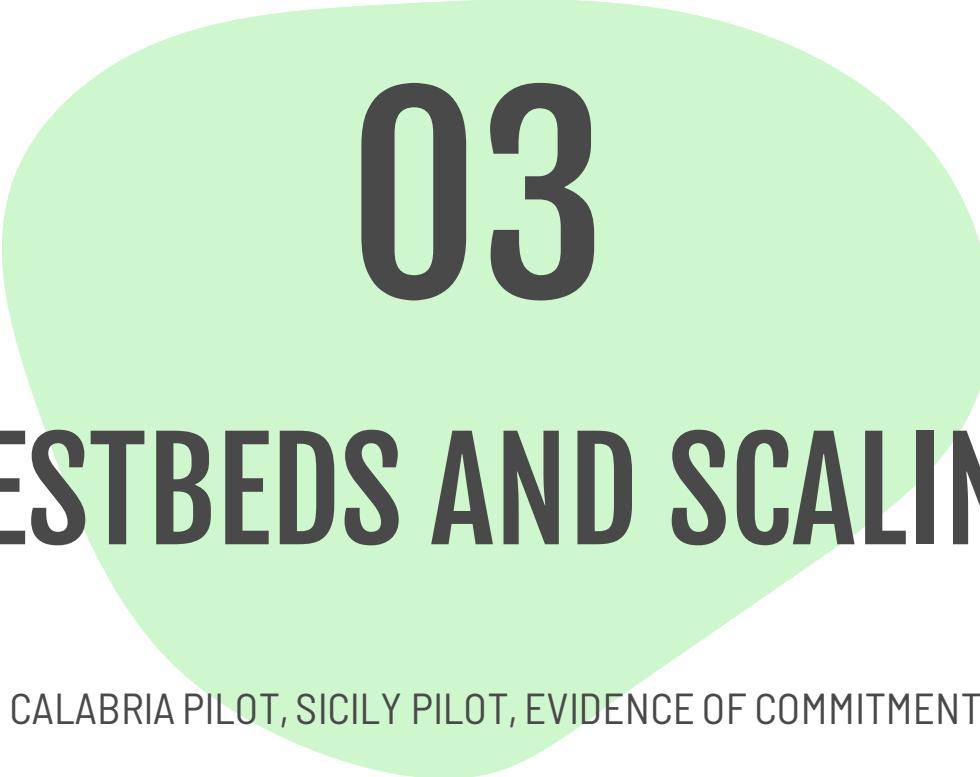
**PLANNING AND OPERATING AN OPEN DATA POLICY LABORATORY**

**DEVELOPING AN AI-AGENT DT (CO-AI-ARCHITECT)**

Used to federate data, simulate currently disconnected territorial ecosystems and surface new economic opportunities.

**COMBINING ADVANCED AI MODELS THROUGH THE AI DT CENTER**

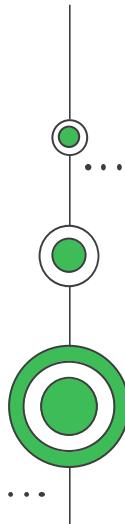
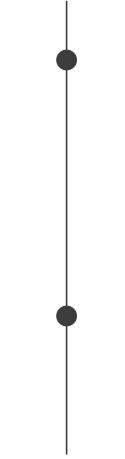
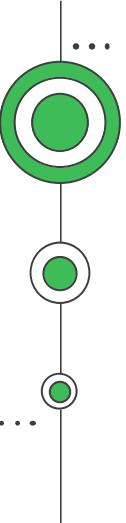
With secure access to data, tools, software and hardware, decision makers can plan and manage the place based territorial transformation. It will interconnect Reggio Calabria and Messina with their surrounding *borghi*, positioning both as city-region hubs linked to local GALs in Sicily and Calabria.

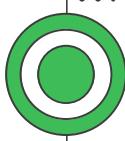


03

# TESTBEDS AND SCALING

CALABRIA PILOT, SICILY PILOT, EVIDENCE OF COMMITMENT.





## River Laverde FERRUZZANO SYSTEM AND SURROGATEAI AGENCYMODEL CLOUD BASED MULTIPHYSICS SIMULATION

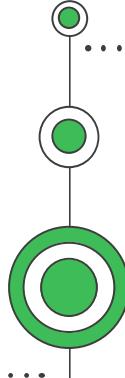
Bordered by the Aspromonte forests and the Ionian coast, River Laverde has been studied by local universities and the UK Centre for Ecology & Hydrology (Wallingford), including climate-impact water modelling for WEFE systems and analyses of Diga Menta's supply to Reggio Calabria.

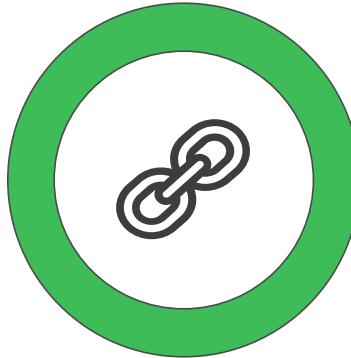
The site will digitise diverse ecosystems (forestry, freshwater, climate, coastal/marine, agriculture, urban) bridged with data space AI surrogate model simulation cloud based and serve as the territorial DT hub for scaling across the Area dello Stretto.

## SICILY PILOT

### Milazzo Coast

Milazzo will be the initial coastal/urban DT, extendable across the Area dello Stretto for coastal-zone planning and management.





## EVIDENCE OF COMMITMENT

The Calabria Digital Cluster, led by OxSDE, brings together the University of Reggio Calabria, the Metropolitan City of Reggio Calabria (including GAL Area Grecanica, 40 municipalities), and the University of Messina (including GALs in the Messina metropolitan area).

...



04

# ACTIVITIES, ACTIONS AND OUTCOMES

CITIZENS AND STAKEHOLDER ACTIVITIES, CORE ACTIONS, EXPECTED OUTCOMES AND  
REPLICATION POTENTIAL.

# DATA SPACE AI DT AGENCY PLACE BASED PHASES



ENGAGING



ENVISIONING



ORCHESTRATION



DESIGNING



IMPLEMENTATION



LEARNING

The district council, via a PNR project, engages the community through events, workshops, and exhibitions, using the Calabria Digital Cluster platform to mobilise stakeholders.



# CORE ACTIONS: THE PROJECT WILL...



## Community

Deploy AI/AR/DT with partners to enable community-led change.



## Mobility

Apply JRC's place-based approach to reshape mobility along the tram corridor and nearby areas.



## Environment

Shift Reggio Calabria/ Messina from car-centric streets to greener, multifunctional public spaces.



## Investment

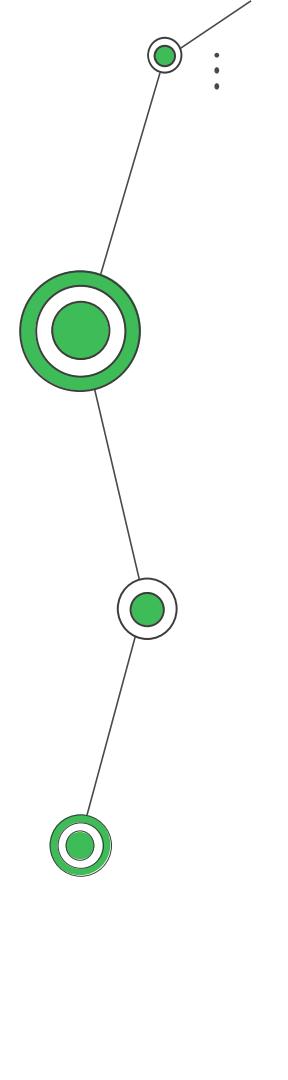
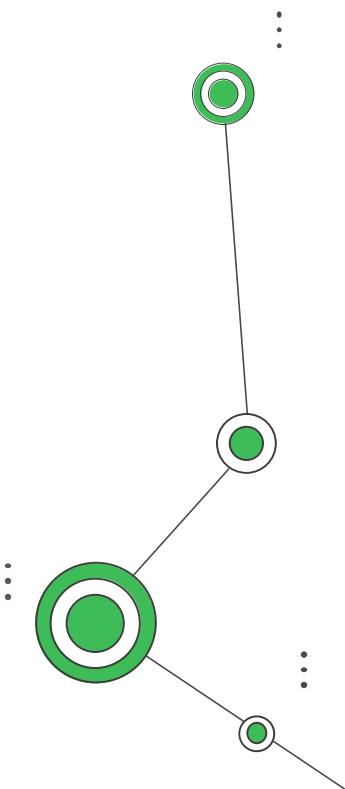
Support planning/design/stewardship of ~€13B in metropolitan investments across the Area dello Stretto.



## Risk

Use a territorial DT to assess risks and impacts across the Vasta Area, including the planned Strait bridge.

# EXPECTED OUTCOMES



Replicable community inclusion model where tech informs district decisions.

Transform car-centric streets into green, social public spaces – better mobility, lower pollution.

AI-enabled co-creation pilots integrating rural–urban systems; strategies aligned with Smart Specialisation and EU place-based start-ups.

Combining Advanced AI models through the AI DT center.



## REPLICATION POTENTIAL

These community-empowerment approaches can be transferred to other districts across Calabria, Sicily, and EU regions facing similar challenges.