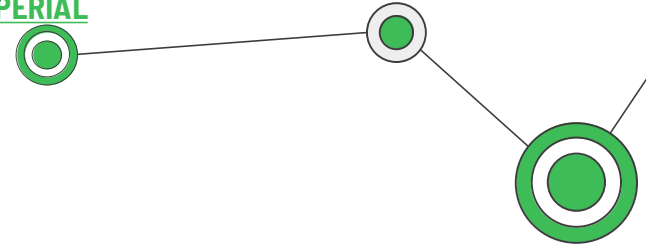
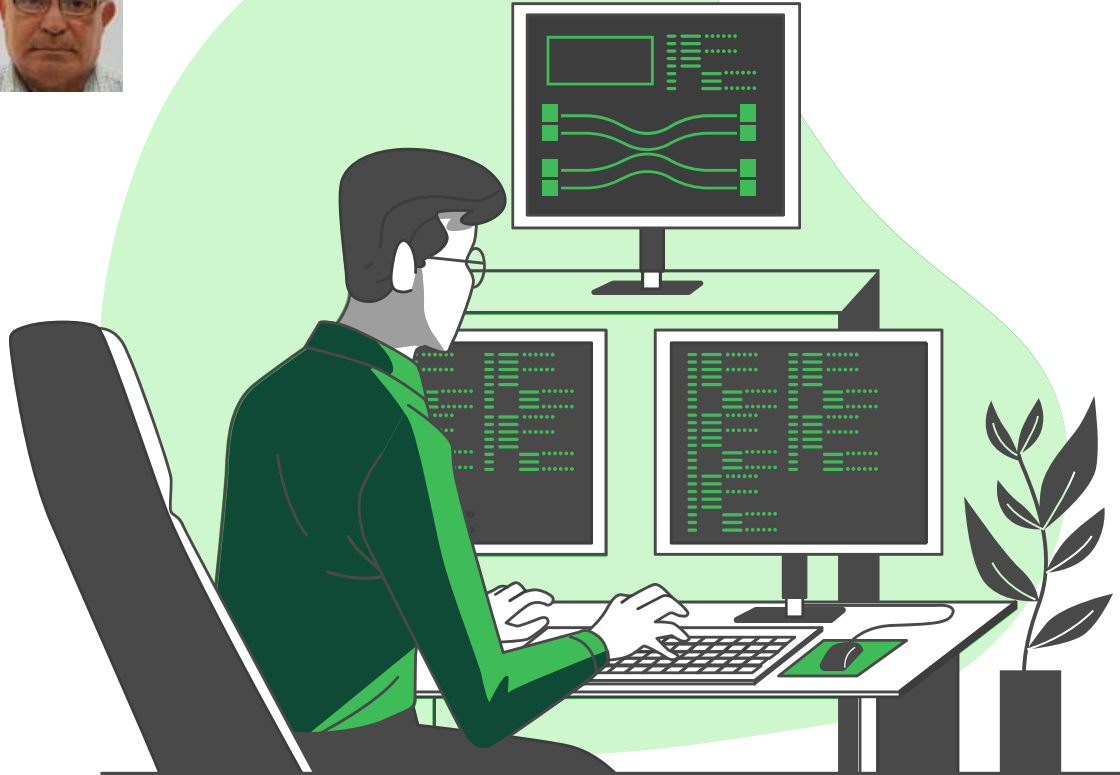


OxFORD SUSTAINABLE DEVELOPMENT ENTERPRISE -QUANTUM AI MULTIPHYSICS-HP2 IMPERIAL
COLLEGE -OPEN WEATHER-(LONDON AI MULTIPHYSICS CLUSTER)
DATA FIRST SECOND SUSTAINABILITY

www.multiphysics.org

E-MAIL: S.BONFA@YAHOO.CO.UK 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

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

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

Data Space Funding Opportunities

1.8.1 Connecting Local Digital
Twins 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
DSMAI o/09

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

1.4

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

1.7

EUROHPC-AI Human Centric Funding

Mission: To bridge

Data Stewardships

HPC Computation

Artificial Intelligence

Infrastructure serving
humanity

heurohpc.europa.eu

1.8



ONE EUROPEAN DIGITAL TWIN CLUSTER

Oxford Network for sustainable
development Enterprise and
Environment -ONE-HP2
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



Proposal focus

Sustainable development strategy
for Area dello Stretto.



Testbeds and Scaling

Calabria Pilot , River Laverde
Sicily Pilot, Milazzo Coast
Commitment



Activities, Actions and Outcomes

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

TABLE OF CONTENTS






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 Grecaica 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

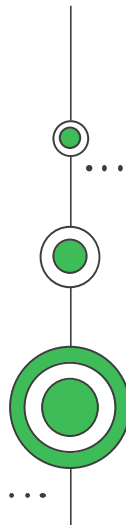
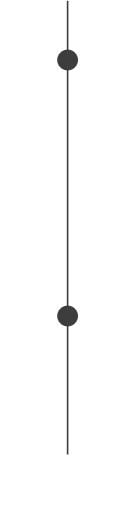
With secure access to data, tools, software and hardware, decision makers can plan and manage the place based territorial transformation. It will interconnect Reggio Calabria and Messina with their surrounding *borghi*, positioning both as city-region hubs linked to local GALs in Sicily and Calabria.




03

TESTBEDS AND SCALING

CALABRIA PILOT, SICILY PILOT, EVIDENCE OF COMMITMENT.





River Laverde FERRUZZANO SYSTEM AND SURROGATE AI AGENCY MODEL 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.

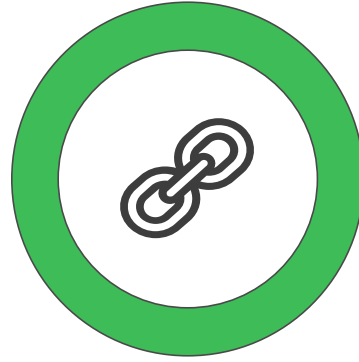
The site will digitise diverse ecosystems (forestry, freshwater, climate, coastal/marine, agriculture, urban) bridged with data space AI surrogate model simulation cloud based and serve as the territorial DT hub for scaling across the Area dello Stretto.

SICILY PILOT

Milazzo Coast

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

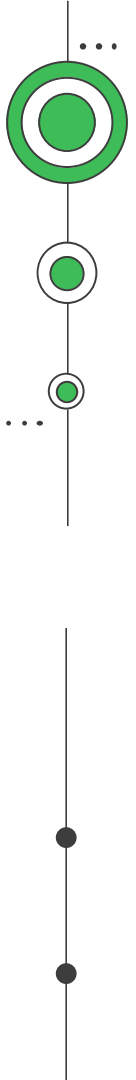




EVIDENCE OF COMMITMENT

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.

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