

JNCC/Copernicus Workshop:
Using Earth Observation for Water Quality
Monitoring

Andrew Tyler

Glenn Gorick for HZG



Living Laboratory prototype for the Forth Valley

*Forth ERA: A regional
recovery platform*





Scotland's International Environment Centre

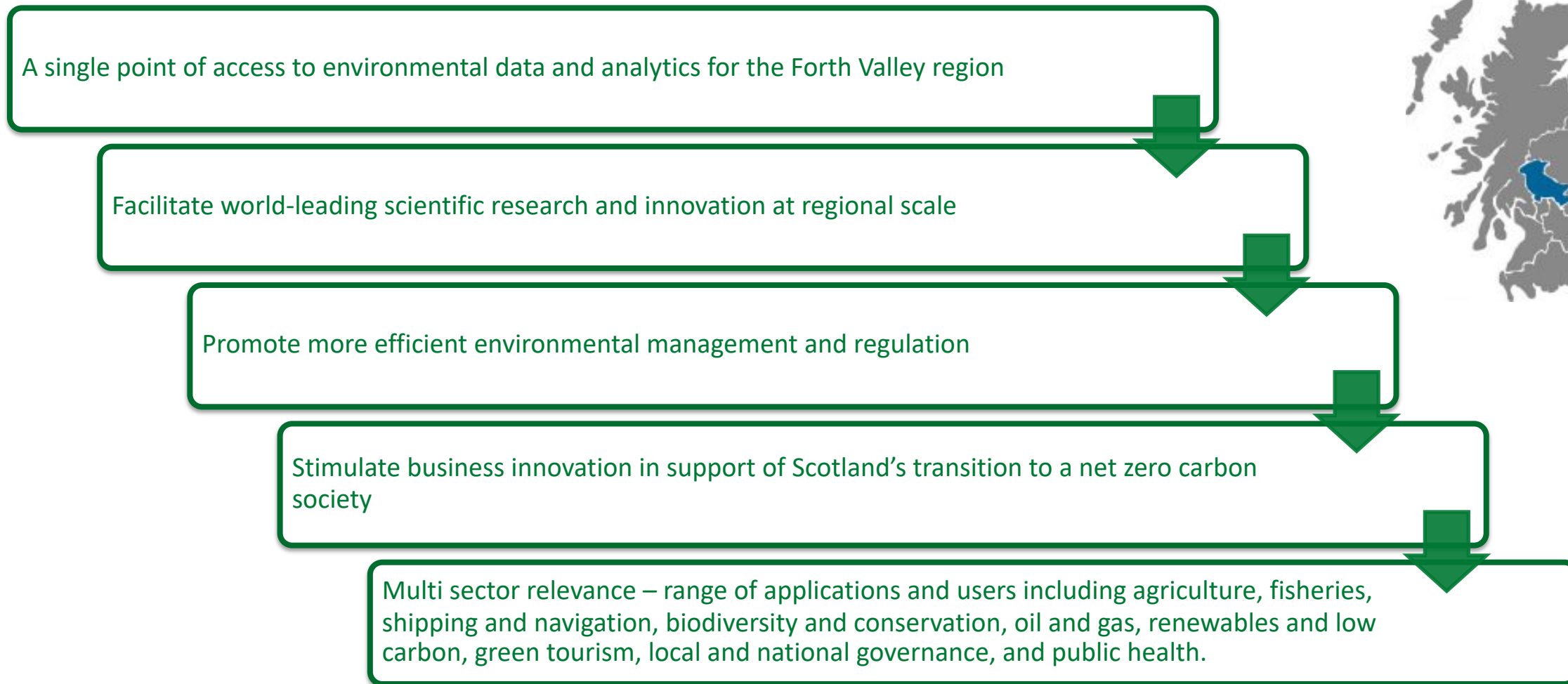
An opportunity for us to take a different approach, transforming and reimagining innovation to deliver sustainable, inclusive growth.

- Research and Policy Centre
- Test and demonstration facilities
- Skills training and enterprise
- Business innovation and incubation
- Creating the future world of work
- Made in Scotland for the global market

CITY REGION DEAL

Forth-ERA AIMS

Scotland's first regional recovery platform



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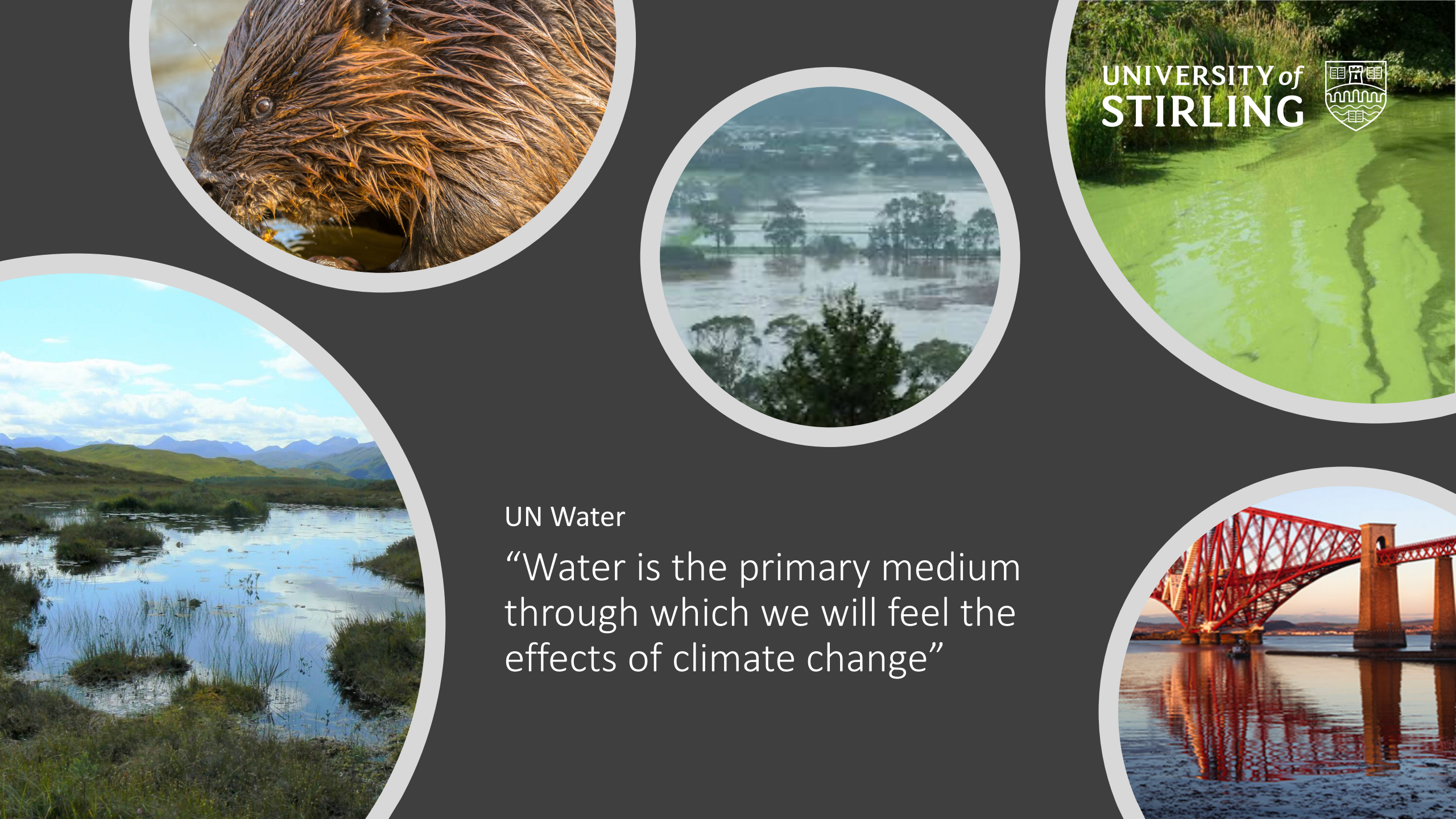
Supported by:



Scottish
Water
Trusted to serve Scotland

DIAGEO

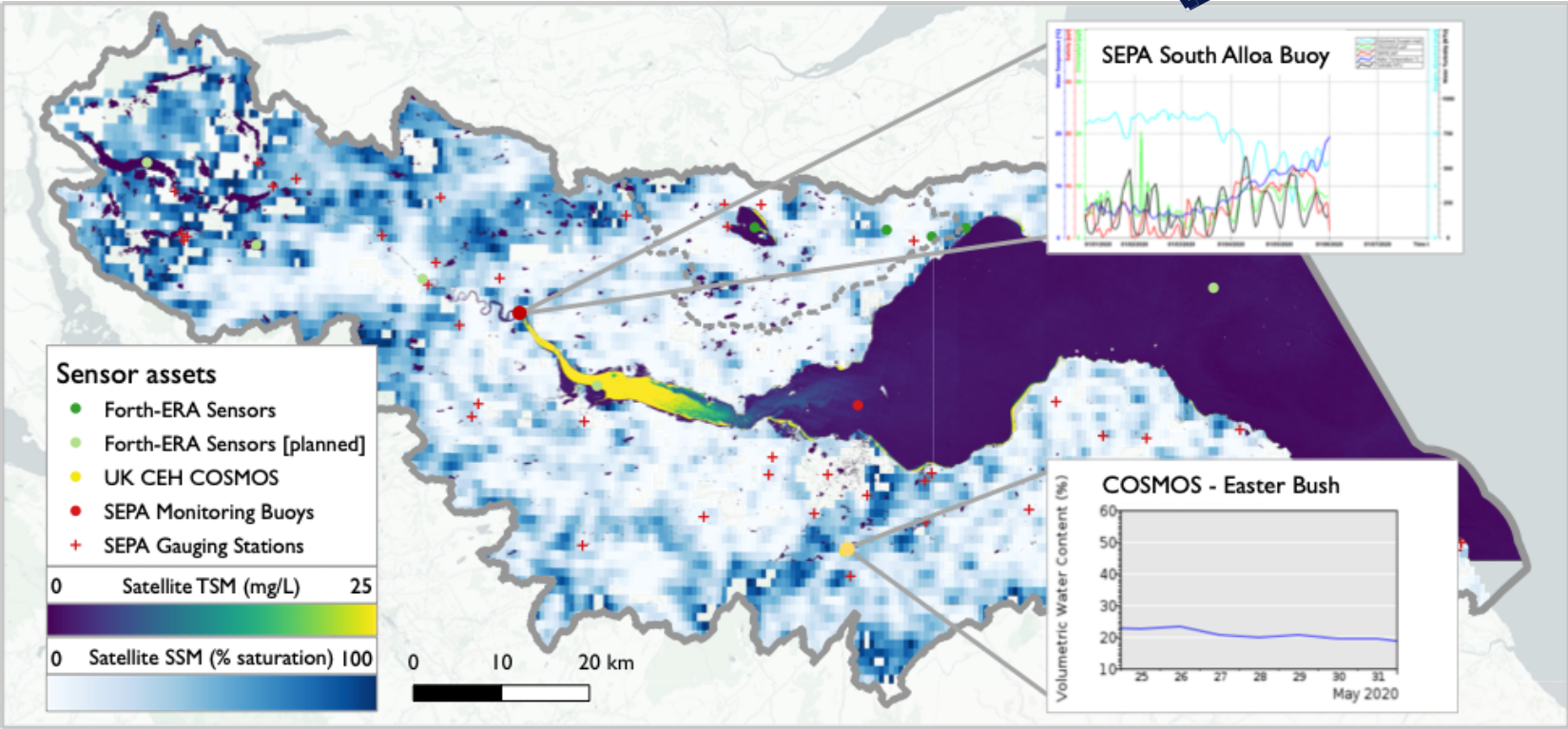
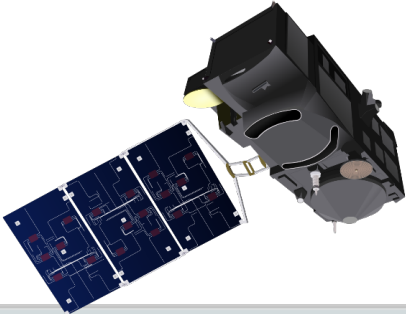




UN Water

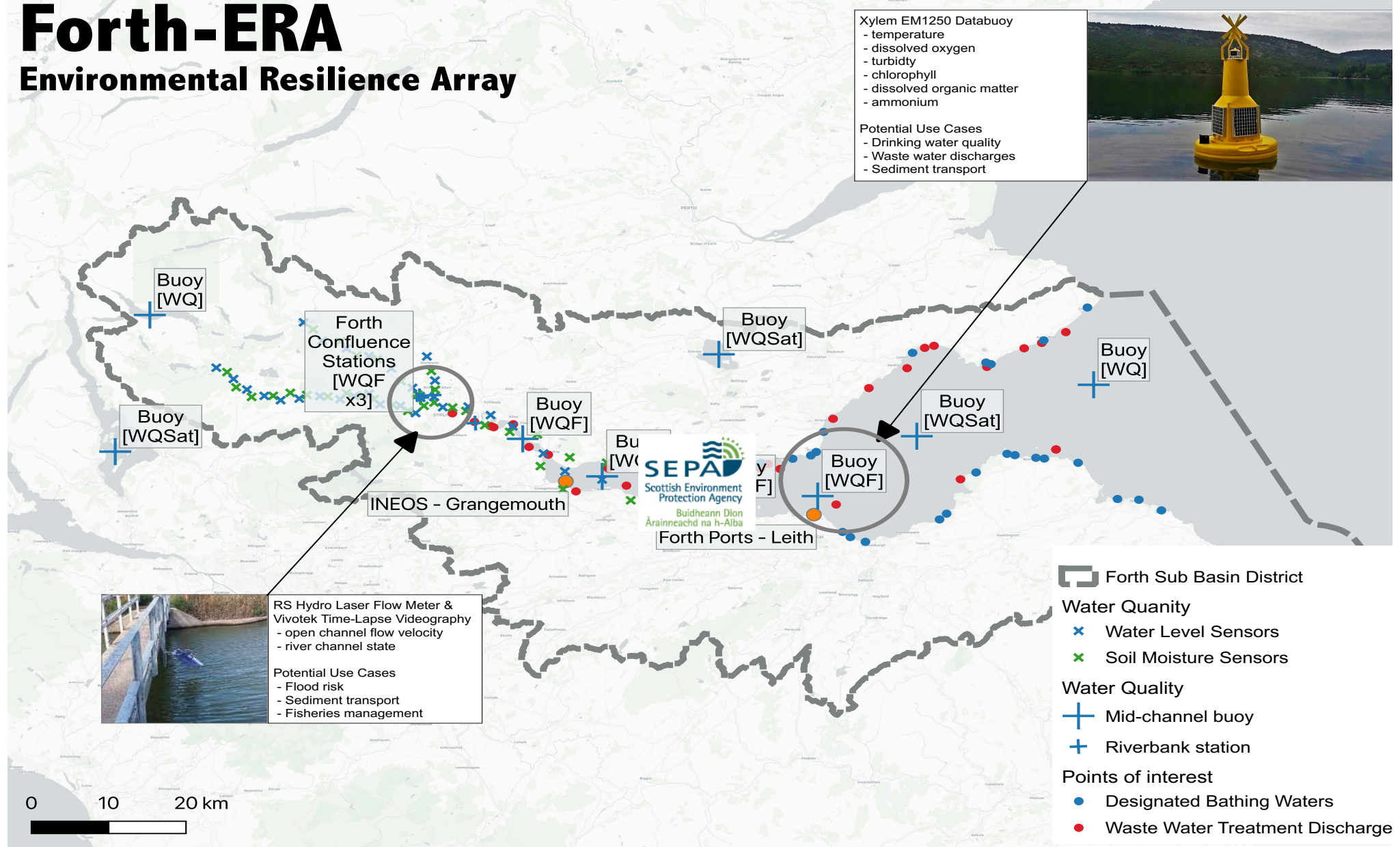
“Water is the primary medium
through which we will feel the
effects of climate change”

Forth-ERA: The Opportunity



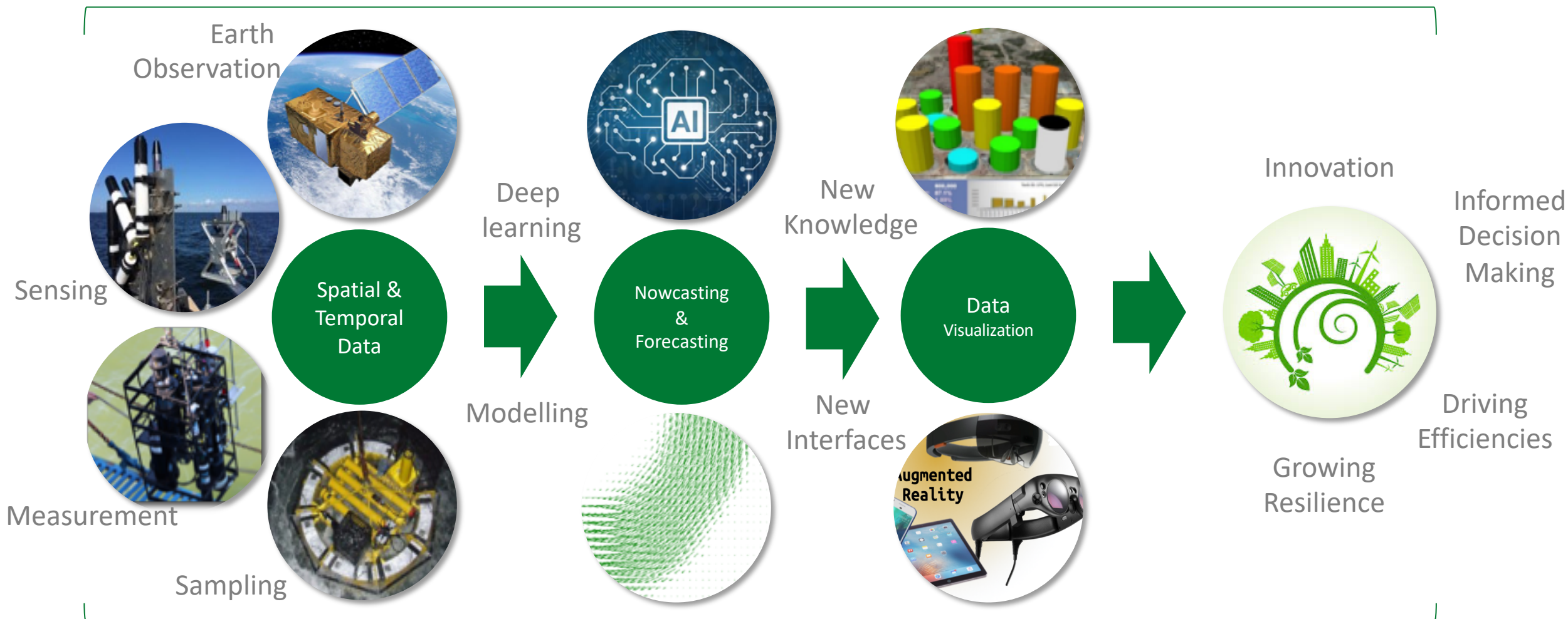
Forth-ERA

Environmental Resilience Array



Forth-ERA: A new perspective for the Green Recovery

Co-Development – Value Proposition



LoRaWan, 4G & **5G Digital Fabric**

Visualisation / AI Platform

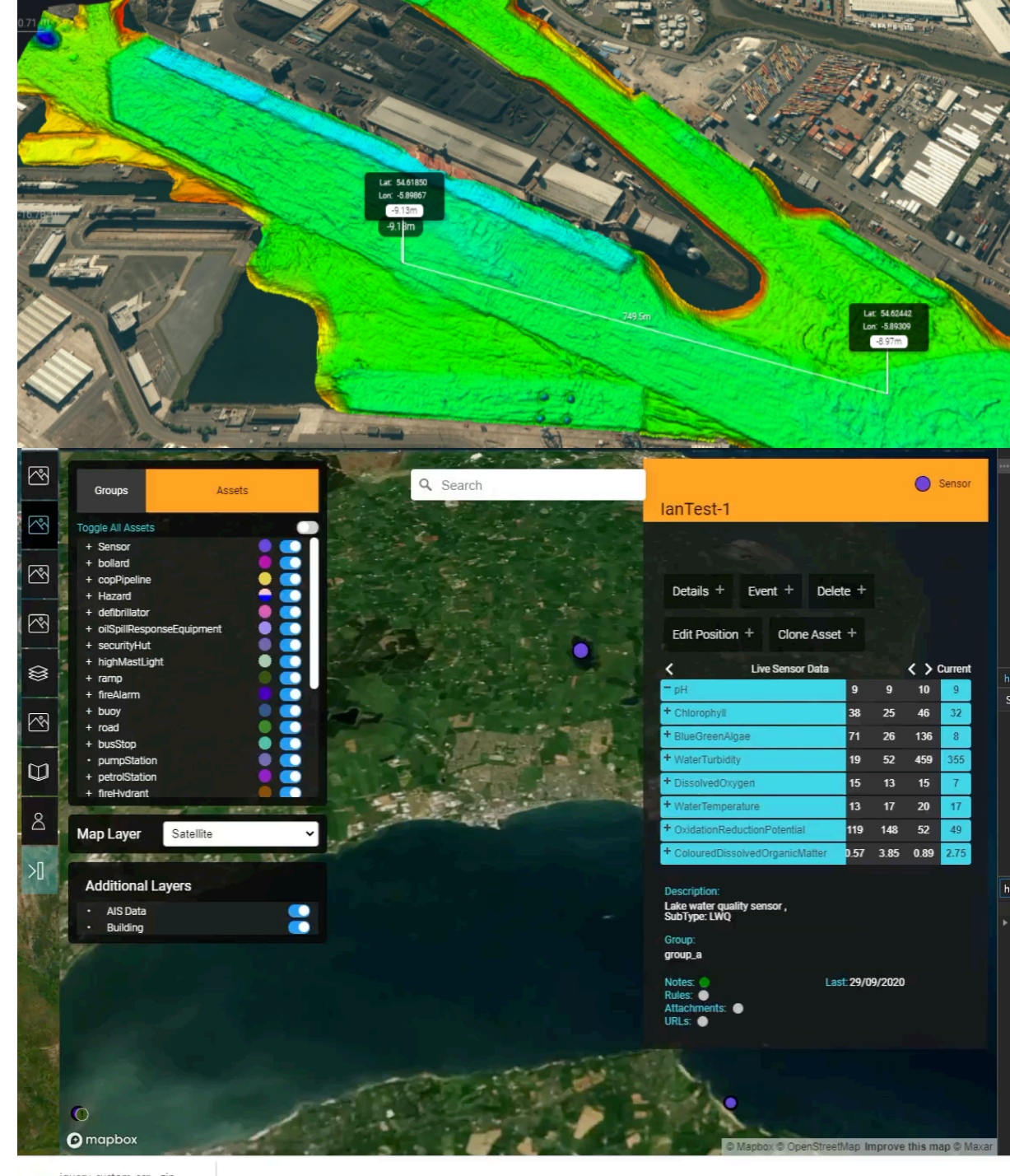
Forth-ERA

- Web-based software platform and toolkit
- live data streams and analytics from sensor networks, satellite imagery and model simulations
- via a single intuitive client interface accessible from desktop, tablet or mobile devices.

Exploit 5G cellular network technology

- high-volume data telemetry from a large number of distributed sensors, including high-definition video
- permitting live streaming of large data volumes in the field supporting innovative applications such as the use of augmented reality (AR) in the natural environment.

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Aug – Oct 2020
Proof of Concept
Loch Leven Catchment

SCALE

Drinking Water
(Reservoir)



Water Temperature

DIAGEO

Bathing Waters



Flooding and Drought
(simulation)

Funded by BT, Uni

1st Phase 2021
Water Quality / Water Quantity –
Potential use cases

Habitat Restoration / Rewilding

Dredging and Shipping

Renewable Energy

Breweries and Distilleries

Tourism and Leisure

Public Health

Ports and Harbours

Marine and Aquaculture

Funded by CRD, Funding Bids and Private Sector

2021 onwards
The net zero potential -
Future Phases

Carbon Mapping

Peatland Restoration

Biodiversity

Asset Management

Land and Forestry Management

Energy

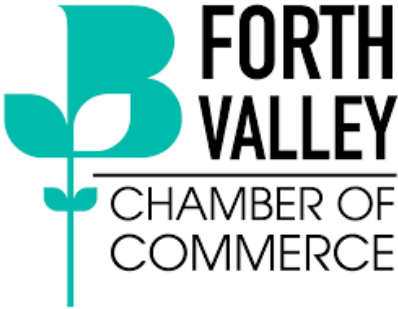
Air Quality

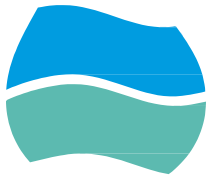
Traffic Management/Smart Transport

Funded by Private Sector, SG, Bids

Time and Investment

Collaboration





DANUBIUS-RI
making River-Sea Systems work

International Centre for Advanced Studies on River-Sea Systems

Hub (Romania)

Nodes:

Observation (UK)
Analysis (Germany)
Modelling (Italy)
Impact (Netherlands)

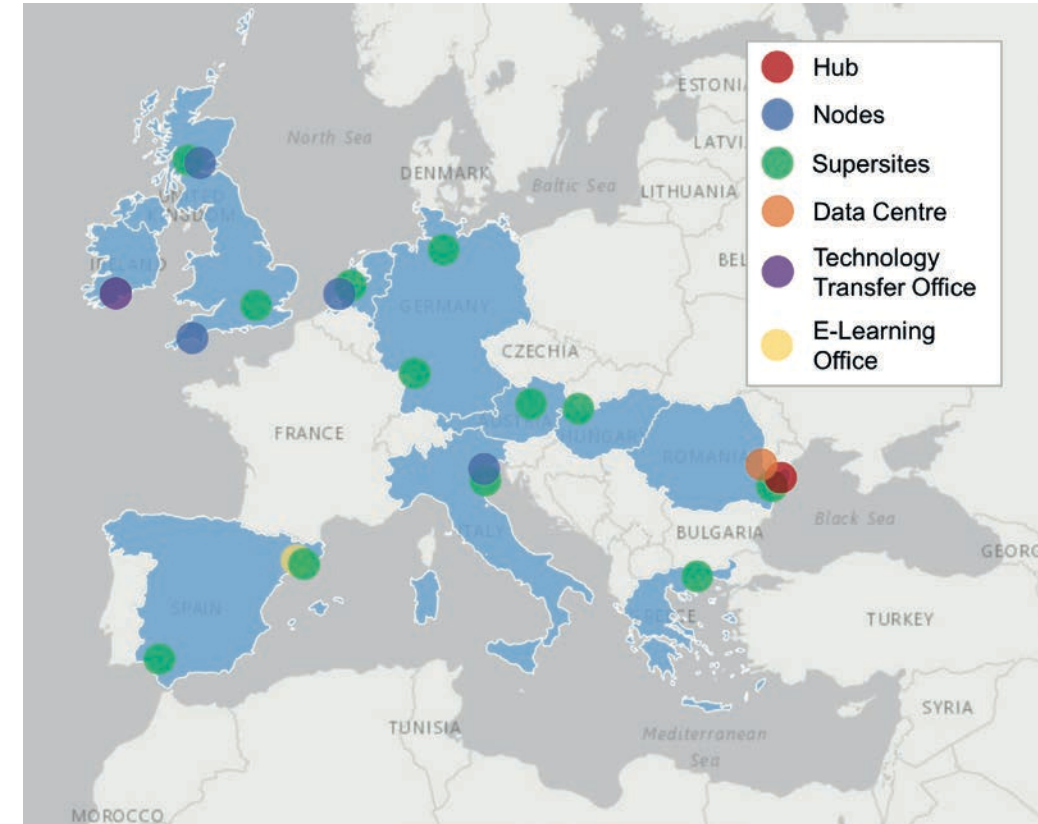
Data Centre (Romania)

Technology Transfer Office (Ireland)

E-Learning Office (Spain)

Supersites:

Elbe Estuary and North
Sea (Germany)
Rhine/Meuse Delta
(Netherlands)
Middle Rhine (Germany)
Thames Estuary (UK)
Tay Catchment (UK)
Nestos (Greece)
Danube Delta (Romania)
Ebro-Llobregat Deltaic
System (Spain)
Guadalquivir Estuary
(Spain)
Po Delta-North Adriatic
Lagoons (Italy)
Middle Danube
(Hungary)
Upper Danube (Austria)



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Thank You!

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Water
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DIAGEO



BE THE DIFFERENCE