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DATAWEEK

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DATA FJORDS: UNLOCKING AI FOR INDUSTRY & SOCIETY

5-6 May 2026 / Oslo

SUPPORTED BY

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DATA FJORDS:
UNLOCKING AI FOR
INDUSTRY & SOCIETY

5-6 May 2026 / Oslo

Interoperable Data Ecosystems and AI-Driven Digital Twins for Ocean and Inland Water Systems: The Oslo Data Fjord Case

6 May / 10:00-11:00 CEST / Room H3

Arne J. BERRE
SINTEF

Eloisa VARGIU
CETAQUA

Gerasimos ANTZOULATOS
CERTH-ITI

Claus Popp LARSEN
RISE

Guro HILDRE
Oslo Municipality

Caterina SARNO
Engineering

Franco Manuel CRIVELLO
CETAQUA

Roberto DI BERNARDO
Engineering

Dimitrios VALSAMIS
CERTH-ITI

Andrea VERDUCCIO
Engineering

Dimitris KARAMOUSLIS
CERTH-ITI

Igor Ruiz ATAKE
CMCC Foundation

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AGENDA 1/3

Breaking Silos, Building Synergies: Unlocking Water Data Interoperability through WATERVERSE, CyclOps & IDEATION

WATERVERSE and CyclOps - Gerasimos Antzoulatos, CERTH, Greece
IDEATION - Digital Twins of Inland water and EU DTO - Caterina Sarno, Roberto Di Bernando, Engineering, Italy
Inland DT to Digital Twin Ocean Demo (river and estuaries to the sea) - Franco Manuel Crivello, Eloisa Vargiu, CETAQUA, Spain;

o Contributors: Dimitrios Karamouslis, Andrea Verduccio (WATERVERSE); Dimitrios Valsamis (CyclOps); Franco Manuel Crivello, Igor Atake (IDEATION)

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AGENDA 2/3

- Oslo Fjord Region user perspective on Resilience for Water flooding and pollution (Geo4Water and SEADITO user perspective) - Guro Hildre, Oslo Region Alliance

- SEADITO and AquaINFRA - Arne J. Berre, SINTEF, Norway

- SVADA - Swedish Data Space for water and wastewater data - Claus Popp Larsen, RI.se, Sweden

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AGENDA 3/3

Panel discussion - With all presenters and audience interaction.

Moderators: Eloisa Vargiu,
Key discussion points

How can Data Spaces enable secure and trusted data sharing and interoperable AI-driven services and Digital Twins of Inland Waters and the Ocean ?
How can the projects provide synergies with each other ?
How can the projects support the water challenges of cities and regions like the Oslo fjord region ?

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BREAKING SILOS, BUILDING SYNERGIES: UNLOCKING WATER DATA INTEROPERABILITY THROUGH WATERVERSE, CYCLOPS & IDEATION

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AGENDA 2/3

- Oslo Fjord Region user perspective on Resilience for Water flooding and pollution (Geo4Water and SEADITO user perspective) - Guro Hildre, Oslo Region Alliance

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OSLO FJORD REGION USER PERSPECTIVE ON RESILIENCE FOR WATER FLOODING AND POLLUTION (GEO4WATER AND SEADITO USER PERSPECTIVE)

GURO HILDRE, OSLO REGION ALLIANCE

Geo4Water

Oslo Region Alliance: User perspective on resilience for water flooding and pollution

Oslo Data Week 06/05/2026

Guro Hildre, Oslo Region Alliance

European data space for smart communities

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Geodata Space for Smart Water Monitoring & Response from Extreme Weather

Geo4Water

Basic Pilot Info:

Involved Cities:

San Javier and Valencia (Spain)

Oslo (Norway)

Donegal (Ireland)

Duration: 16 Months (from May 2025)

Domains:

- Data-services related to weather, climate and extreme weather events to facilitate risk prevention, disaster resilience as well as climate change adaptation.
- Zero pollution actions (e.g., air, water, soil pollution or waste).
- Domains falling under the New European Bauhaus initiative (urban design, building management, public services, nature-based solutions, amongst others).

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European data space
for smart communities

Geo4Water and the Oslo Region Alliance

- Geo4Water develops data-services related to weather, climate and extreme weather events to facilitate risk prevention, disaster resilience as well as climate change adaptation.
- More intense rainfall, flooding, and landslides
- Surface water, agricultural and urban runoff are a sources of pollution in watercourses and in the Oslo Fjord
- The Oslo Region Alliance is a collaborative, political membership organization of 62 municipalities.
- One of the objectives is to make the Oslo Fjord clean, rich in biodiversity, and accessible to everyone

Foto: Oslo kommune/Lene Rustad

European data space for smart communities

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How to include the user perspective?

Geo4water services aim to provide actionable value to the stakeholders, and we needed to create a dialogue and involve the municipalities.

- Seminar in January in the City Hall of Oslo
  - ✓ 62 municipalities, river baisin districts and VEAS (inter-municipal wastewatercompany) in the Oslo Region
- Meetings with agencies and departments of Oslo Municipality
- Topics to discuss:
  - ✓ What digital tool do we use, and what do we need in the future?
  - ✓ What are the barriers in current practice? And what are the barriers to new digital tools? Etc.

Foto: Oslo Region Alliance

European data space for smart communities

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Learning points

- Collaboration between municipalities in the Oslo Region is crucial to meet common treaths and challenges due to extrem weather
- Data sharing are viewed as important, especially for safety and emergency preparedness
- Need for better decision support
- Transitioning from technical pilots to operational municipal services is a lengthy process
- Digital strategies, political decisions and fundings
- Early involvement to customize and make the system user-friendly

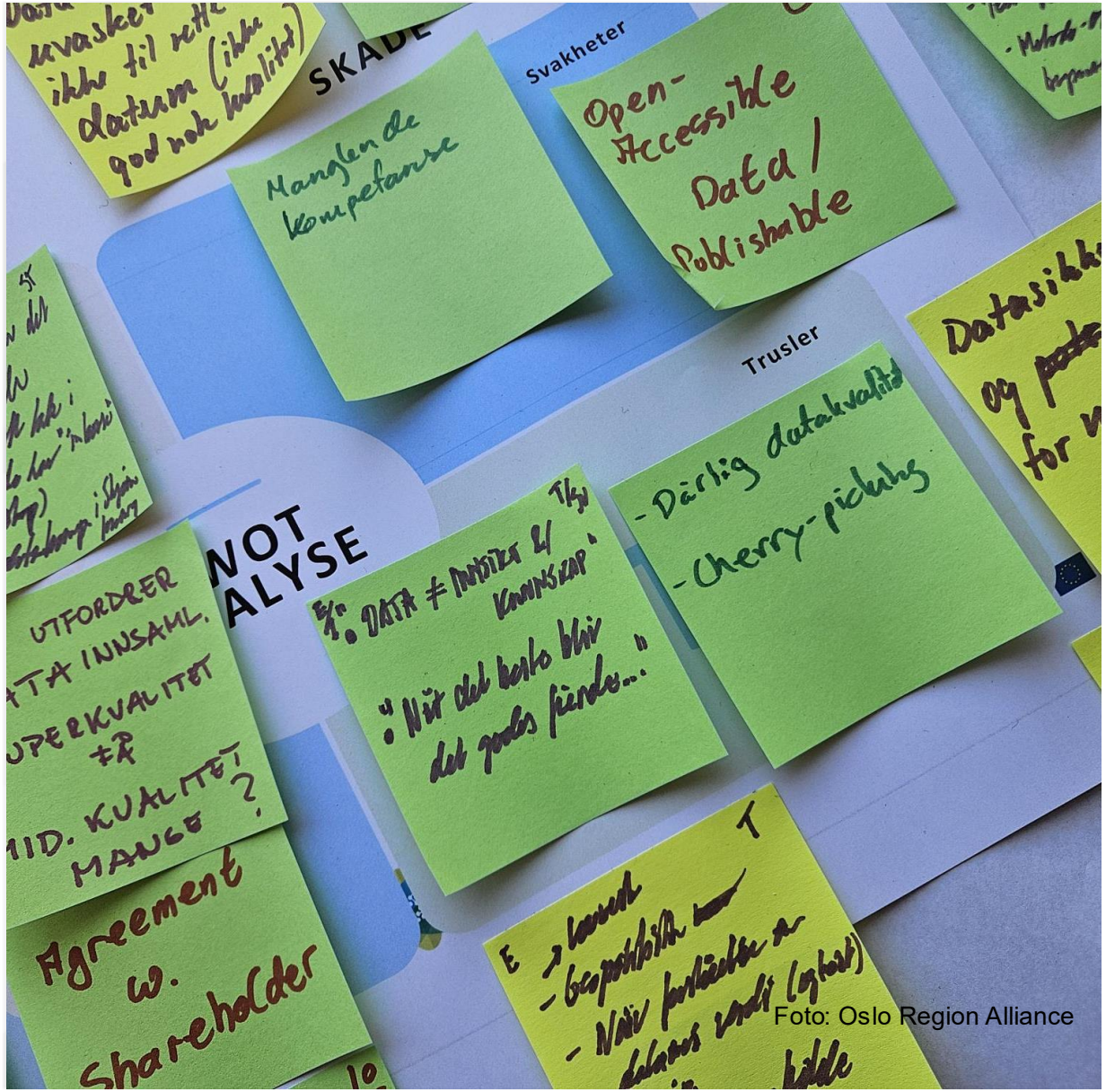


Foto: Oslo Region Alliance

European data space for smart communities

Funded by the European Union

Most important factors for using digital twins and digital tools ?

- Data Quality
- Relevant data
- Usability
- Cross-sector cooperation
- Interoperability

Hva er de viktigste faktorene for å ta i bruk digital tvilling eller andre digitale verktøy?

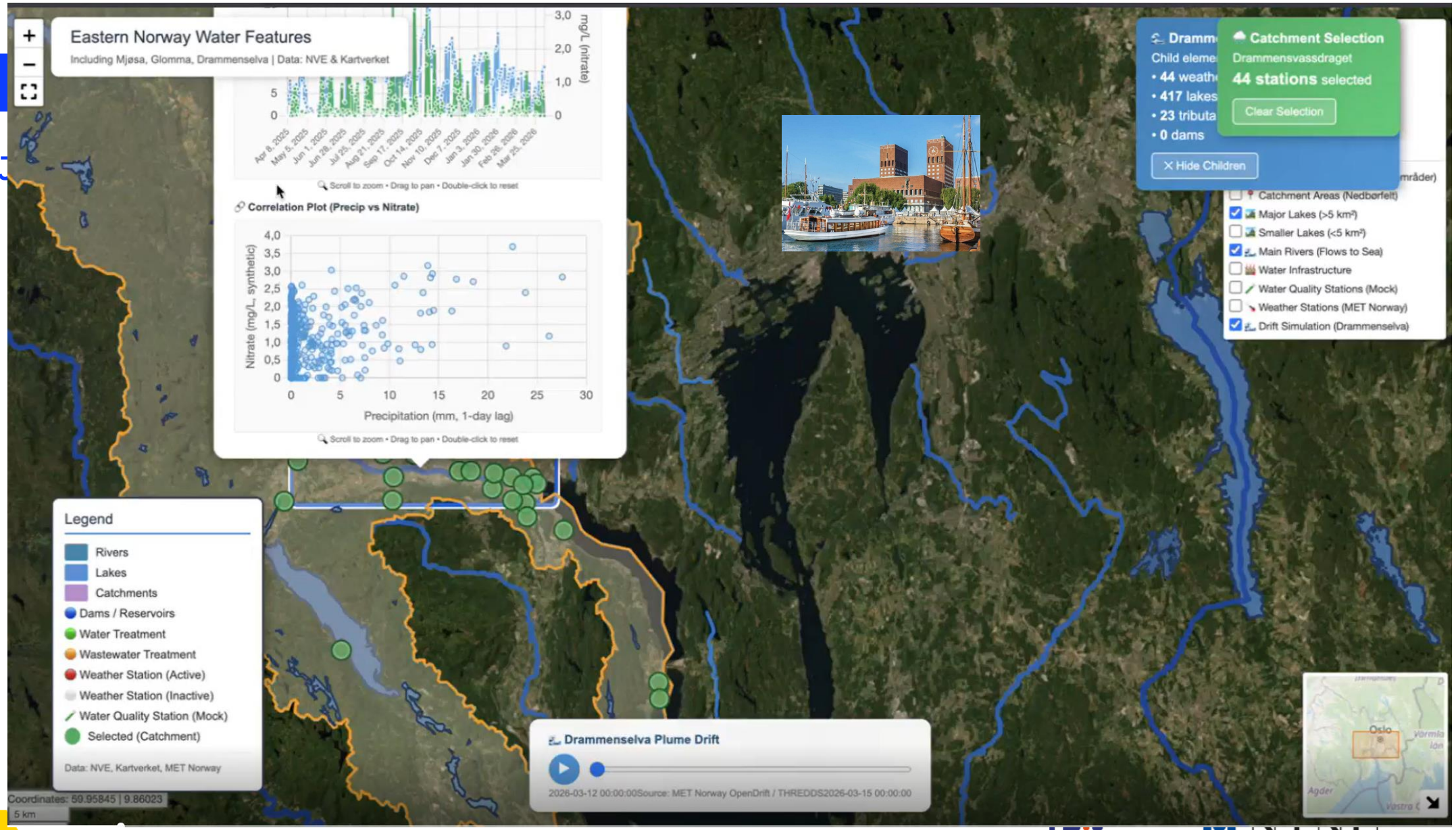
Funded by the European Union

GEO4WATER SERVICES

3. Service Documentation + specifications

- 3.1 Service S-WP3-01 (D3.1) – Monitoring City Infrastructure
- 3.2 Service S-WP3-02 (D3.2) – Impact of Extreme Weather on Water Pollution
- 3.3 Service S-WP3-03 (D3.3) – Urban Resilience Assessment
- 3.4 Service S-WP3-04 (D3.4) – Building & Urban Infrastructure Damage Assessments
- 3.5 Service S-WP3-05 (D3.5) – History of extreme weather events and their impact

Extreme weather – flooding + pollution by sewage overflow and agriculture runoff



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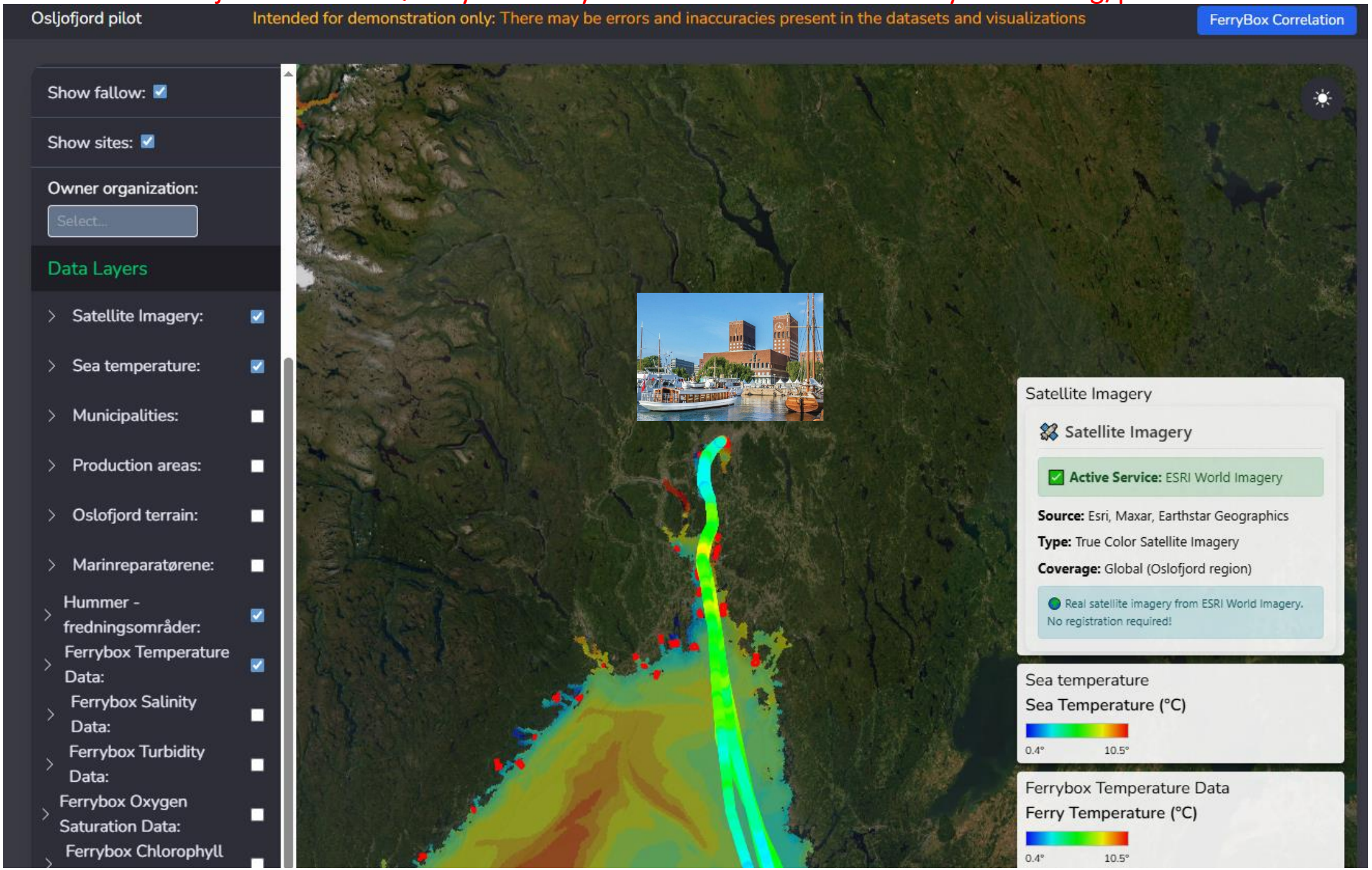
Oslo Fjord – Water Quality - Fishery ban 2026-2036 – Biodiversity monitoring/prediction Twin



The European Local Digital Twin TOOLBOX

The EU LDT Toolbox is a set of tools that enables cities to simulate and predict scenarios of local digital twins (LDT).

A Simulation Platform

to host, simulate, and manage multiple LDTs.

A Tool for Strategic Planning

a complement to existing infrastructures that enhances decision-making.

Interoperable and Standardized Guidelines

a flexible and modular toolbox, customizable to city needs.

An Open Framework

a strategic simulation environment for data-driven urban planning

- Being considered/evaluated to support LDTs for Water

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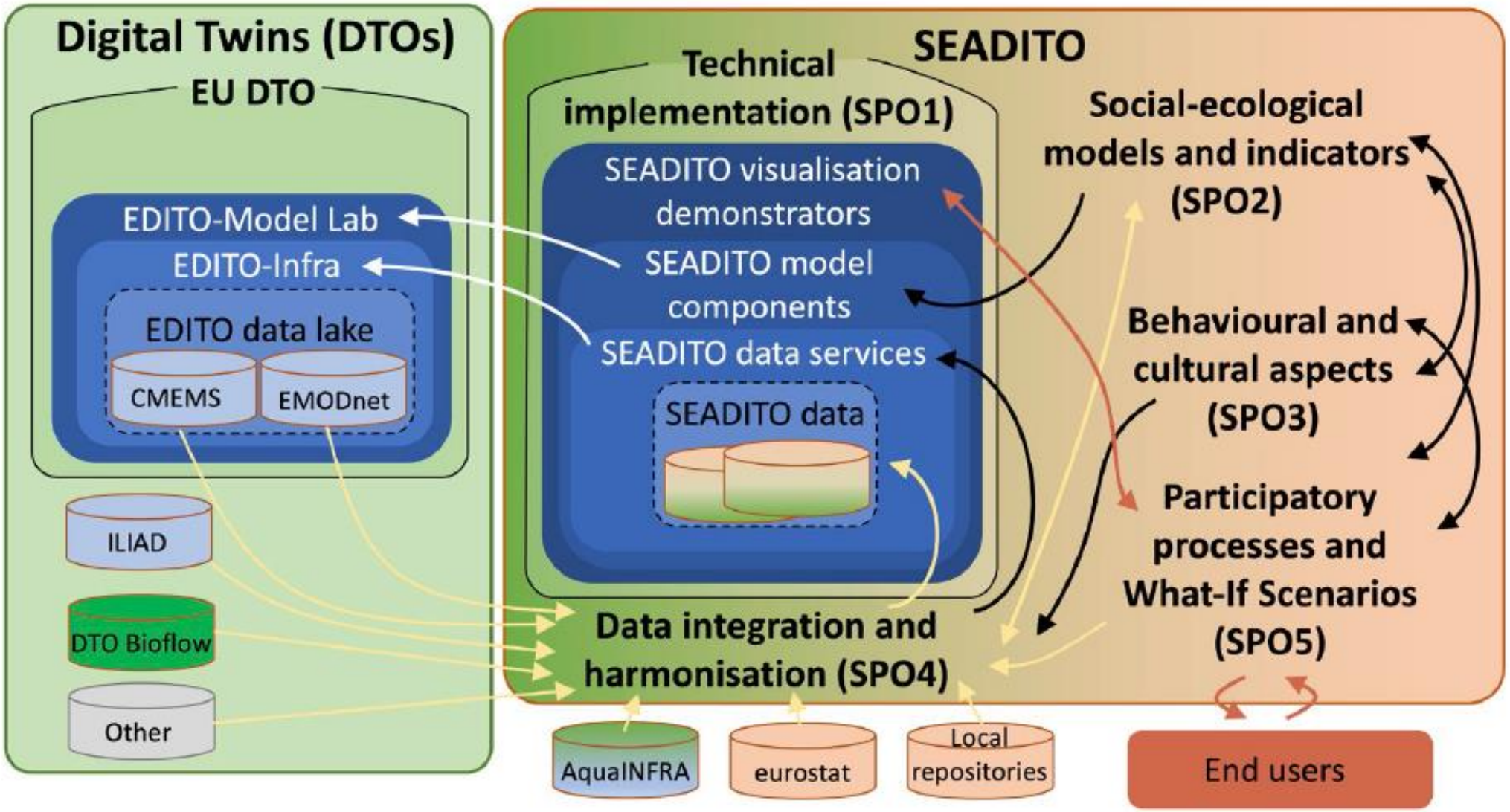
SEADITO (EU DTO/EDITO) AND AQUAINFRA (EOSC)

ARNE J. BERRE, SINTEF, NORWAY

Socio-Ecological Models and data for Digital Twins Ocean (4 clustered EU projects)



SEADITO

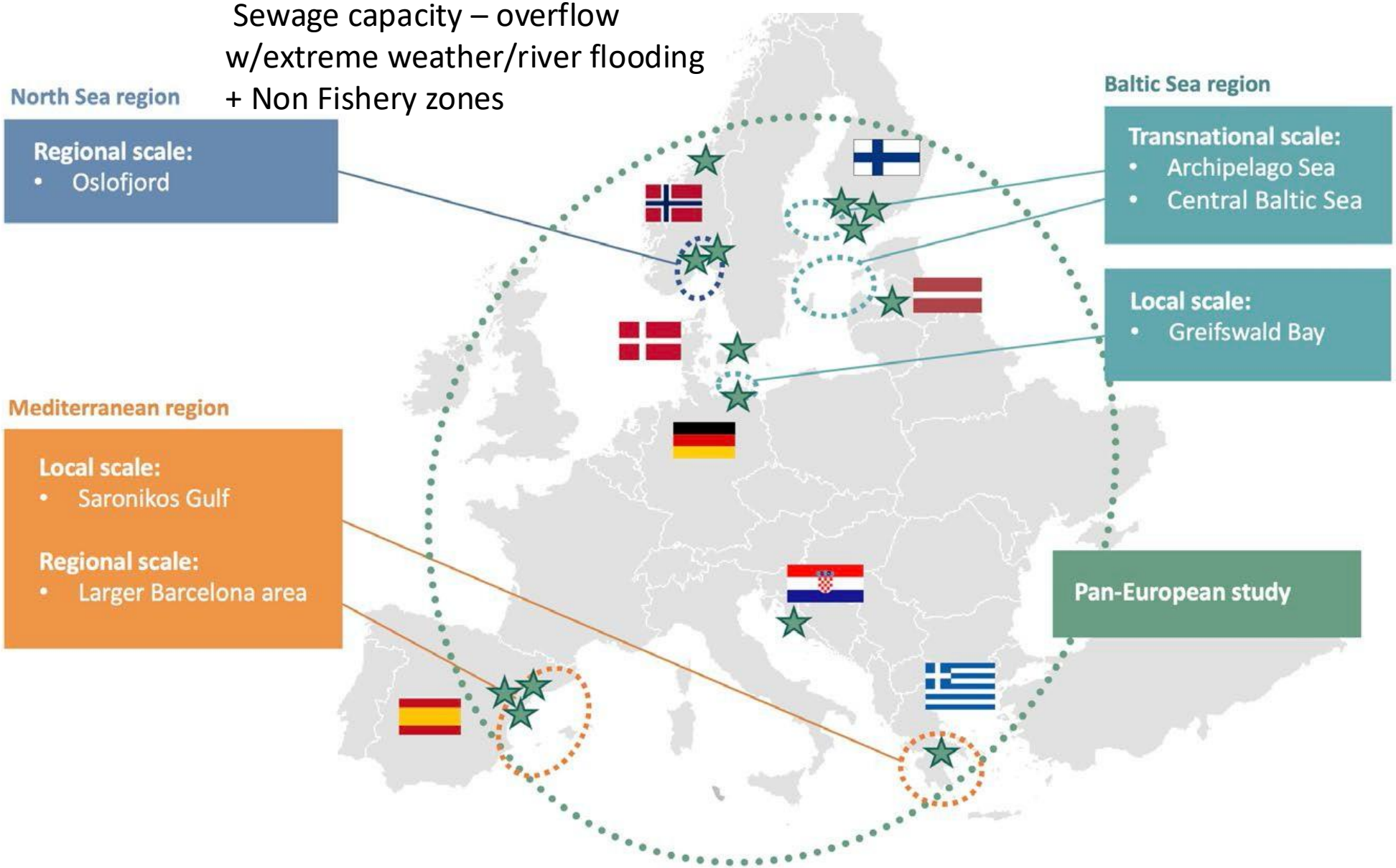
SURIMI

EcoTwin

SEA DOTS

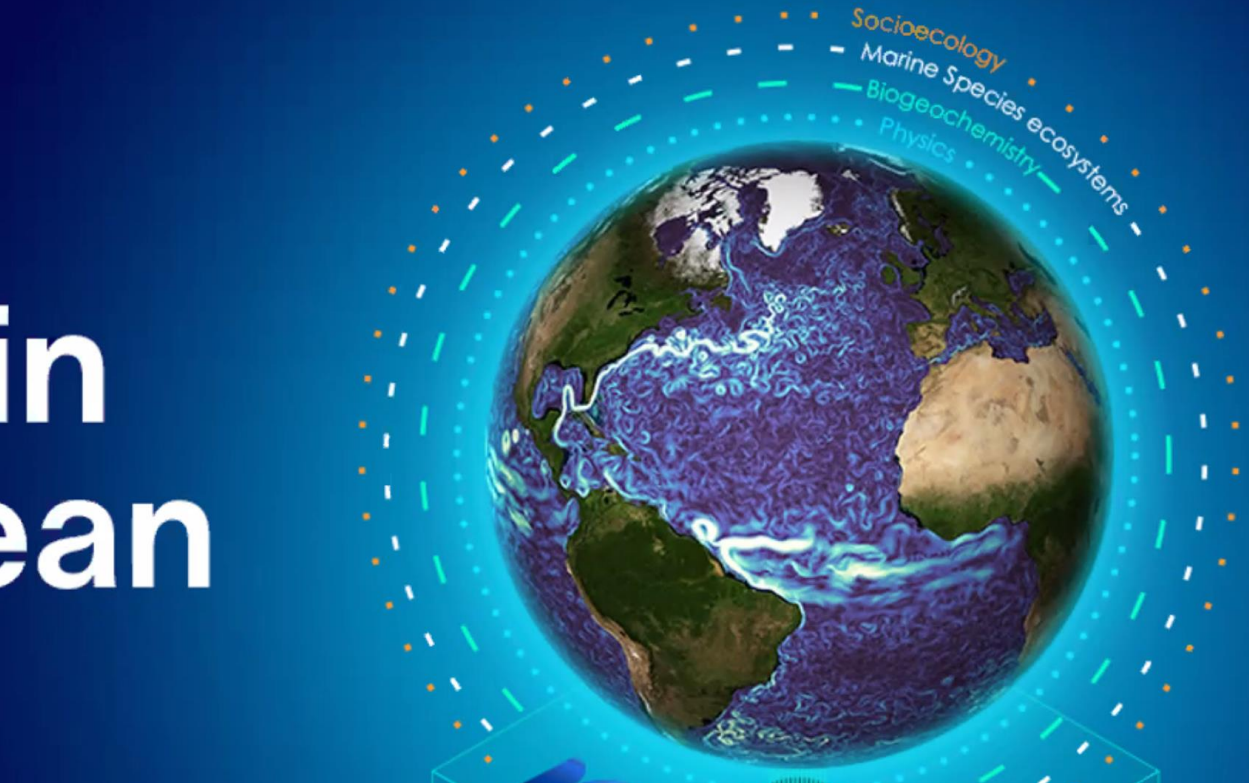
SOCIAL-ECOLOGICAL OCEAN MANAGEMENT APPLICATIONS WITH DIGITAL OCEAN TWINS

+Pollution by agriculture runoff
Sewage capacity – overflow
w/extreme weather/river flooding
+ Non Fishery zones



European Digital Twin of the Ocean

A leap in ocean knowledge and sustainable action



Weather
MetOcean
Physics
Biochemistry

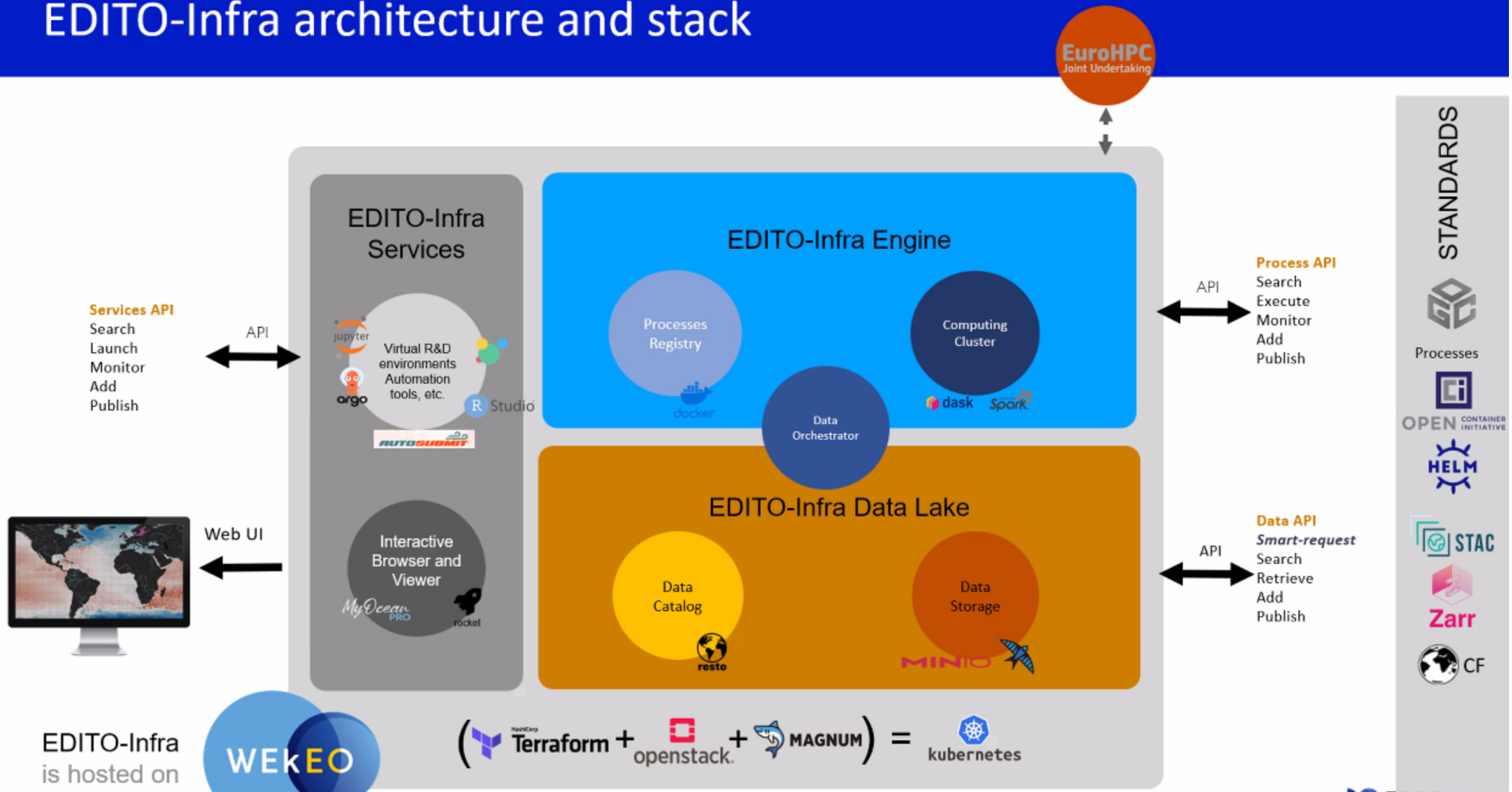
+ Biodiversity

+ Socio-Ecology

EDITOInfra
European Digital Twin Ocean

EDITOModelLab

EDITO-Infra architecture and stack



Focusing on Freshwater (Natural Water)

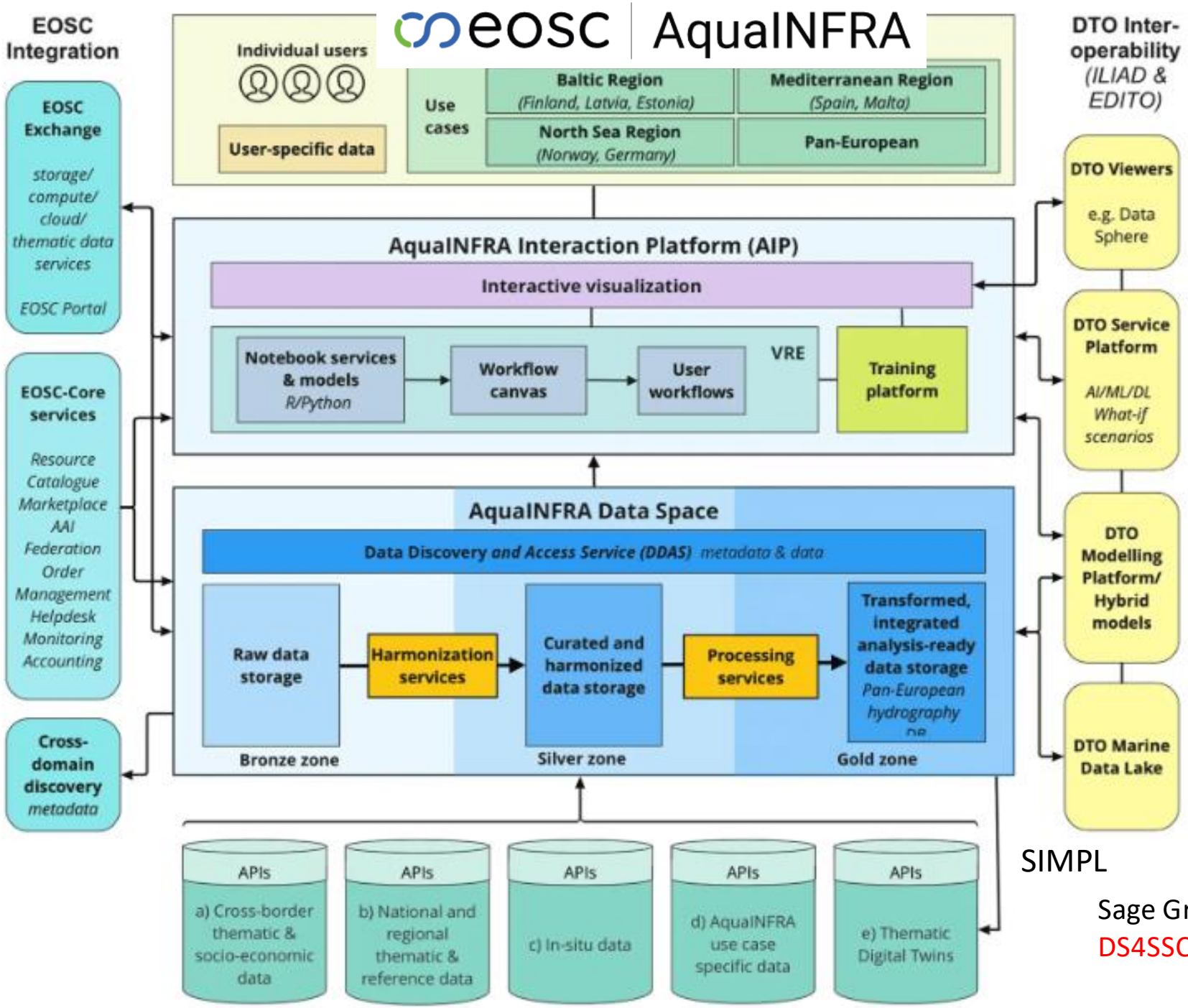
EOSC projects

InterTwin

FAIR-Impact

FAIR-EASE

Blue-Cloud 2026 (EOSC DTO)



SIMPL

EDITO
Infra, Modellab

DTO-BioFlow

BioDT

Iliad DTOs

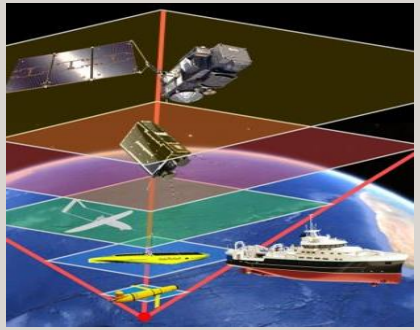
LDT Toolbox ?

Sage Green Deal Data Space
DS4SSCC ?

Digital Twin Data Acquisition/Collection → Digital Twin Representation → Digital Twin Hybrid (Cognitive) Analytics Models → Digital Twin Visualisation and Control

Iliad

Sensors,Observations & Data Spaces



Stream Handler

SIMPL, IDSA, ODIS

Copernicus "Data Space"

EMODnet, SeaDataNet

EOSC "Data Space"

EU + Green Deal Data space (SAGE)

Citizen Science, Biodiversity, Socio-Ecological Data

APIs

Digital Twin 2

Digital Twin 1

Catalogue, OIM-Semantic Interoperability

Workflow Engine (CWL)

Visualization and control

DT Services

Iliad Services

EDITO Services

APIs

APIs

DT Data Lake

Iliad Data Lakes

EDITO Data Lake

APIs

DT Engine

Iliad Engines

EDITO Engine

Algorithms, Models & Tools

AI/ML Services

DTO Demonstrators – Aquaculture, Oil Spill, Fishery, Sediments, Jelly Fish, Energy, Water quality,Biodiversity, …

AI Data Lab

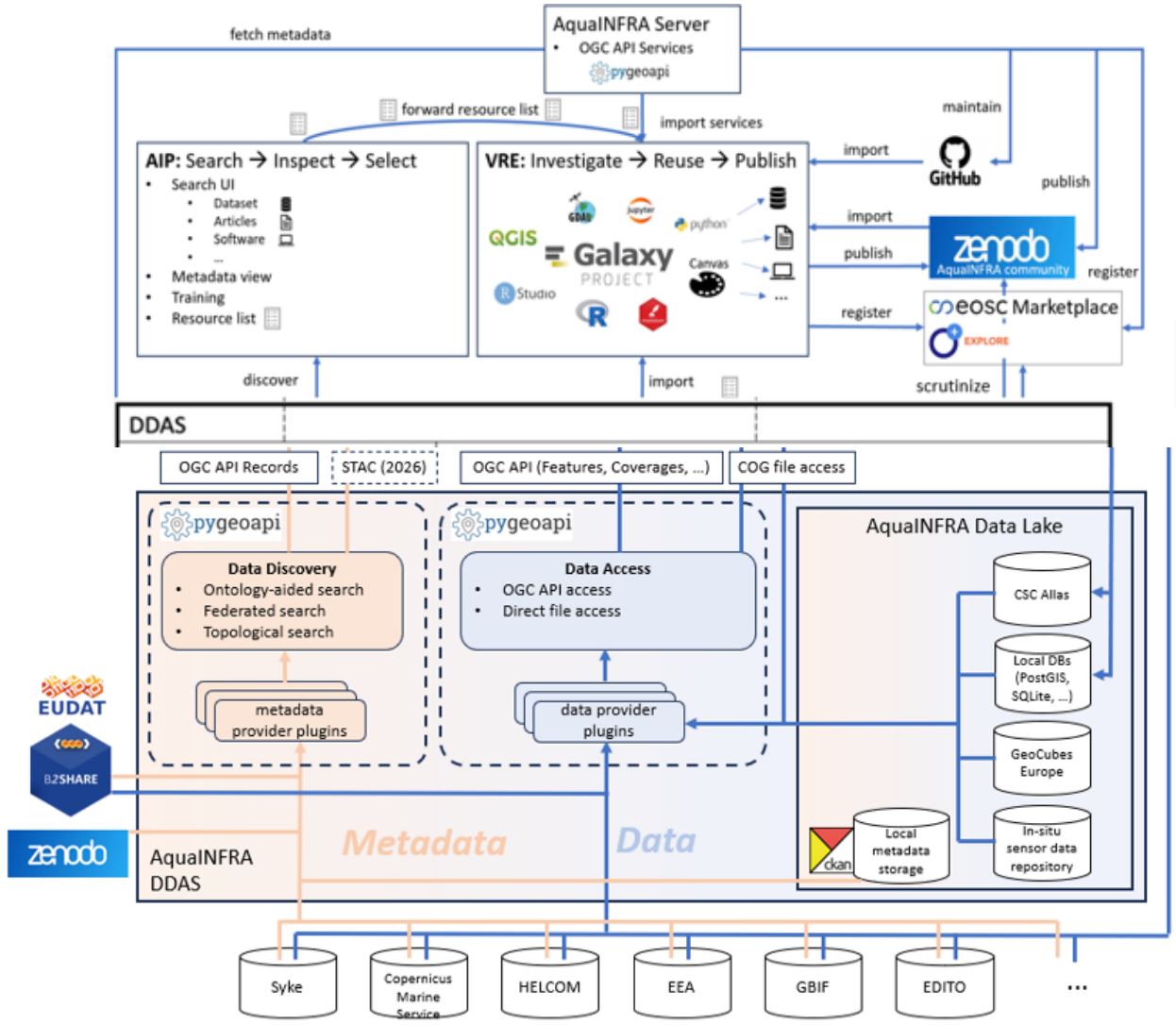
AI Factory

Sensors-Edge-Fog-Cloud-HPC

DTO Best Practices/ Methods & Standards

Iliad Marketplace Twins, data, models, resources

SINTEF



EOSC Federation

EOSC Node | Germany

The European Galaxy server

Iliad APPR Application Package Registry

EOSC Node | Data Terra Environment

EOSC Node | EUDAT Data, Computing and Digital

EOSC Node | Finland

EOSC Node | Digital Twin of the Ocean Environment

EOSC | Blue-Cloud2026

EDITOInfra European Digital Twin Ocean

Destination Earth

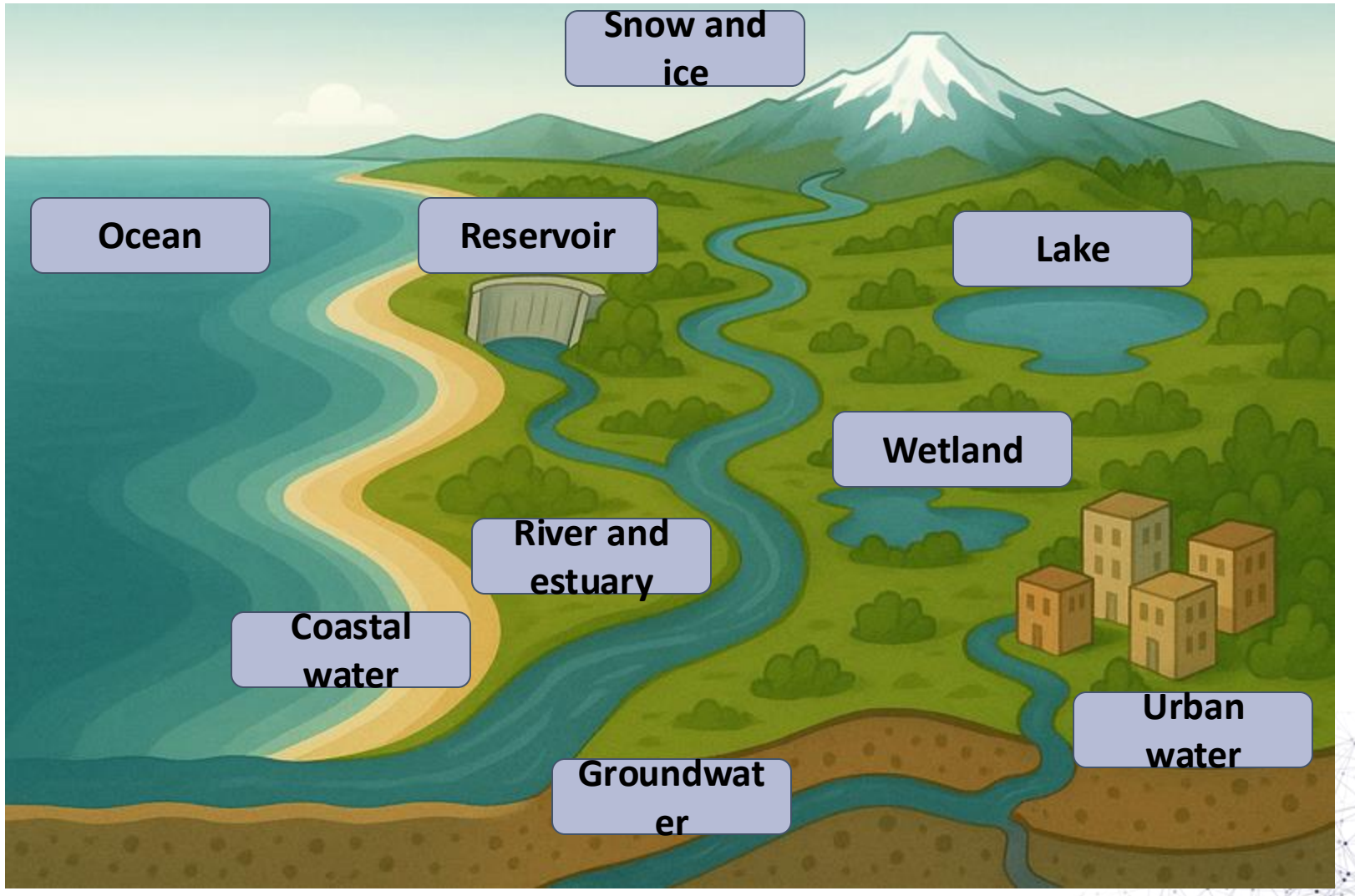
Common European data spaces

SAGE

Simpl Programme

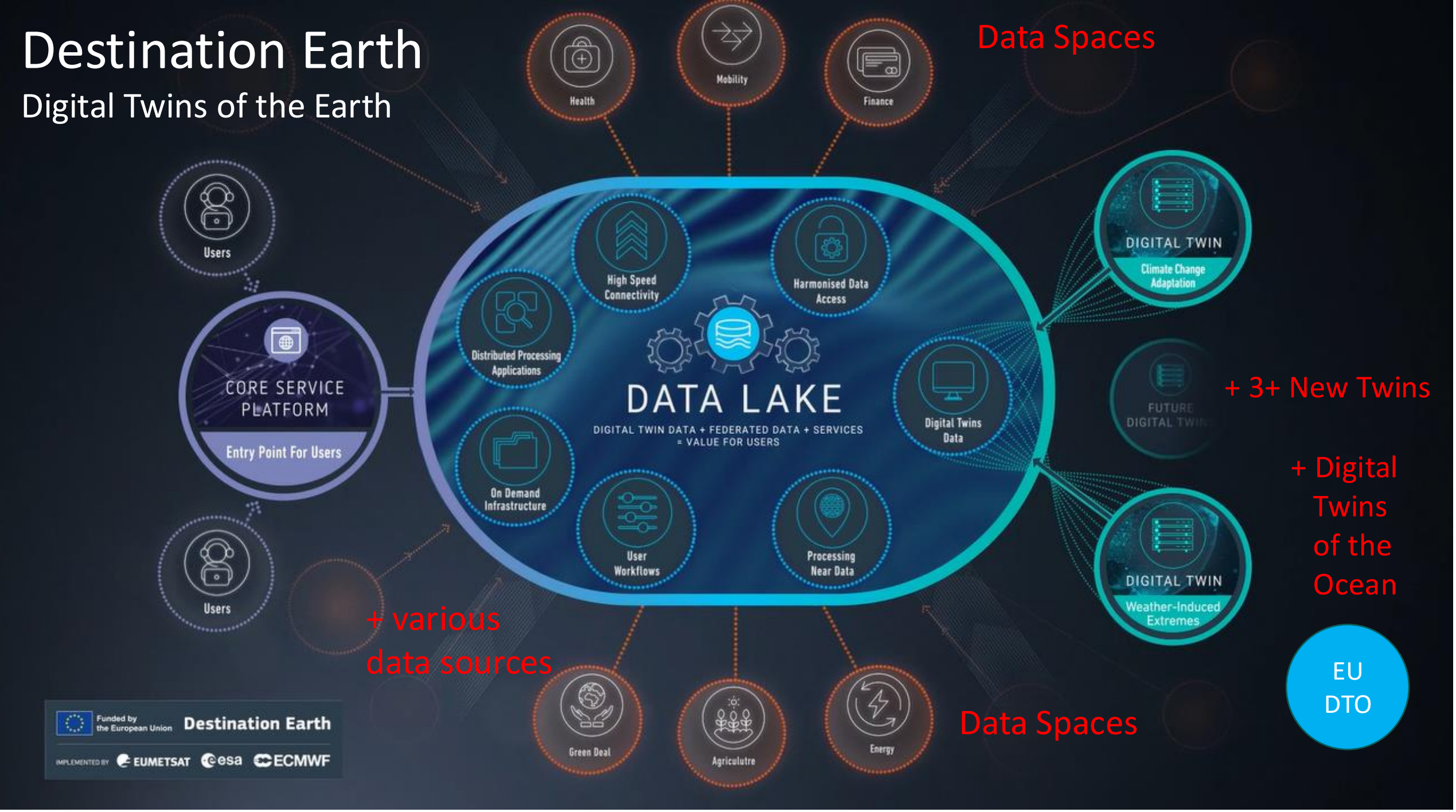
The Link Among Ocean and Inland Waters

- The European Digital Twin Ocean focuses on the **ocean**
- There is the need to consider also the **inland waters**



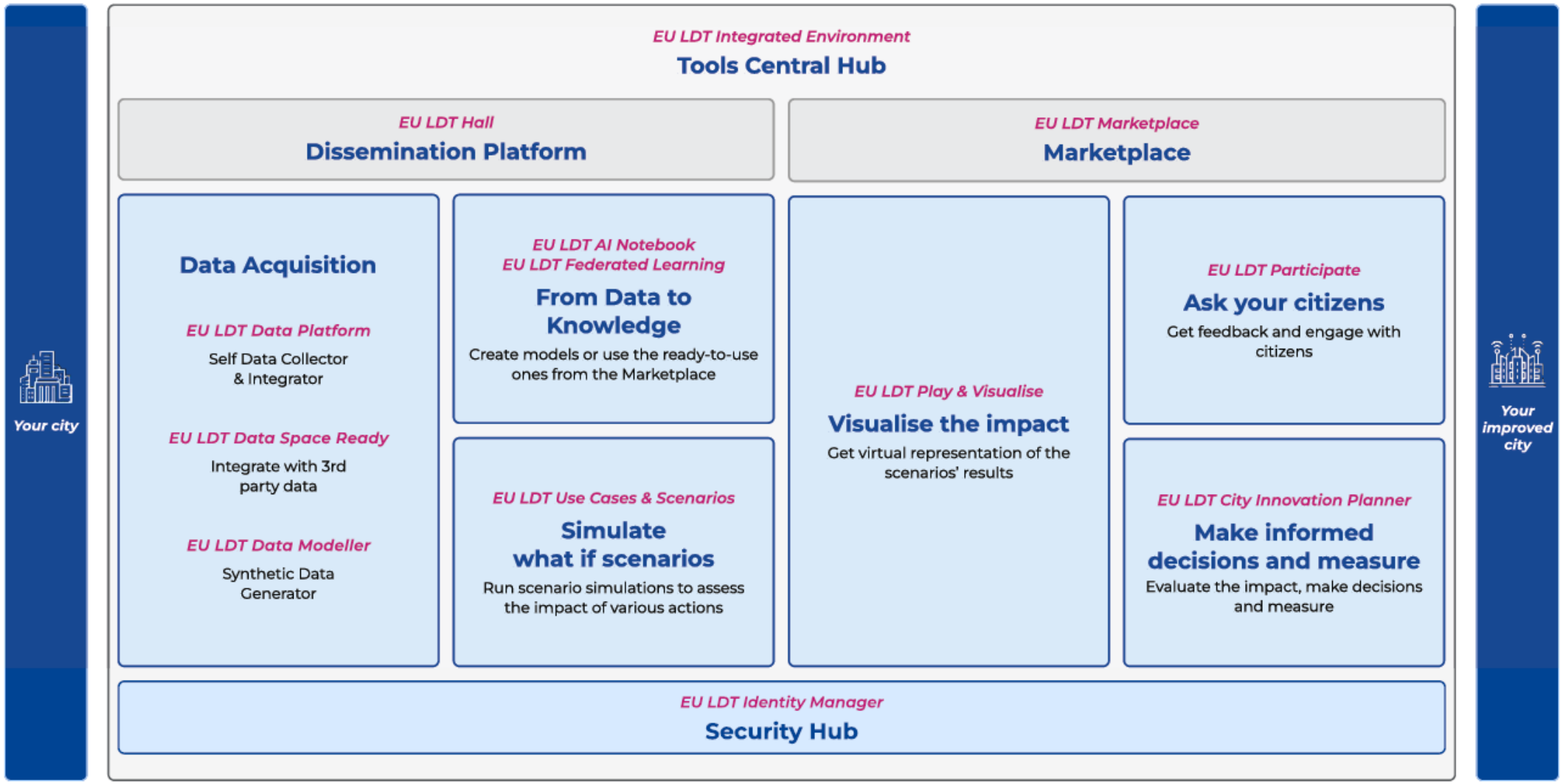
Destination Earth

Digital Twins of the Earth



The Toolbox Tool by Tool

The LDT is a cutting-edge, open-source platform designed to mirror the complexities of our cities digitally by integrating real data to simulate, visualize, and predict urban dynamics.



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SVADA – SWEDISH DATA SPACE FOR WATER AND WASTEWATER DATA

CLAUS POPP LARSEN, RI.SE, SWEDEN

SVADA – The Swedish Water Data Lab

for Smart Water Management

Data Week, May 6th 2026, Oslo

Claus Popp Larsen, RISE

SVADA – basic needs and pain points

- The **central data sharing functions** in the municipality envision that they need to work in a different way in order to support their departments and municipal companies around data sharing
- The **municipal water utility** cannot access and reuse and share processed data from their provider – they only get access to visualisations (silo solution)
- The **provider** is active in many municipalities and experiences different technical and legal environments – would like unified environment and data in same format to scale solution

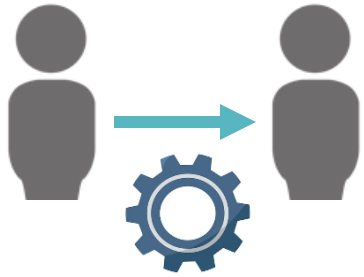
City of Gothenburg, Intraservice

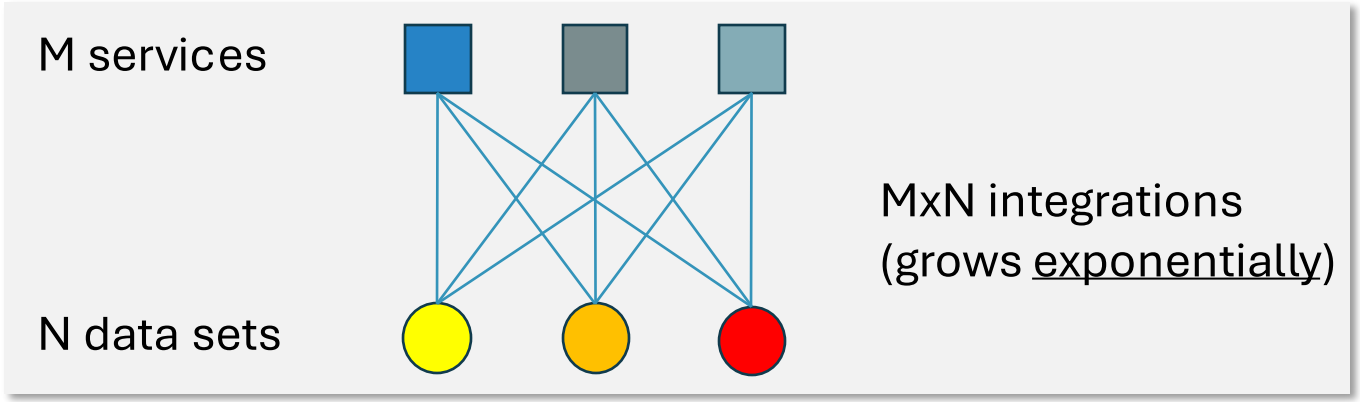
Gothenburg water utility

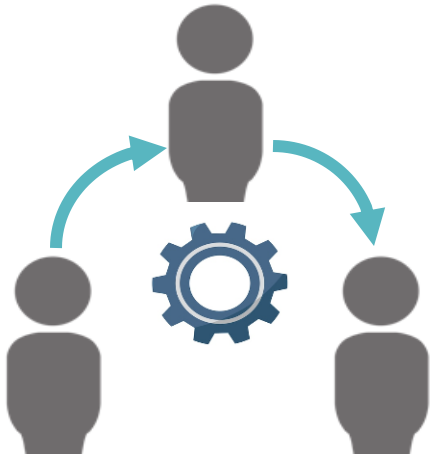
DHI

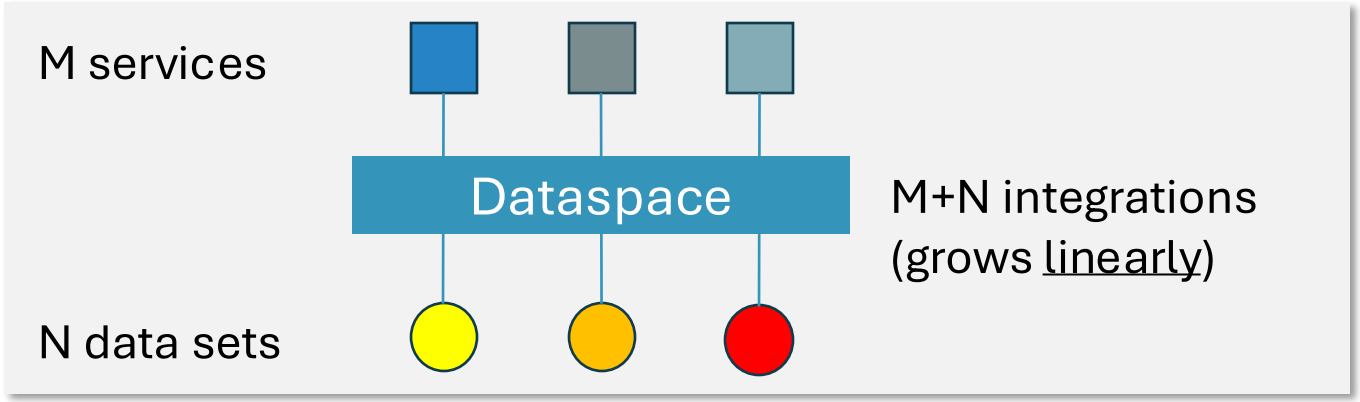
SVADA
SVENSKA VATTENDATALABBET

When integration becomes a limitation









Each integration includes agreements and identity management

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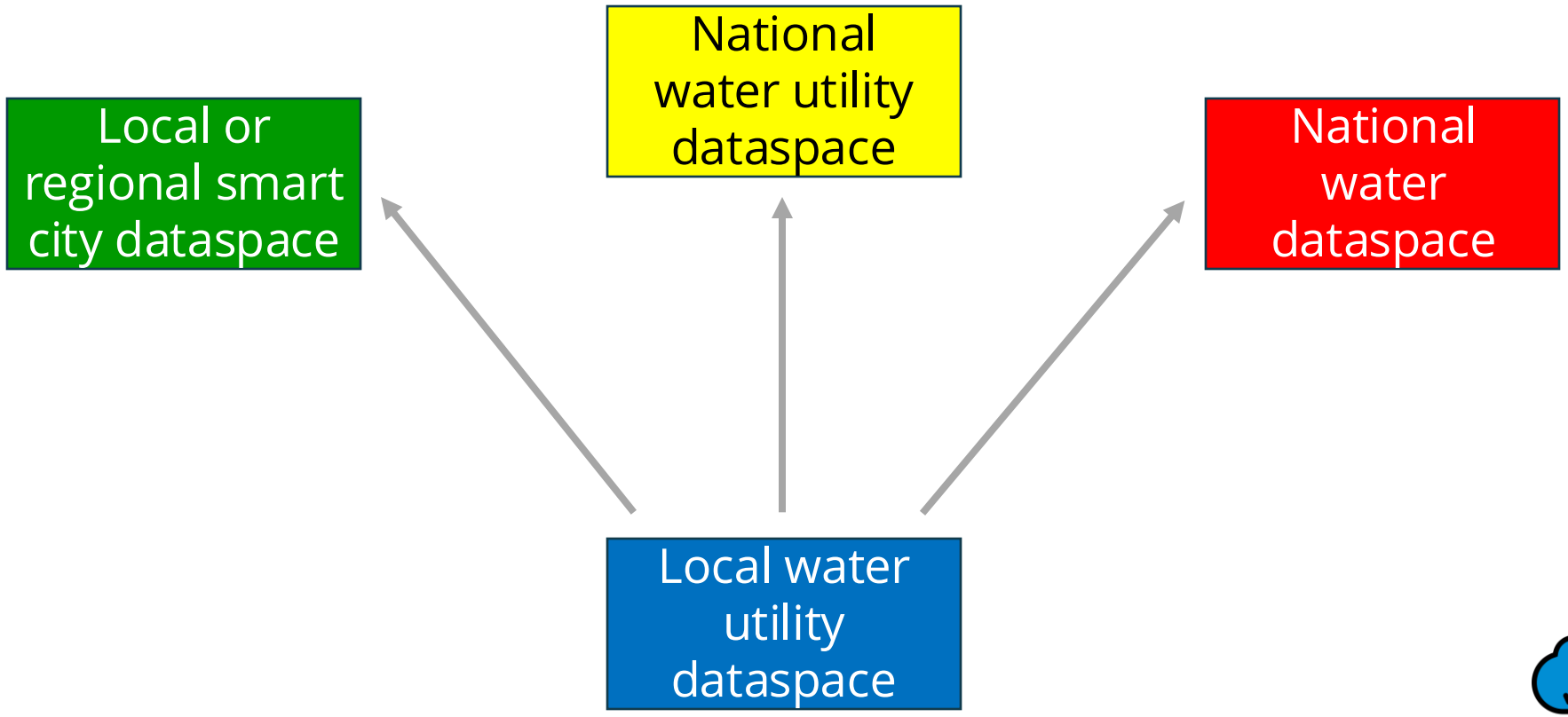
Next steps - apart from more usecases

3-6 years:



Now:

Showstoppers for seamless data

- Lack of accessible data due to lack of data management skills — All data holders
- Lack of federated identity & access management — Central functions
- Lack of (scalable) contracts — Central functions
- Limited interoperability — Central functions
- Lack of proper steering mechanisms locally *and* nationally — Political decisions

SVADA
SVENSKA VATTENDATALABBET

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PANEL DISCUSSION

With all presenters and audience interaction.

Moderators: Eloisa Vargiu, Arne J. Berre

Key discussion points

How can Data Spaces enable secure and trusted data sharing and interoperable AI-driven services and Digital Twins of Inland Waters and the Ocean ?
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Thank you !