E-Science European Infrastructure for Biodiversity and Ecosystem Research

"Reinforcing synergies between LifeWatch ERIC and the European GBIF Nodes "

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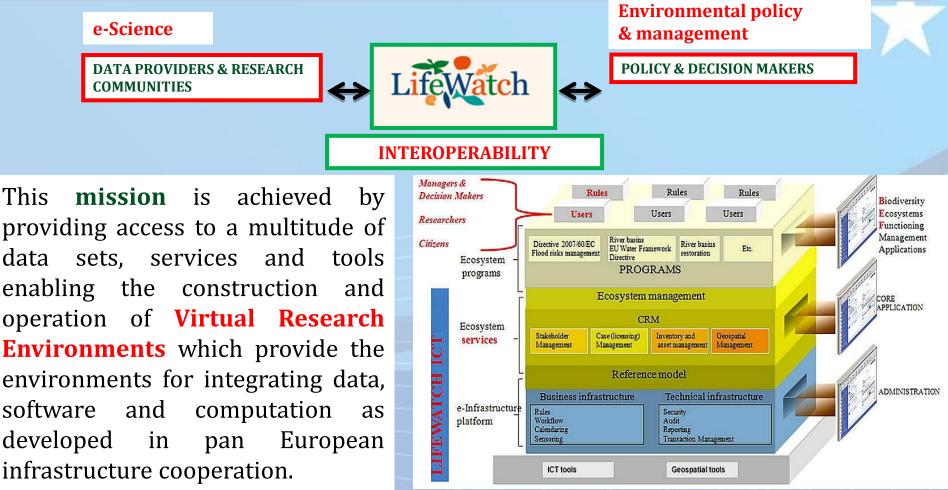
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PART I

An overall vision of LifeWatch ERIC distributed e-Infrastructure

LifeWatch ERIC is a European e-Science distributed Infrastructure focused on how to measure the impact of **Climate Change** issues on Earth **Biodiversity and Ecosystems.**

Expected IMPACT: LifeWatch ERIC as a structuring tool for the **European Research Area**, also supporting **policy decision making** addressing Societal Challenges which demand scientific knowledge in a Climate Change context, including **Citizen Science activities.**

e-Science

Environmental policy & management

DATA PROVIDERS & RESEARCH COMMUNITIES

POLICY & DECISION MAKERS

INTEROPERABILITY

This **mission** is achieved by providing access to a multitude of data sets, services and tools enabling the construction and operation of **Virtual Research Environments** which provide the environments for integrating data, software and computation as developed in pan European infrastructure cooperation.
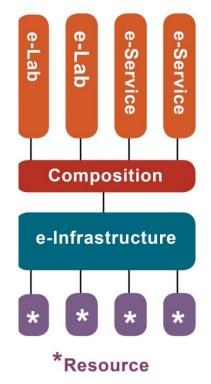
AMONG OTHERS, 2 CONCRETE CHALLENGES:

✓**SCALE OF IMPLEMENTATION:** requires the connection with users and data generators in the large Networks of Excellence
✓**HETEROGENEITY OF COMMUNITIE'S REQUIREMENTS:** complexity of Interconnected nature of biodiversity ideas, outputs and repositories

LifeWatch ICT e-Infra & BIG DATA architecture in place

- **e-Services** for scientific cooperation

- Select the data, software and computing power for your project

- Integrate resources

- Linking to resources (databases, sensors, software, computing power)

ESFRI Projects & Landmarks 2016 recently published by European Commission.

LifeWatch ERIC considered as an ENVIRONMENT strategic one.

www.lifewatch.eu

■ Related Projects ■ Site Map

Congratulations to @ll LifeWatch Community !

Since March 2017 LifeWatch is considered (the 14th) ERIC. Its 1st and 2nd General Assemblies took place on May 8th-9th , 2017 and January 10th, 2018 in Seville, respectively. In the same city, on May 23rd , DG R&I Robert Jan-Smits awarded the LifeWatch ERIC "Plate" in a ceremony also held in Seville (Spain).

LifeWatch is cooperating with "**distributed**" Centres in cooperating countries **(including their REGIONS)**. These Centres are developing and operating virtual and physical media and other components.

Distributed LifeWatch Centre

LifeWatch Common Infrastructure

Distributed LifeWatch Centre

TYPE: distributed
COORDINATING COUNTRY: ES
MEMBER COUNTRIES: BE, EL, ES, IT, NL, PT, RO

* **March 7th, 2016 update**

PARTICIPATING COUNTRIES: FI, FR, HU, NO, SE, SI, SK

TIMELINE
- ESFRI Roadmap entry: 2006
- Preparation phase: 2008–2011
- Construction phase: 2011–2016
- Operation start: 2016

ESTIMATED COSTS
- Capital value: 66 M€
- Operation: 10 M€/year

HEADQUARTERS
Statutory Seat: Seville (ES)
Common facilities: ES-IT-NL

WEBSITE
http://www.lifewatch.eu
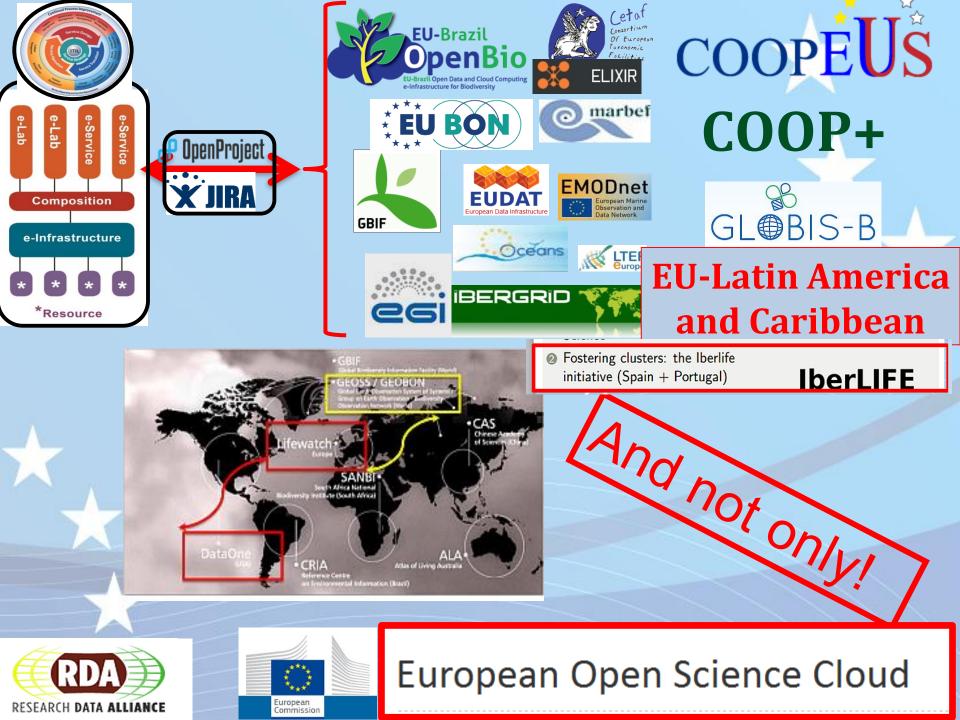
Virtual Labs
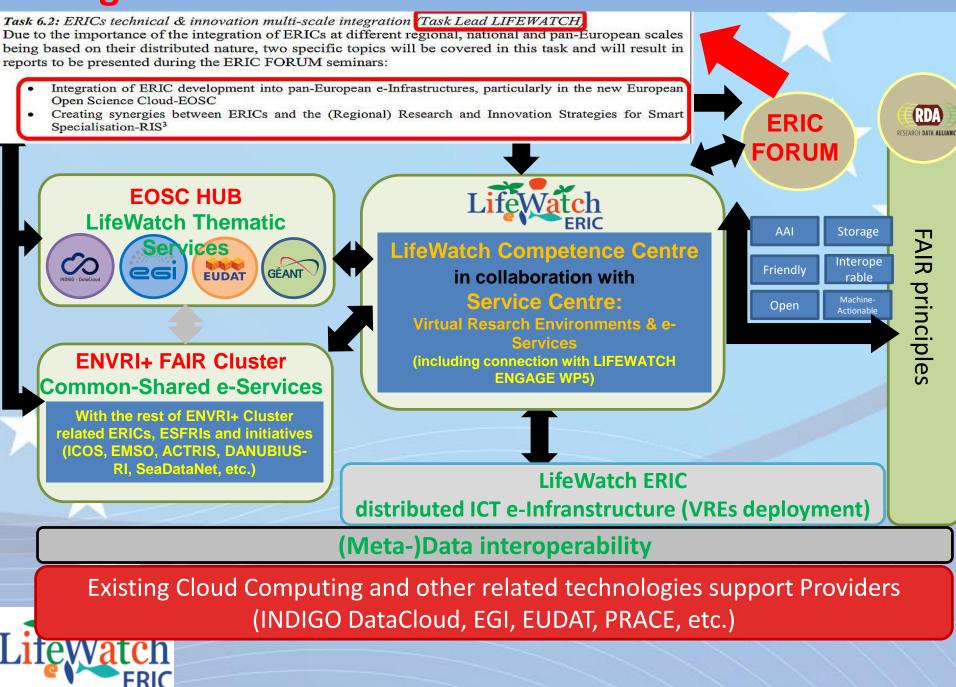**(Amsterdam, The Netherlands)**

Service Centre
(Lecce-Regione Puglia, Italy)

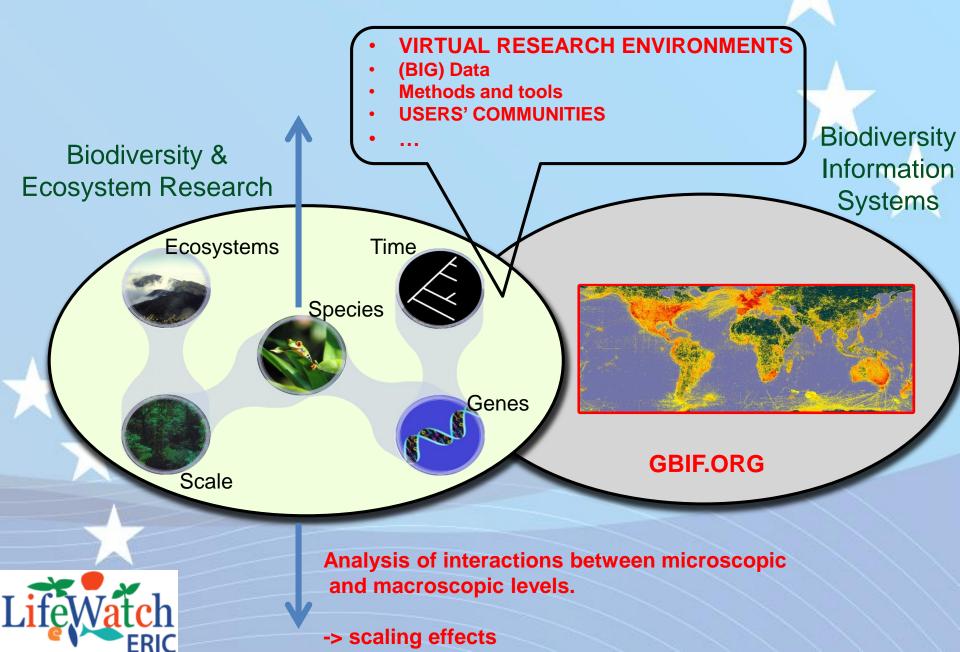*Headquaters, Statutory Seat & ICT e-Infrastructure Offices*
(Seville, Spain)

All together…

Task 6.2: *ERICs technical & innovation multi-scale integration* Task Lead LIFEWATCH.
Due to the importance of the integration of ERICs at different regional, national and pan-European scales being based on their distributed nature, two specific topics will be covered in this task and will result in reports to be presented during the ERIC FORUM seminars:

- Integration of ERIC development into pan-European e-Infrastructures, particularly in the new European Open Science Cloud-EOSC
- Creating synergies between ERICs and the (Regional) Research and Innovation Strategies for Smart Specialisation-RIS[3]

ERIC FORUM

RDA RESEARCH DATA ALLIANCE

EOSC HUB
LifeWatch Thematic Services

INDIGO - DataCloud · egi · EUDAT · GÉANT

LifeWatch ERIC

LifeWatch Competence Centre
in collaboration with
Service Centre:
Virtual Resarch Environments & e-Services
(including connection with LIFEWATCH ENGAGE WP5)

AAI	Storage
Friendly	Interoperable
Open	Machine-Actionable

FAIR principles

ENVRI+ FAIR Cluster
Common-Shared e-Services

With the rest of ENVRI+ Cluster related ERICs, ESFRIs and initiatives (ICOS, EMSO, ACTRIS, DANUBIUS-RI, SeaDataNet, etc.)

LifeWatch ERIC
distributed ICT e-Infranstructure (VREs deployment)

(Meta-)Data interoperability

Existing Cloud Computing and other related technologies support Providers (INDIGO DataCloud, EGI, EUDAT, PRACE, etc.)

LifeWatch ERIC

PART II

Synergies between LifeWatch ERIC and GBIF

CONNECTIONS

Biodiversity & Ecosystem Research

- **VIRTUAL RESEARCH ENVIRONMENTS**
- **(BIG) Data**
- **Methods and tools**
- **USERS' COMMUNITIES**
- **…**

Biodiversity Information Systems

Ecosystems

Time

Species

Genes

Scale

GBIF.ORG

Analysis of interactions between microscopic and macroscopic levels.

-> scaling effects

LifeWatch ERIC

EXPRESSED THROUGH EXTERNAL LIAISONS:

Existing Memorandum-of-Understanding

PART III
Some conclusions

- ✓ **LifeWatch ERIC is a relevant case of ENVironmental RI from the pan-European perspective:**

    As it is a distributed e-Infrastructure, some regions are aware of its potential for:
    - Capitalizing already existing investments
    - Improving ICT developments
    - Promoting a positive impact in the regional industrial sectors

- ✓ **The existing knowledge and services related with biodiversity and environmental information should be better connected. This a real challenge for Environmental RIs, which also includes specific topics such as:**
    - Shared ICT developments
    - Intellectual Property Rights (IPR)
    - Open Access (RDA), and
    - **European Open Science Cloud (EOSC) connections.**

- ✓ **LifeWatch ERIC and the European GBIF Nodes should provide a common ground to reinforce the development of shared distributed e-Infrastructures.**
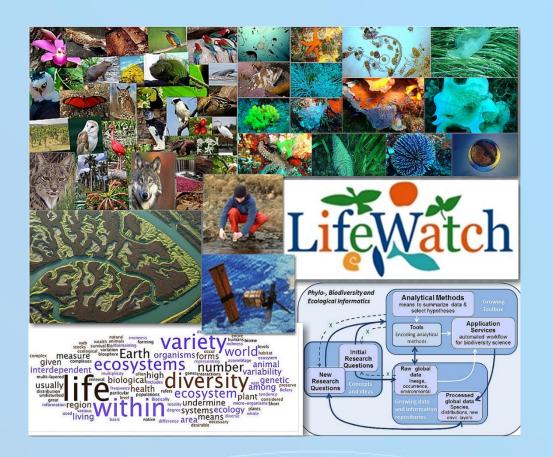
...BUT:

✓The implementation of distributed Environmental RIs would be at serious risk if regional Smart Specialization Strategies policies (RIS3, i.e., the proper use of **European Structural Investment Funds**) are not taken into account during their construction phase. Their consideration would prevent H2020 funding instruments from being simple extensions of Preparatory Phase projects, enabling "realistic" constructions and granting the sustainable operation of new-born facilities.

✓To that purpose, LifeWatch ERIC has developed a "realistic" **Construction and associated Business Plan** based on "real" needs and users' requirements, including a "feasible" **Governance Scheme and Funding Strategy** in order to guarantee its **Sustainability**.

✓Therefore, it is **compulsory** the reinforcement of existing synergies between LifeWatch ERIC and the **GBIF Nodes** based on a "realistic" approach of Biodiversity and Ecosystem Research Communities in order to guarantee further & proper integration of their developments (mainly e-Services) in the **European Open Science Cloud-EOSC**.

Thank you very much for your attention!

http://www.lifewatch.eu

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