LifeWatch

E-Science European Infrastructure for Biodiversity and Ecosystem Research

*Thinking globally, acting locally:*

# *"IBERLIFE initiative for the synergetic development of LifeWatch ERIC between Portugal & Spain"*


**Ph.D. Eng. Juan Miguel González-Aranda**

*Head of Unit Nanomaterials & e-Science, Deputy Directorate-General for Science & Innovation Internationalization.*
*Ministry of Economy, Industry and Competitiveness of Spain.*
*LifeWatch ERIC Chief Technology Officer-CTO*


MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD

*Portuguese – Spanish Workshop on*
*Research and Education Networks and E-Science*
*May 7th-2018, Salamanca (Spain)*

LifeWatch ERIC

# CONTENTS

**PART I.** **Introductory Context: An overall vision of LifeWatch ERIC distributed e-Infrastructure**

- *In relation to a) Introduce the institution you represent, and explain its relation with e-Science.*

**PART II.** **Facts rather than statements: LifeWatch ERIC construction PT-ES shared vision, approach and instruments**

- *In relation to b) Explain your view on the current status of e-science in its country and at EU level, including proposals for the future and c) Share any specific past or ongoing experience of cooperation Spain-Portugal, if any, and point future opportunities for further cooperation between the two countries.*

**PART III.** **Some conclusions**

# PART I

# Introductory Context:

## Introductory Context: 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 **Global Climate Change** issues on Earth **Biodiversity and Ecosystem Research.**

**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 Global Climate Change context, including Citizen Science activities.**

**e-Science**

**DATA PROVIDERS & RESEARCH COMMUNITIES**

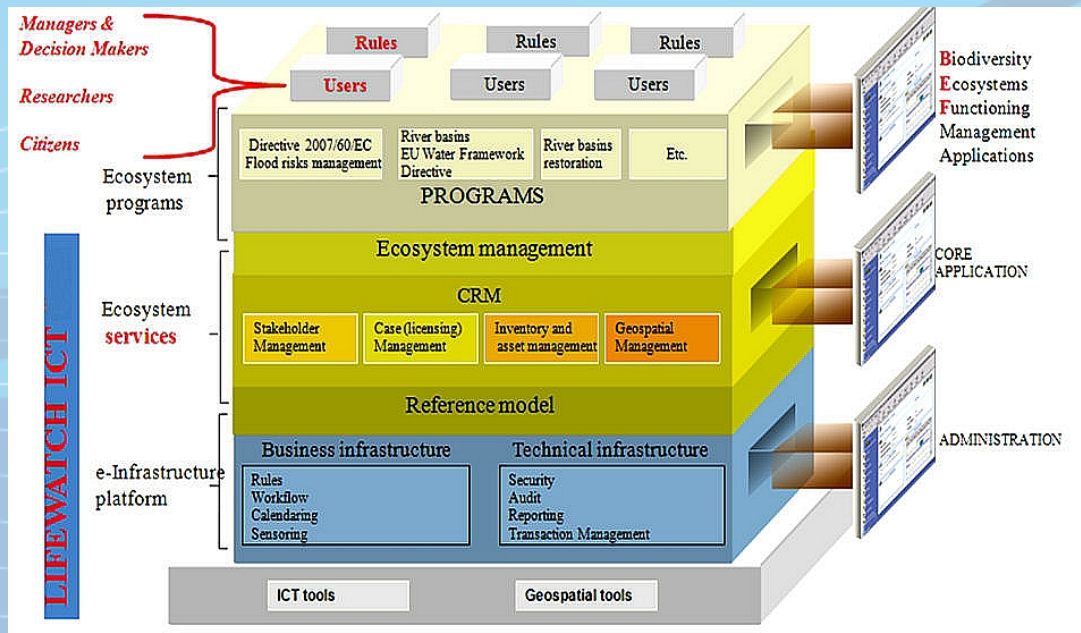
↔ LifeWatch ↔

**Environmental policy & management**

**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.

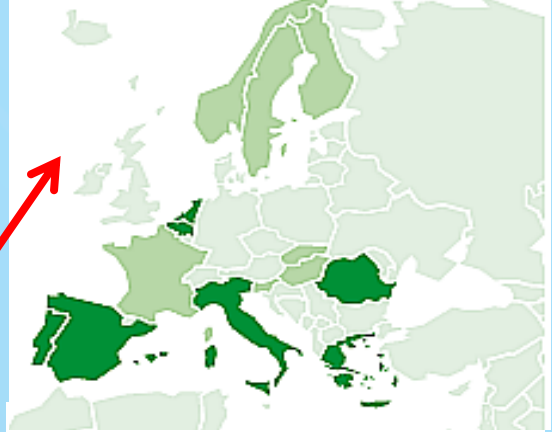


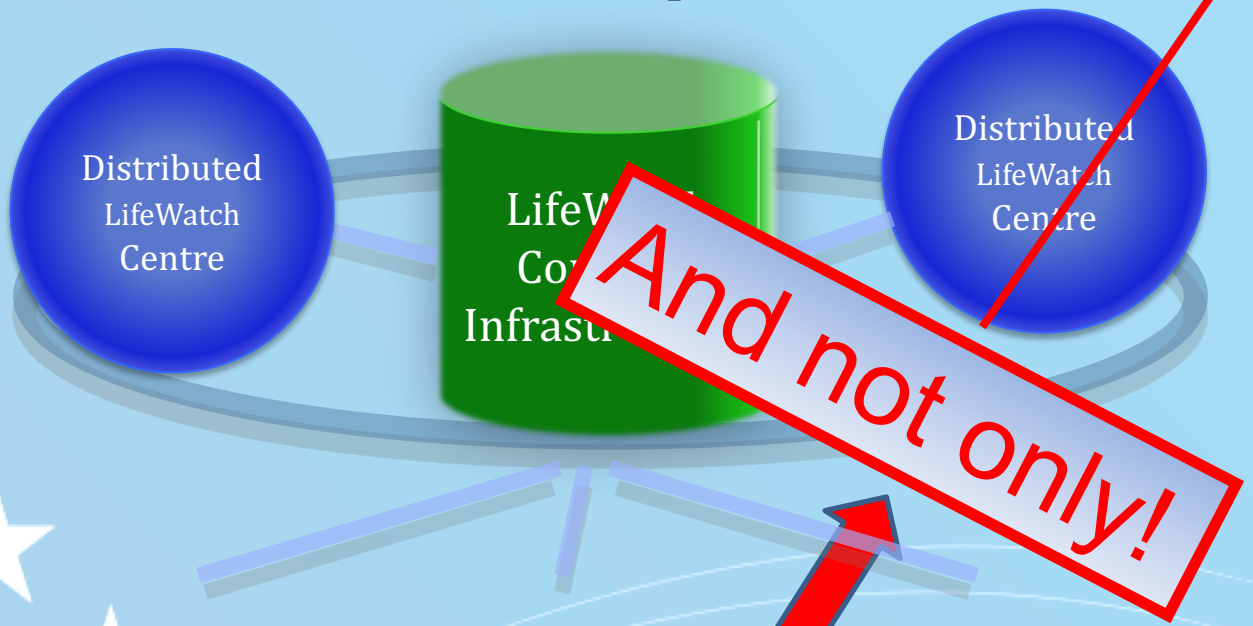
**ESFRI Projects & Landmarks 2016 recently published by European Commission.**

**LifeWatch ERIC considered as an ENVIRONMENT strategic one.**

**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.**






**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-Region Puglia, Italy)

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

e-Lab | e-Lab | e-Service | e-Service

Composition

e-Infrastructure

* * * *

*Resource

OpenProject

JIRA

EU-Brazil OpenBio

EU-Brazil Open Data and Cloud Computing e-Infrastructure for Biodiversity

Cetaf Consortium Of European Taxonomic Facilities

ELIXIR

EU BON

marbef

GBIF

EUDAT

European Data Infrastructure

EMODnet

European Marine Observation and Data Network

Oceans

LTER Europe

eGi

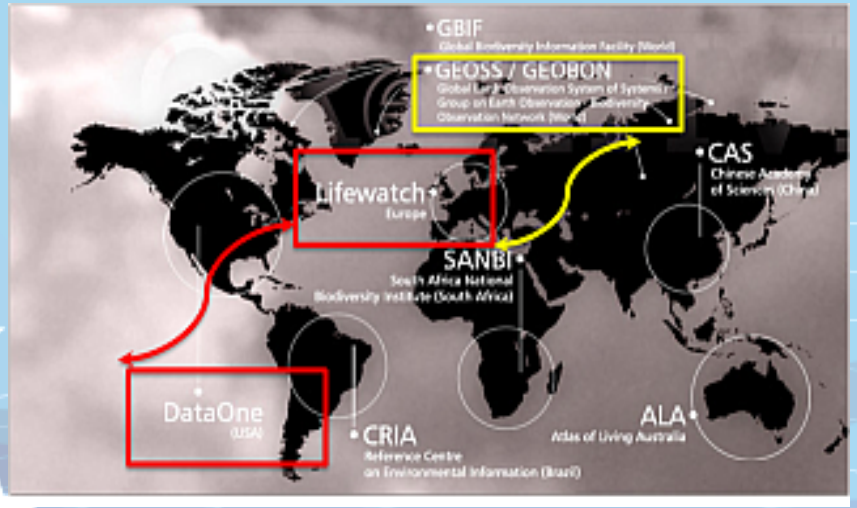
iBERGRID

COOPEUS

COOP+

GLOBIS-B

EU-LAC




And not only!

RDA RESEARCH DATA ALLIANCE

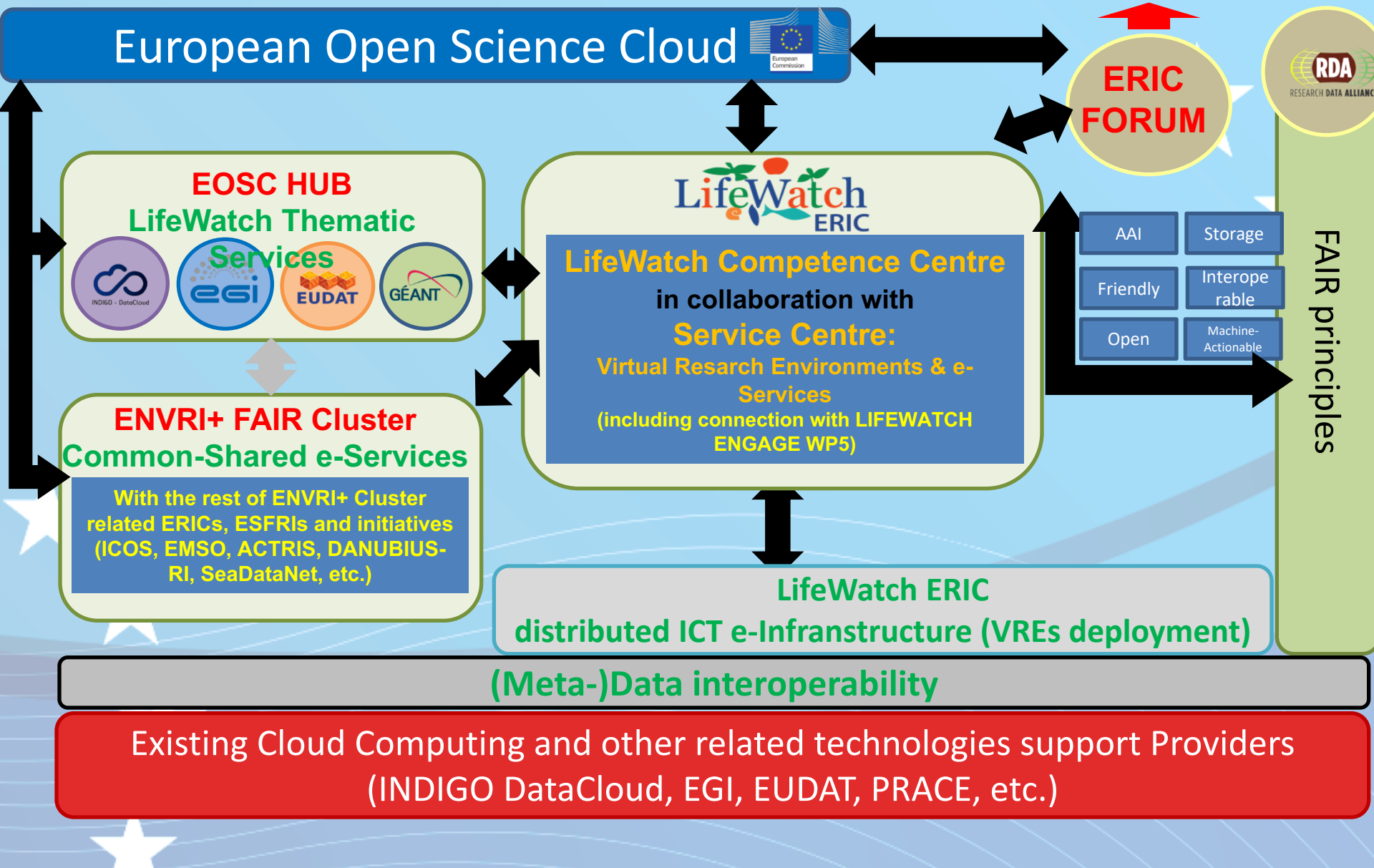
European Commission

European Open Science Cloud

# 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-RIS³



PART II

# Facts rather than statements:

## LifeWatch ERIC construction PT-ES shared vision, approach and instruments

# PORTUGAL: PORBIOTA & IBERLIFE

## PORBIOTA

1. Consortium of Portuguese institutions lead by InBio (Associate laboratory)
2. Academic institutions (universities, research centers)
3. Governmental institutions
4. Together they hold most of the data on Portuguese biodiversity
5. Strong links with the private sector/sustainability

## General aims

1. Distributed e-infrastructure to manage biodiversity data and meta-data from multiple sources (data providers)
1. PORBIOTA is now on the Portuguese Roadmap for Science

FCT
Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

2. Fostering clusters: the Iberlife initiative (Spain + Portugal)

IberLIFE

## PORBIOTA R&D Institutions

InBIO Biodiversity and Evolutionary Biology · ICNF · MARE · CIBIO · CE3C · Instituto Politécnico de Viana do Castelo · U C · Gaspar Frutuoso · SPECO Sociedade Portuguesa de Ecologia · U.PORTO · GBIF PORTUGAL · muhnac · CESAM Centre for Environmental and Marine Studies · LEAF LINKING LANDSCAPE, ENVIRONMENT, AGRICULTURE AND FOOD

## PORBIOTA Consortium Partners

ICETA · U LISBOA UNIVERSIDADE DE LISBOA · ICNF · INSTITUTO SUPERIOR DE AGRONOMIA · universidade de aveiro · Instituto Politécnico de Viana do Castelo · U.PORTO · U C · SPECO Sociedade Portuguesa de Ecologia · Faculdade Ciências Universidade Lisboa · Gaspar Frutuoso

## National RI Roadmap

### PORBIOTA

One of the 40 RI include in the national roadmap, presented in December 2014

FCT
Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

**PORBIOTA integrates LifeWatch ERIC Portugal initiative**

**IBERLIFE = Iberian (ES-PT) LifeWatch ERIC initiative**

**1st IBER**

**held in**

**IBERGF**

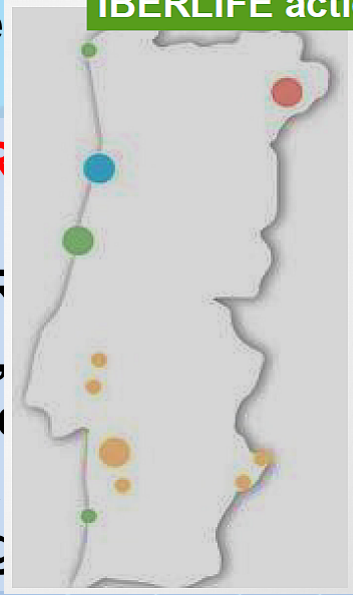
**(Aveiro,**

**followe**

**bilatera**

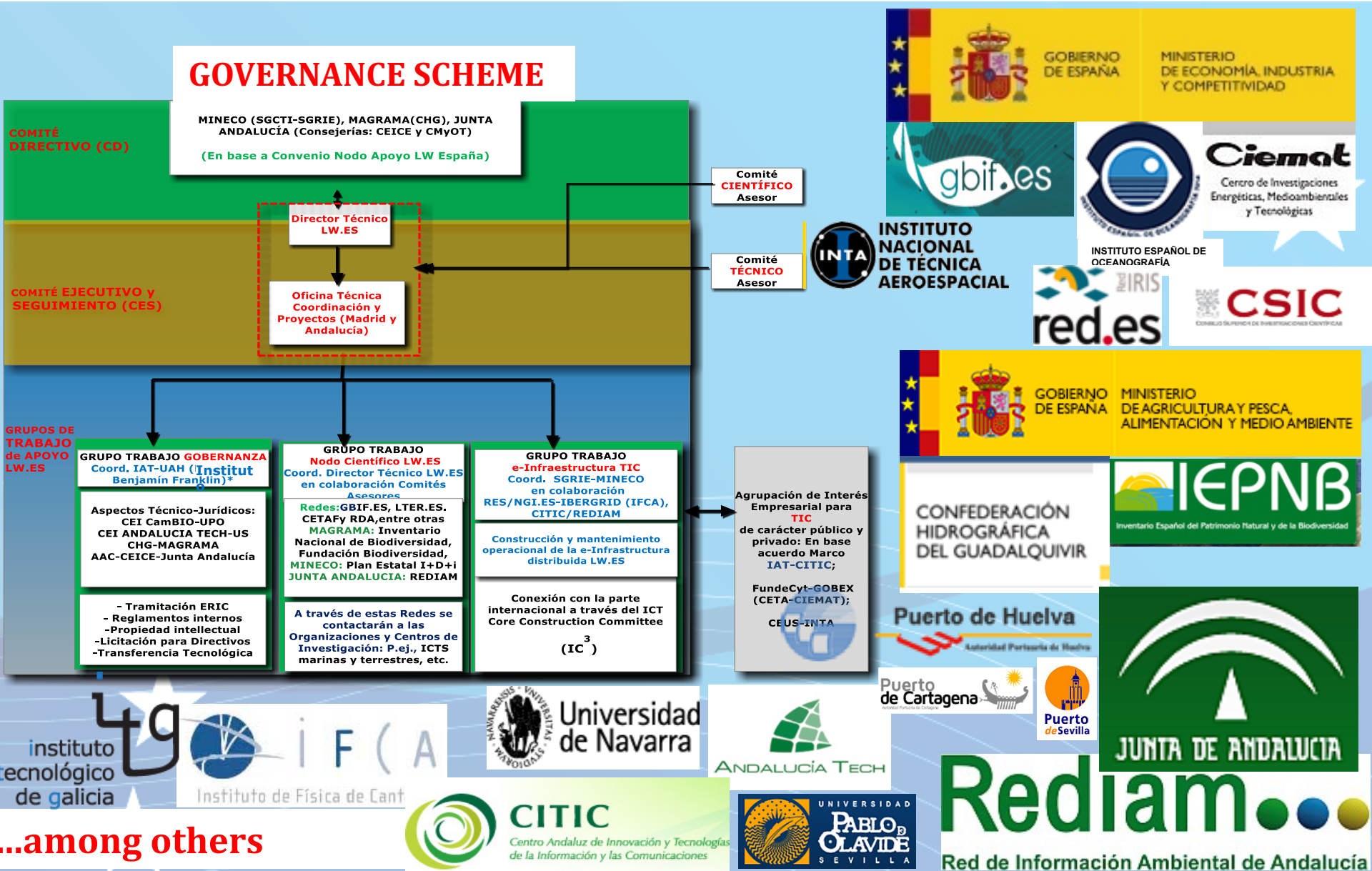
**meetinc**

IBERLIFE action!



# LIFEWATCH SPAIN Community is structured by its Joint Research Unit (acronym JRU LW.ES)

## Composed of 30 Organizations & Institutions (May 2018)

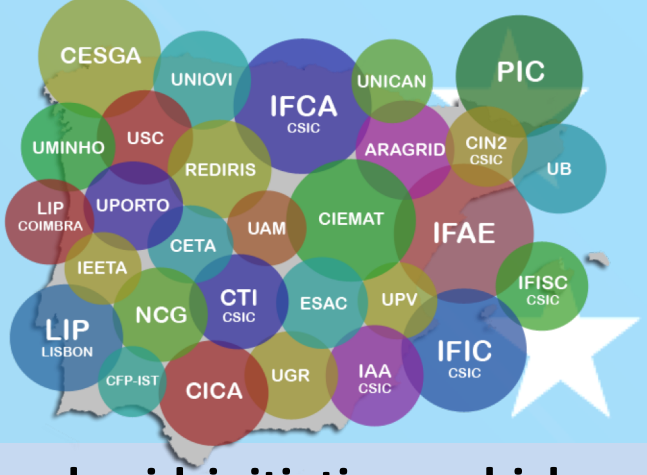



**...among others**

IBERGRID

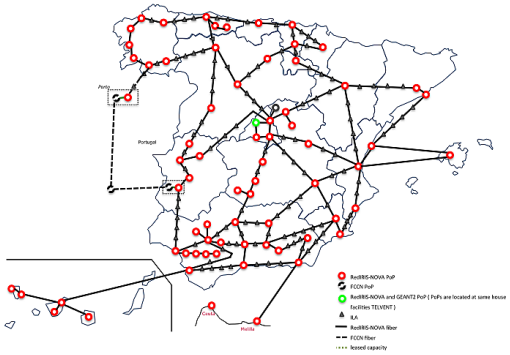
# IBERIAN GRID INFRASTRUCTURE

Federating computing and data resources across the Iberian area




**Federation** of the **Spanish** and **Portuguese** national grid initiatives which provides core services to IBERLIFE initiative and in turn to the EOSC through LifeWatch ERIC.

RedIRIS



**Guaranteeing Portuguese and Spanish connectivity, and in turn with the rest of EU and international (Latin America and Caribbean, etc.).**

RES

RED ESPAÑOLA DE SUPERCOMPUTACIÓN

**Guaranteeing Supercomputing & HPC in tightly collaboration with Portuguese colleagues such as LIP, among others.**

# RIS³ and ESIF related initiatives

- **Individual countries commit to participate in ESFRI (including ERIC) following specific strategies, which usually are also based on regional interests. There is a clear interest and involvement of regional authorities in each country, which demand to be part of this process. Not-surprisingly, several regions of Eastern & Southern Europe have included the construction or the upgrade of RIs in their Regional Strategies for Smart Specialization (RIS³) with the aim to mobilize the Structural Funds allocated to them:**

  - ✓ **That is the case of the 3 European regions which will focus our case study: Andalusia-ES; CCDR-N Porto Norte-PT; and Regione Puglia-IT**

RIS³ ANDALUCIA
Estrategia de Innovación de Andalucía 2014-2020
Andalucía se mueve con Europa

GOBIERNO DE ESPANA
MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

NORTE 2020
Smart Specialisation Strategy
ccdr-n.pt/norte2020
eedr-n.pt/norte2020
Priority Domains
CCDRn · GOVERNO DE PORTUGAL · ON.2 O NOVO NORTE · UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional
Una manera de hacer Europa

Strategia di Specializzazione Intelligente
SMART SPECIALIZATION STRATEGY
REGIONEPUGLIA

PROGRAMA COOPERACIÓN TRANSFRONTERIZA ESPAÑA - PORTUGAL

Interreg Sudoe

Workshop on the use of Structural Funds for the construction of distributed e-Infrastractures supporting ENVironment initiatives

**May 12th, 2014**

**EU Commission - DG CONNECT**

**Avenue de Beaulieu 25, (room S1), 1160 Brussels**

This interest was reflected in the attendance to this workshop, over 80 persons from 15 countries and over 20 regions

RICH
Research Infrastructures Consortium for Horizon 2020

**http://www.rich2020.eu/symposium2016**

**Madrid, April 2016**

# RICH Symposium on Funding Instruments for developing Research Infrastructures

## ATAS

***Proceedings***

2014 JULY 10-11 UNIVERSITY OF ÉVORA

20th APDR CONGRESS

RENAISSANCE OF THE REGIONS OF SOUTHERN EUROPE

ISBN 978-989-8780-01-0

**Italy, Portugal & Spain regional cooperation results**

## MAKING A JOINT USE OF EU-FUNDS: OPPORTUNITIES AND CHALLENGES ASSOCIATED TO EUROPEAN RESEARCH INFRASTRUCTURES

Juan Miguel González-Aranda[1*], Benjamín Sánchez Gimeno[1], Fernando Ballestero[1], Ricardo Migueis[2], Alberto Basset[3], Daniel Escacena Ortega[4]

[1] Ministry of Economy and Competitiveness, C/ Albacete 5 28027-Madrid, Spain, juanmiguel.gonzalez@mineco.es
[2] Fundação para a Ciência e a Tecnologia-Ministry of Education and Science, Av. D. Carlos I 126 1249-074 Lisboa, Portugal, ricardo.migueis@fct.pt
[3] University of Salento, Vía per Monteroni 73100-Lecce, Italy, alberto.basset@unisalento.it
[4] Andalusian Knowledge Agency-Regional Government of Andalusia, C/ Max Planck 3 Edificio Iris 1 Isla de la Cartuja 42092-Sevilla, Spain, daniel.escacena@juntadeandalucia.es

# PART III

# Some conclusions

- ✓ **LifeWatch ERIC is a particularly relevant case of ENVironmental RI from the Iberian (either at national or regional) perspective:**

  **As it is a distributed e-Infrastructure, some regions are aware of its potential for:**

  - ✓ Capitalizing already existing investments
  - ✓ Improving ICT developments that may be useful for biodiversity research and for other purposes
  - ✓ Special attention must be placed to the expected impact in the regional industrial sectors

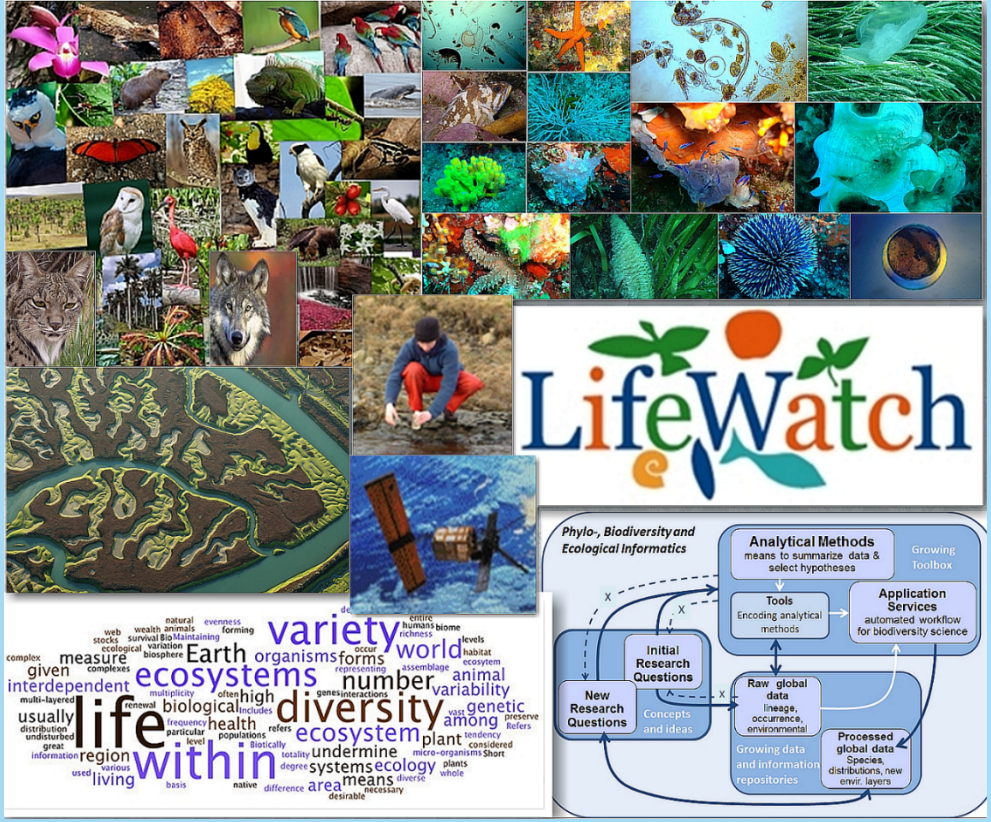
- ✓ **As a result, the existing knowledge and services related with biodiversity and environmental information from cooperating initiatives among territories should be better connected. This a real challenge for Environmental RIs which also includes specific topics such as shared ICT developments, Intellectual Property Rights (IPR), Open Access (RDA) and European Open Science Cloud (EOSC) connections. All of these items demand the involvement of the interested regions.**

- ✓ **In that sense, ongoing initiatives such as IBERLIFE (based on the LifeWatch Competence Center-IBERGRID) and common Biodiversity and Ecosystem Resesarch & Management programmes established at Mediterranean, Atlantic, Latin America-Caribbean and African context, provide a common ground to reinforce the development of PT-ES shared distributed e-Infrastructures. In fact, it is already considered as an example of good practices to integrate physical and virtual media through the LifeWatch ERIC.**

# ...BUT:

- ✓ **The implementation of distributed Environmental RIs would be at serious risk if regional Smart Specialization Strategies (RIS$^3$) policies 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. This a crucial issue as normally Preparatory Phases are usually conceptual-based exercises and they do not take into consideration the actual commitments of the countries (including their regions). New "drivers/catalysts" should be appointed in order to integrate all the pieces of this complex jigsaw puzzle.**

- ✓ **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 LifeWatch ERIC Sustainability based on an early identification of "in-kind" and "in-cash" Member States (including their Regions-RIS$^3$) contributions; consisting of at least a 5-years period "Cash Flow" Analysis. It follows a sequence of releases, starting with a down-scaled level and a incremental & iterative construction methodology ("Agile"-based) with a proper Quality Assurance & Risk Management Plan associated, *in tightly collaboration with the European Open Science Cloud-EOSC plans, and thus, IBERLIFE initiative is important in this regard*.**




# ¡ Muito obrigado - Muchas gracias !

## *Thank you very much for your attention!*

# Any questions ?

**http://www.lifewatch.eu**

*cto@lifewatch.eu*