LifeWatch-EGI Competence Centre
5th LifeWatch e-Infrastructure Construction Operational Meeting

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Provide solutions for

open science, research and innovation

by federating

Digital Capabilities

People

Knowledge

EGI offer for LifeWatch

- **Federated operations**: the services to operate and share the heterogeneous distributed capabilities of LifeWatch
  - Federated Authentication and Authorization Infrastructure (from X.509 to federated IdPs)
  - Distributed accounting: storage, HTC, cloud
  - Distributed monitoring, including security
  - Service registry
  - Coordinated security policies, monitoring, operations
  - *Future: marketplace of services*

- ## Federated High Throughput Data Analysis
  - On-demand compute, storage and data management services to scale-up LifeWatch infrastructure
  - Technology (certified middleware) for secure distributed access to LifeWatch compute/ storage/data infrastructure → secure sharing of LifeWatch services with other communities
  - *Future: federated accelerating computing infrastructure*

EGI offer for LifeWatch

- **Federated Cloud infrastructure**
  - On-demand cloud compute and storage services
  - Technology (certified middleware) to implement a federated LifeWatch community cloud spanning Europe and beyond
    - Distributed accounting
    - Homogeneous X.509-based access
    - Support of cloud open standards
  - Application registry for sharing of virtual appliances (scientific applications, data, virtual labs), creation of communities of scientific applications

- ## Open data cloud platform
  - ### Scalable use of open data → Data as a Service
    - Discovery, access, transport and caching of biodiversity archived data
    - Publishing and dissemination of new open data after processing
  - ### Access to open data for education and training purposes and sharing of educational material
    - Supported by the EGI Federated Cloud
  - ### Citizen science

# Why a joint EGI-LifeWatch Competence Centre?

- Knowledge is distributed and is more effective when joined up and shared

- The CC brings together
  - User communities
  - Technology providers
  - Service providers

- For
  - Technical development
  - Training, support, community building

Motivation

- Support the integration of LifeWatch VREs with EGI solutions

- Evolve the EGI technical services with LifeWatch requirements → co-development

- Promote LifeWatch services
  - Scientific applications
  - Joint training programme
  - Technical user support

- Promote reuse of solutions of common interest across research communities

- Deploy cloud and GPGPU based e-Infrastructure services required to support data management, data processing and modeling for Ecological Observatories

- Increase the participation of citizens in data-intensive biodiversity research

- Facilitate the adoption and evolution of the EGI technologies by the LifeWatch user community
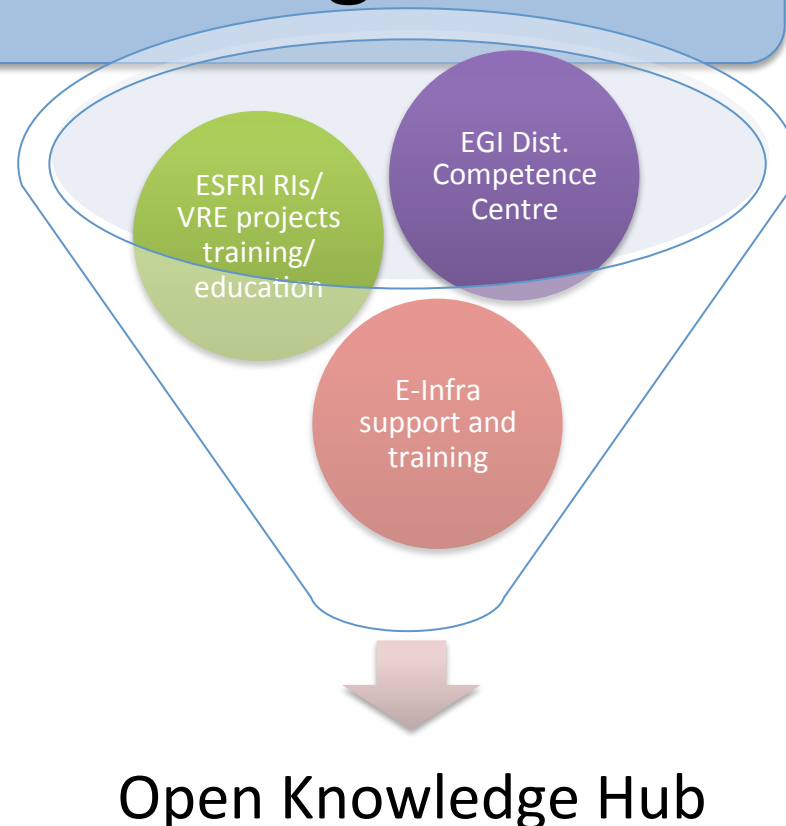
How

- With the support of the EC H2020 programme
- Projects
  - EGI-Engage, 30 months
  - Indigo Datacloud
- Objective
  - Sustain the Competence Centre as entity beyond the lifespan of
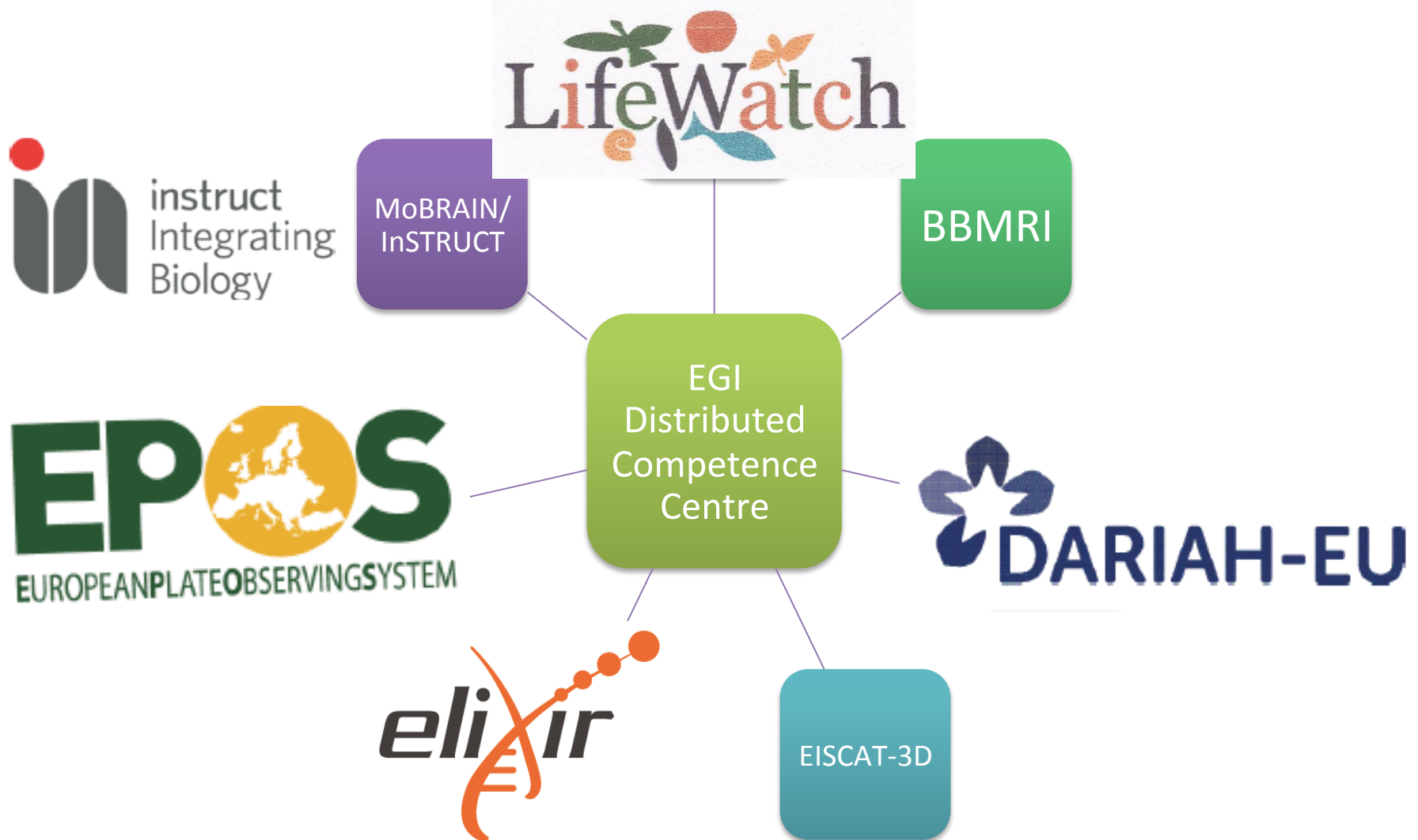
European Open Knowledge Hub

A *coordinated* network of competence centres sustained by multiple stakeholders: e-Infrastructures, RIs, Data Providers

- For multiple different disciplinary areas
- For different technologies and capabilities

ESFRI RIs/ VRE projects training/ education

EGI Dist. Competence Centre

E-Infra support and training

Open Knowledge Hub

OpenScience Commons

Researchers from all disciplines have easy, integrated and open access to the advanced digital services, scientific instruments, data, knowledge and expertise they need to collaborate to achieve excellence in science, research and innovation

www.opensciencecommons.org

The 'Commons' Approach
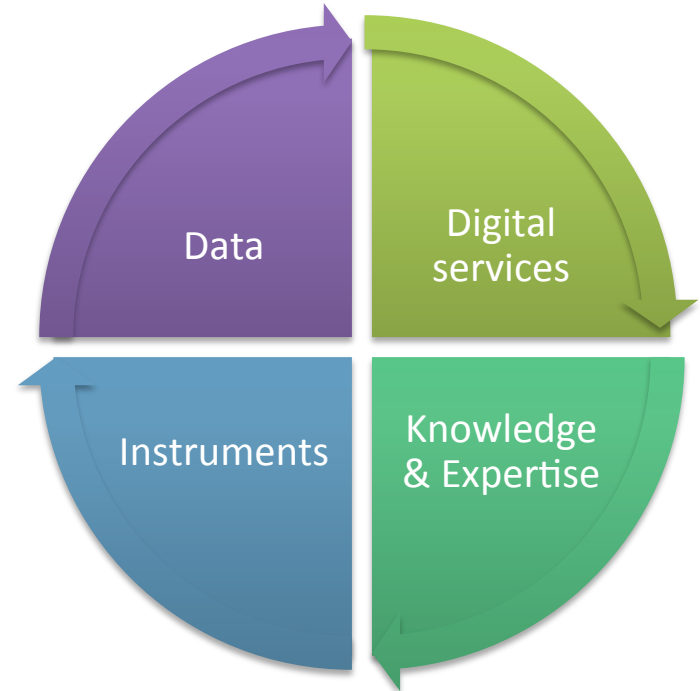
OpenScience Commons

Applying the "commons" principle to all dimensions of Open Science

Commons

Resource management principle by which a resource is shared within a community

- Non-discriminatory access
  - Not depending on user identity or intended use
- Not necessarily free access
  - Recover costs
  - Avoid congestions/depletion "*tragedy of the commons*"
  - Congestions polices (e.g. charging for use, quotas)

Infrastructure: the Social Value of Shared Resources:
http://www.amazon.com/Infrastructure-Social-Value-Shared-Resources/dp/0199975507

Principles of the Commons	What it means to the Open Science Commons
Shared community resources	research data, scientific instruments, digital services, software, scientific publications, educational and training, expertise
Community-based rules and procedures in place with built-in incentives for responsible use	Access modes are well defined and non-discriminatory for all members of the ERA (e.g. see charter for open access to RIs); clear points of access and support
Governance: the community is part	Governance model with multiple stakeholders, including research communities, scientific infrastructures, resource providers, national and European infrastructures, etc.
Long-term, persistent care for a given resource for the benefit of oneself and others	Long-term support of funding agencies to allow for infrastructures to take a long-term view and build for a common European future

Key Actors

- Policy makers & funding agencies
- Research Infrastructures
  - e-Infrastructure providers
    - EGI, GÉANT, PRACE, EUDAT, …
  - Scientific Infrastructures
    - ELIXIR, BBMRI, CTA, LifeWatch, …
- Data providers
  - Institutional, community-specific
- Research communities (public/private)
  - Big communities
    - Can afford specialised experts, yet need
  - Small groups/individuals
    - Limited resources and expertise
  - Citizens
  - Co-owners of publications, data and expertise

Open Science Commons/Knowledge

- Objective → Share Open Science Knowledge without barriers and accessible to all user groups including Industry and SMEs

- Network of distributed competence centres for federation of knowledge: education and training European hub
  - HTC/HPC/Cloud
  - Data management and Data stewardship
  - VREs and Scientific codes porting
  - Training
  - Certified body of knowledge

OpenScience Commons

http://go.egi.eu/osc

- *A new approach to digital research, tackling policy challenges and coupling the "open science" and the "commons" economy as a new paradigm for knowledge creation and collaboration in research*

- *EGI invites LifeWatch to join and develop these concepts*
  - http://www.opensciencecommons.org/get-in-touch/
  - Workshop with "commons" experts, policy makers, research e-infrastructures and users
    - Co-located with the EGI Conference 2015, http://conf2015.egi.eu/