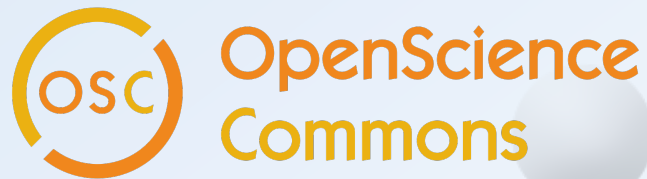


Developing an Open Science Commons that can benefit citizen science



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www.egi.eu

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Open Science

Opening of the **creation** and **dissemination** of **scholarly knowledge** towards a multitude of stakeholders, from professional researchers to citizens



Source: <http://goo.gl/uO9MK5>

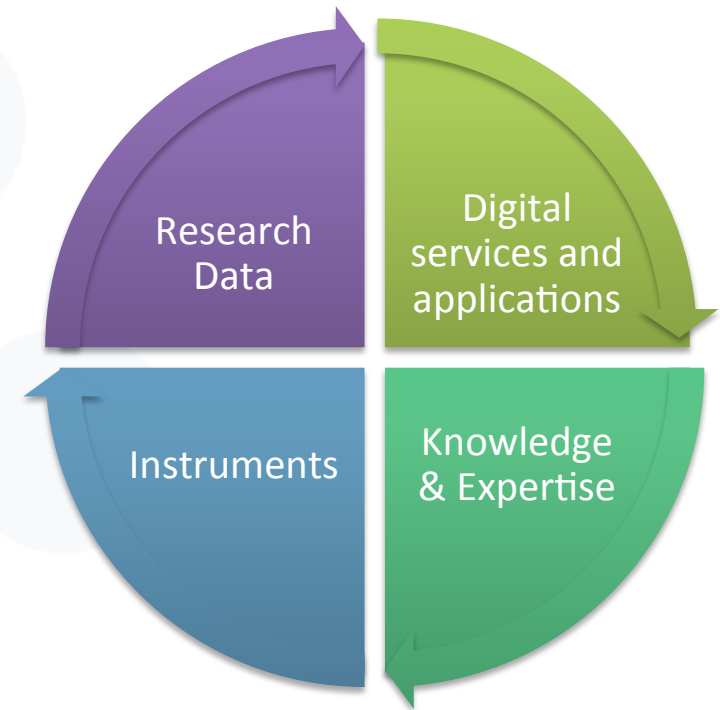
Openness
Participation
Collaboration
Sharing
Re-use



Greater social value

Open Science: a Complex Resource System

- Shared resources
 - Integrated, easy and fair access
- Engaged communities
 - Participating in the process
 - Culture of sharing
 - Collaborating in the management and stewardship
- Governance
 - Rules to access
 - Rules to resolve conflicts
 - Rules to balance quality vs. openness
- Financial support
 - For long-term availability



Institutionalised community governance of the **production** and/or **sharing** of a particular type of resource (from natural to intellectual)



[GÉANT: European Communications Commons](#)

[Constructing Genome Commons](#)

Wikipedia

...

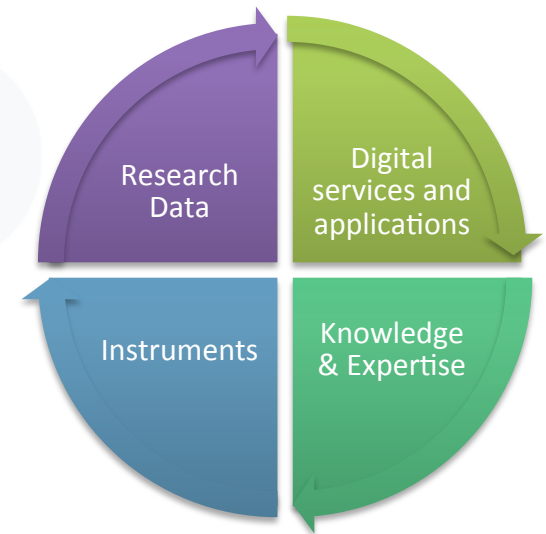
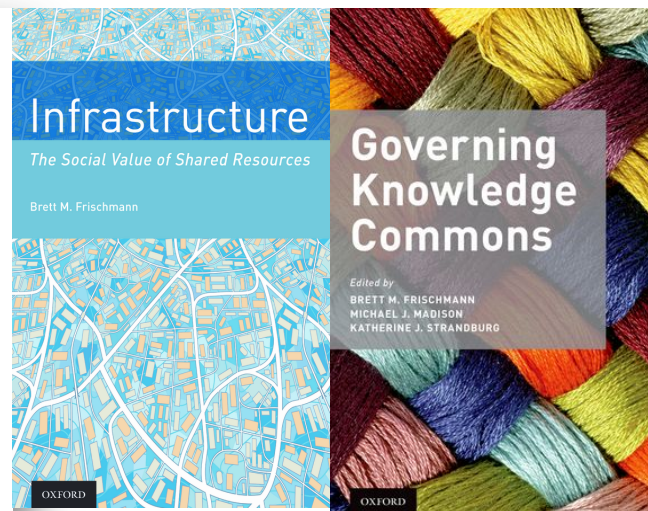
[e-Infrastructure Commons](#)

Linux

Internet

Open Science Commons: Definition

- A set of interrelated resource systems governed as commons that support the open creation and dissemination of scholarly knowledge
- An area of study in the commons theory applied to open science



website: www.opensciencecommons.org - paper: <http://go.egi.eu/osc>

Researchers (*including citizen scientists!*) from *all disciplines*

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

They feel engaged in governing, managing and preserving these resources for everyone's benefit, with the support of all stakeholders.

Commons for citizen science: the example of the LifeWatch RI 1/2

FRAMEWORK

- **LifeWatch (lifewatch.eu) is an ESFRI** (*EU Research Infrastructure*)
 - Addressing Biodiversity & Ecosystems
 - An e-Infrastructure to build Virtual Research Environments (VRE)
 - Integrating **OPEN DATA** information
 - GBIF, LTER, GENBANK, SATELLITE IMAGES, TERRESTRIAL MAPS...
- **EGI-LifeWatch Competence Center**
 - Framework: EGI FedCloud
 - Dedicated Resources (~5000 cores + few PB, new node in Seville)
- **Support LW VRE**
 - Marine VRE (marine.lifewatch.eu)
 - Terrestrial + FreshWater VRE
- **Pilot projects**
 - Ecological Observatories Data Flow and “Big Data” analysis
 - Workflows: Galaxy and TRUFA; Network of Life
 - Citizen Science: Assisted Pattern Recognition

Commons for citizen science: the example of the LifeWatch RI 2/2

EGI-LIFEWATCH CC EXAMPLE 2

Support to Citizen Science (Assisted Image Recognition)

Citizens collect and upload geo-pos image observations of species using a mobile app (iNaturalist), the image is stored and an initial identification returned

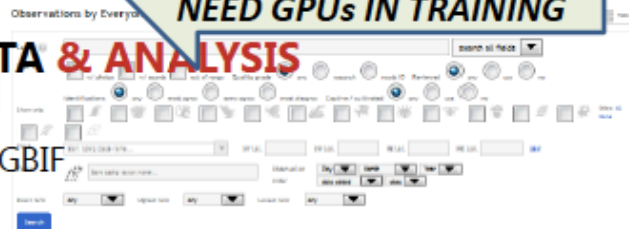
– **INTEGRATE EXISTING OPEN RESEARCH DATA**

- USE EXISTING IMAGE DATABASES TO TRAIN NN

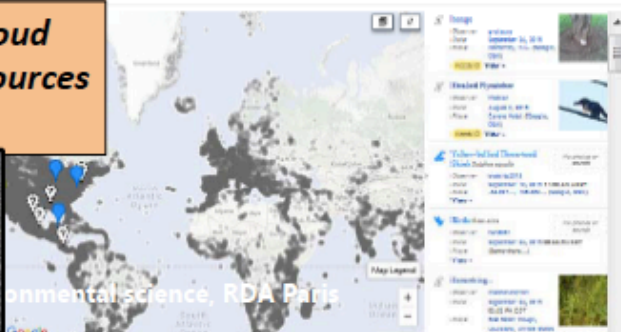
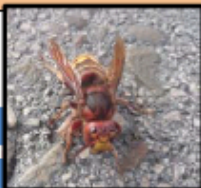
STORAGE+COMPUTING
NEED GPU_s IN TRAINING

– **PRESERVE NEW OPEN RESEARCH DATA & ANALYSIS**

- UPLOADED IMAGES (SIGNIFICANT STORAGE)
- IDEALLY, OBSERVATION IS FUTURE INPUT TO GBIF



*GBIF.es services/storage already running in FedCloud
Additional Storage requires "elastic" increase of resources
Connect/Integrate with GPU*



How can **all** citizen scientists benefit from the Open Science Commons?

How can e-Infrastructures and RIs help citizen science?



OpenScience
Commons

