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Consiglio Nazionale delle Ricerche
ISTI

Going beyond research communication and management current practices

CRIS2014 Conference

13-15 May 2014





Outline

- Impact of data-driven science in the research “landscape”
- OpenAIRE: an infrastructure for research



Data-driven science

Sensor data

Experimental data

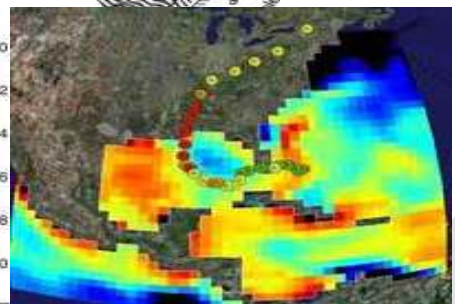
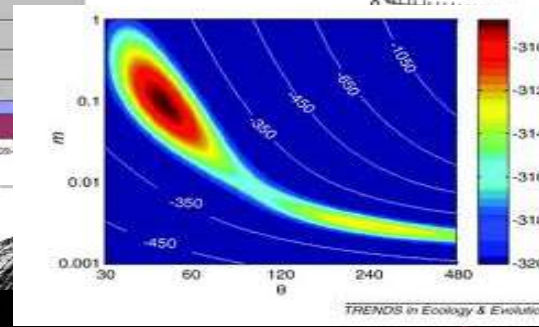
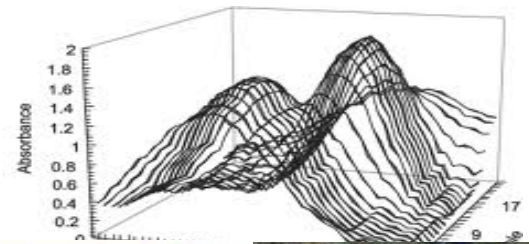
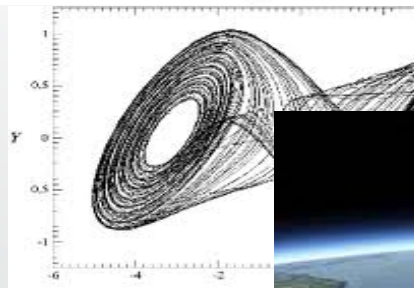
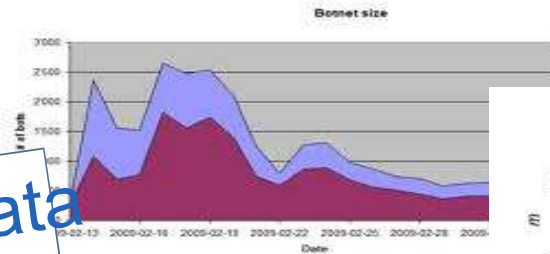
Observation data

Statistical data

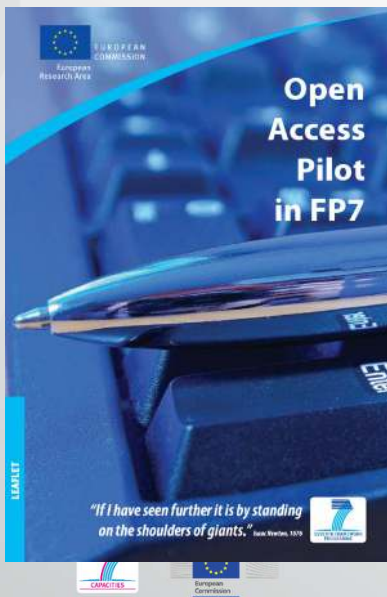
Social data

Crowdsourcing data

Secondary data



Open Access policies

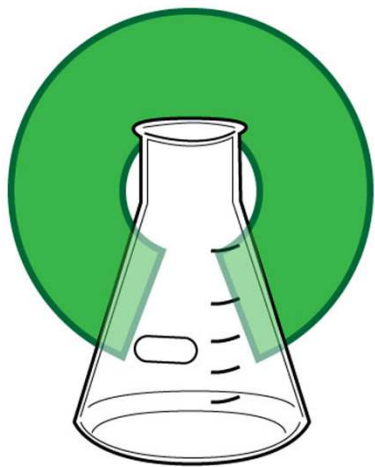


OA recommended
policy on publications



OA mandatory policy on
publications, recommended
on data

Open Science



open science

“Open science means many things, but primarily scientific knowledge that people are free to use, re-use and distribute without legal, technological or social restrictions”

Open Science WG - Open Knowledge Foundation

Two sides of the coin

**Access to and re-use of
shared knowledge**



European
Commission

Contribution to shared knowledge



Global challenges

Through the integration of a huge amount
of local datasets



CRIS2014, Rome, 13-15 May 2014



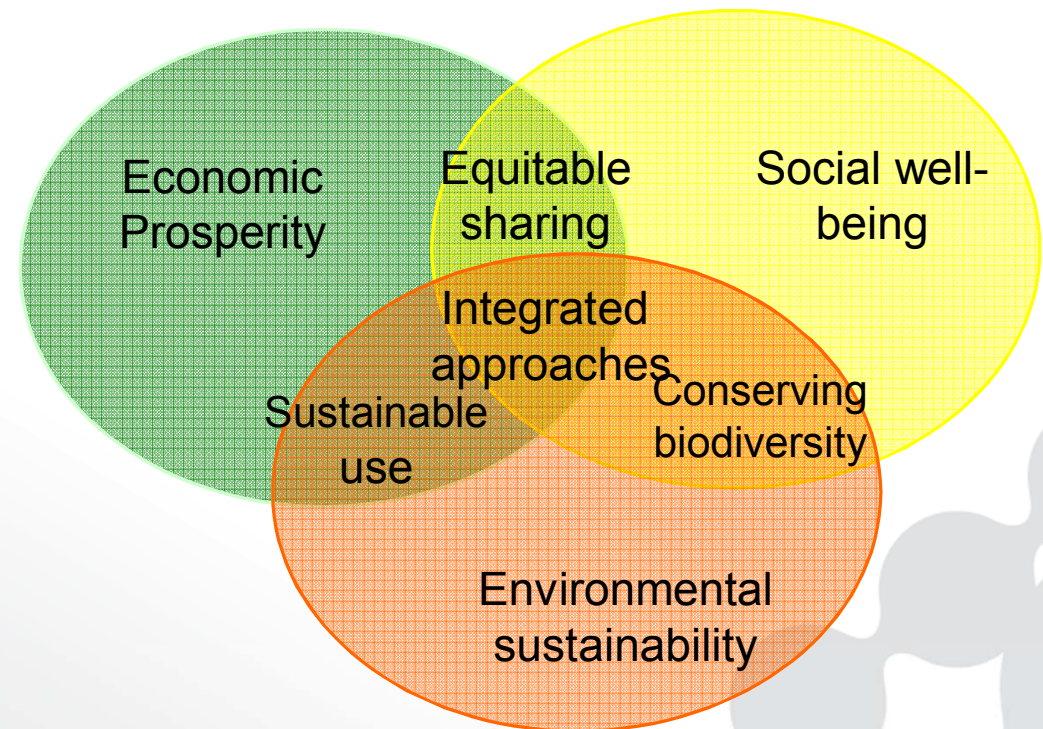
Improved analysis, modeling, knowledge generation

Through cross-domain data
mashup



Improved decision making

Through access to multi-disciplinary heterogeneous data





An opportunity

- **Polimath Project**

Massively collaborative online mathematical projects

- **GalaxyZoo**

To understand how galaxies formed everyone help is needed to classify them according to their shapes.

“If you're quick, you may even be the first person to see the galaxies you're asked to classify.”



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PROJECT POLYMATH
One da Vinci changed the world. Let's create thousands.



Impact on Research Infrastructures: new services



- * Descriptive metadata
- * Object identifiers
- * Access Policies

Access & Sharing

**Storage & curation of
generated data**

products

Impact on Research Organizations: Data Repositories

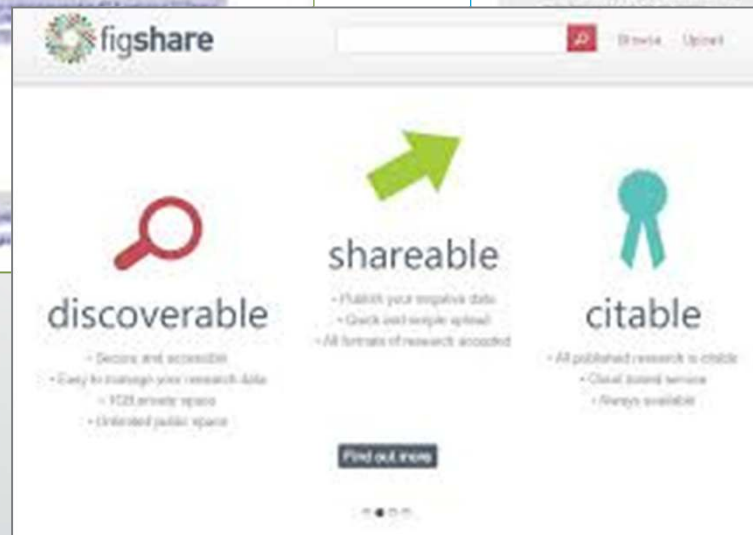
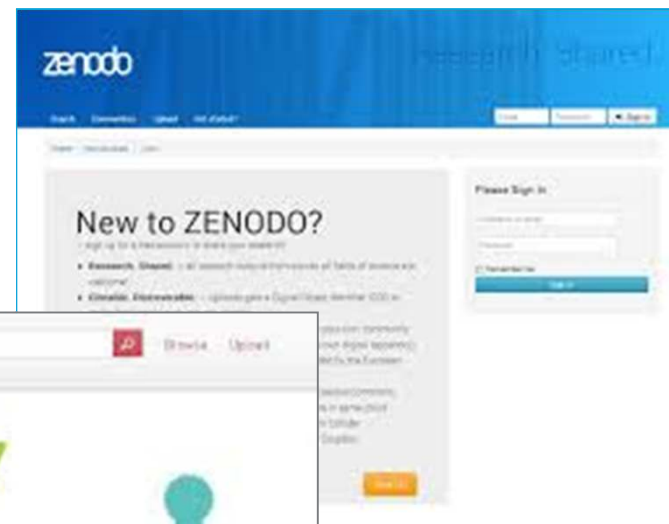


- Institution based
- Nationally supported (by data center or third-party provider)

Long tail of science



Impact on Innovation: Third-party service providers



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Impact on publishers

Data
gathering



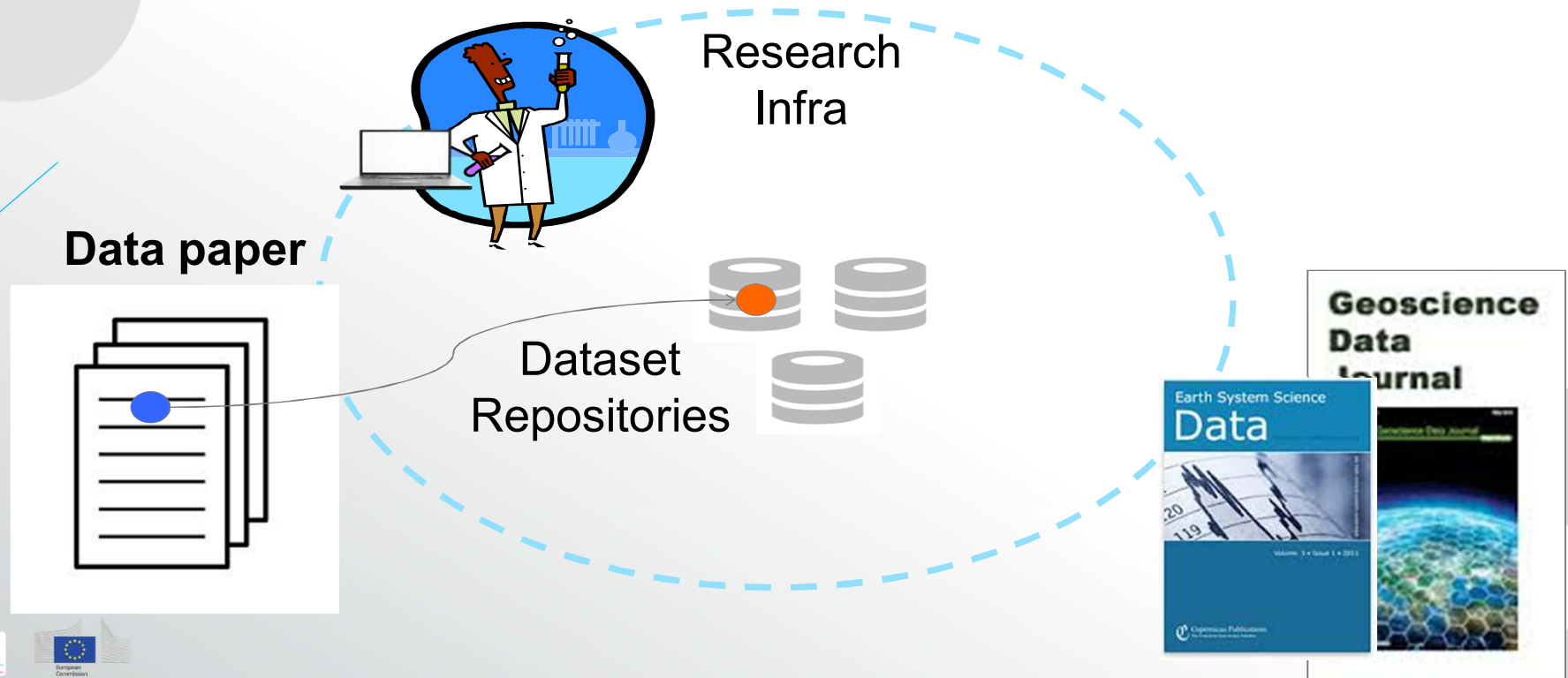
Data analysis
&
processing,
mining



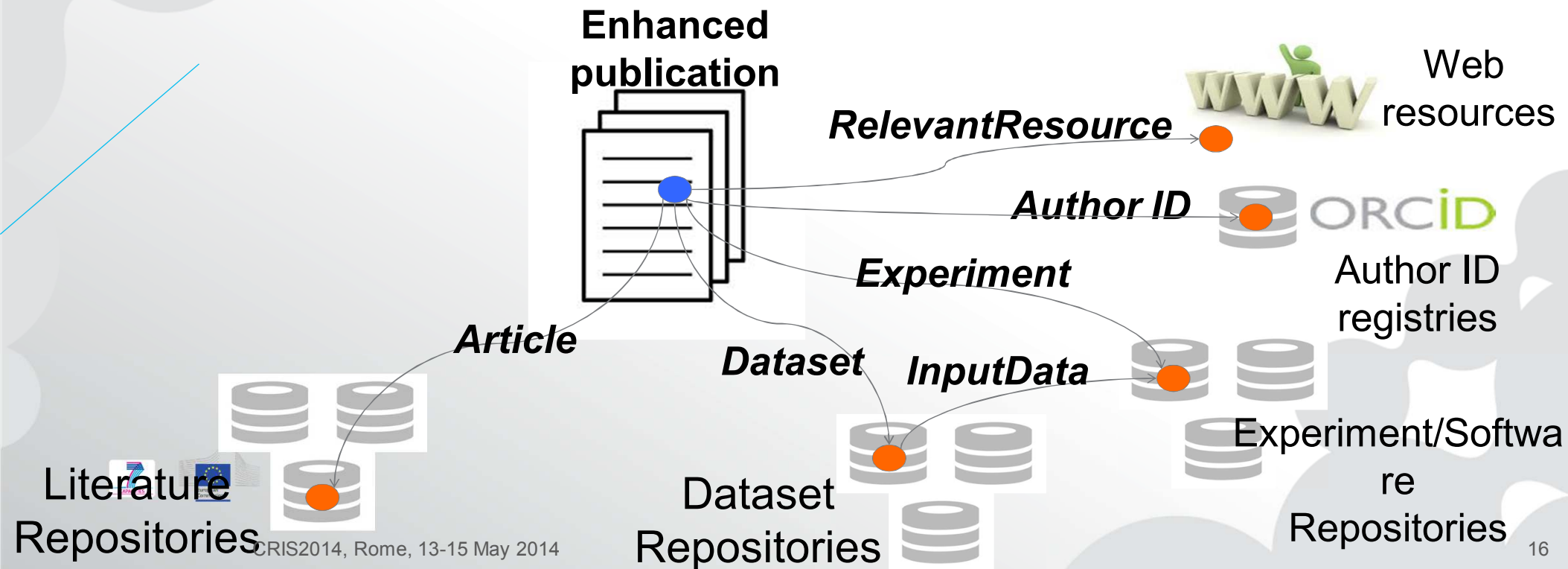
Outcome
description



Impact on publishers: Data papers



Impact on publishers: Enhanced Publications



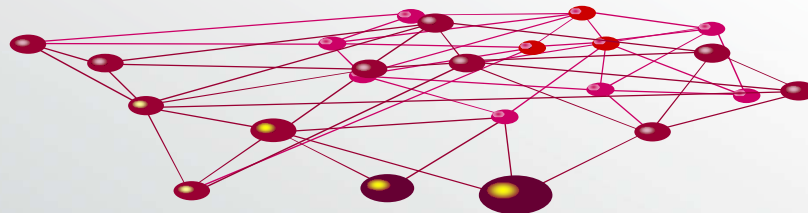
Impact on Research Administration

- Data Management policies
- Monitoring of OA and other policies
- Evaluation of research activities
- Common services
- Staff Roles
- Budget allocation
-



e-Infrastructure

Electronic platform operated by a responsible entity offering an open set of basic enabling services (including services for access to resources) to a Community of Practice. By sharing these services the members of the Community of Practice realise economies of scale.



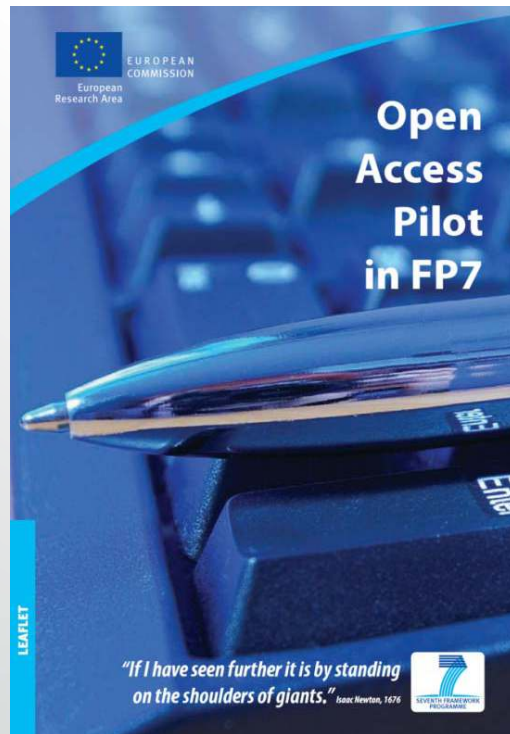


OpenAIRE

**OPEN ACCESS
INFRASTRUCTURE**

for Research in Europe

OA EU Pilot Mandate



FP7 OA Pilot (2008)

- Grant agreement SC39
- 20% programme areas
- Deposit in Repositories
- OA after embargo period (6-12 months)
- Gold payments during project



OpenAIRE

Open Access Infrastructure for Research in Europe

200
9 –
201
2



Infrastructure for the identification,
deposition, access, and monitoring of
FP7 and ERC funded articles

*Point of reference for Open Access in
Europe*





OpenAIRE

Open Access Infrastructure for Research in Europe

2011
—
2014



- Any OA article
- Any EU and National Funding Scheme
- Publications in context (datasets, projects funding schemes, people, etc.)



What is OpenAIRE

1 SUPPORT

Helpdesk. Engaging people and scientific repositories in 27 EU member states and beyond

2 PORTAL

24 x 7 Service. Access to Research records. Linking publications to datasets, author information and above all, funding information

3 ZENODO

Repository for data and articles that can be stored neither in institutional nor in subject-based/thematic repositories



Supporting OA in Europe

OpenAIREplus Networking Organization

Operational
Support
(eIFL)

Strategic Coordination
(UGOE)

Helpdesk
Management
(UMINHO)

Region 1 North (DTU)	Region 2 South (UMINHO)	Region 3 East (eIFL)	Region 4 West (UGENT)
Denmark	Cyprus	Bulgaria	Austria
Finland	Greece	Croatia	Belgium
Iceland	Italy	Czech Republic	France
Norway	Malta	Estonia	Germany
Sweden	Portugal	Hungary	Ireland
	Spain	Latvia	Luxemburg
	Turkey	Lithuania	Netherlands
		Poland	Switzerland
		Romania	UK
		Slovakia	
		Slovenia	

OpenAIRE representing all Member States

- 32 National Open Access Desks
 - Involving the research libraries
 - Diverse national research environments
- OA advocacy through targeted activities
 - Liaison with National Reference Points
 - Helpdesk, workshops, training
- Definition of shared guidelines
- Harmonisation of OA policies

OpenAIRE Services



[PARTICIPATE](#)
DEPOSIT, JOIN

[SEARCH](#)
PUBLICATIONS, DATA, PROJECTS

[STATISTICS](#)
OA, PROJECTS, TOPICS

[SUPPORT](#)
FAQ, HELPDESK, GUIDES

[OPEN ACCESS](#)
IN EUROPE

[Repositories](#)

[More search options](#)



Researchers

- > Deposit publications & data
- > Link research to funder/project
- > Download author's guide for OA



Data Providers

- > Register & validate content
- > Get guidelines for interoperability
- > Enrich repository content



Research Managers

- > Learn about EC & national policies
- > Create project reports
- > Get statistical information

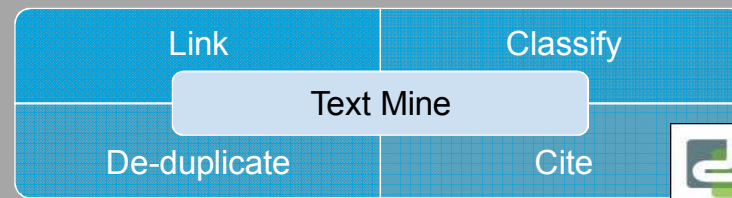


Funding Agencies

- > Learn how to embrace OA
- > Participate in OpenAIRE
- > Find aggregated statistics



Guidelines for use services



APIs

api.openaire.eu



Guidelines for data interoperability

Metadata And pdfs Usage data



Publication repositories
Institutional & Thematic
Open Access Journals



CERN/OpenAIRE "catch-all" repository



Metadata on data

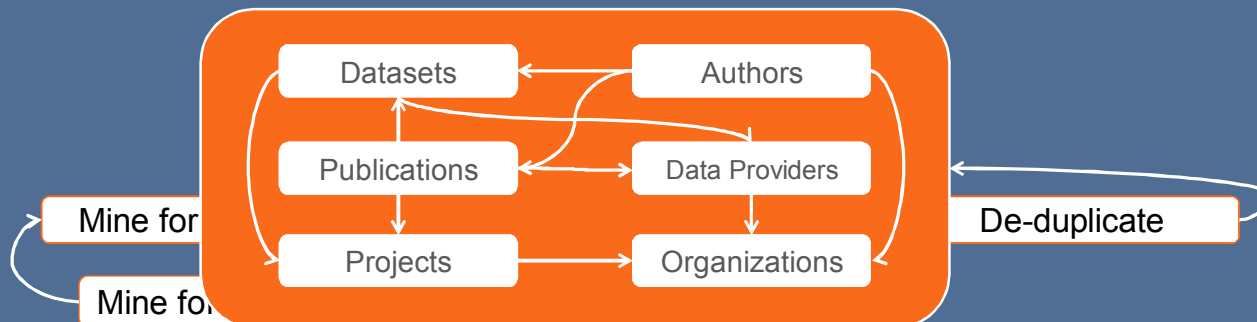


Data repositories
Data Journals

Deposit Publications Visualize - Manage Enhanced Publications Curate & collaborate Research impact statistics

Services for Project Coordinators, Project Funders, Funders

Infrastructure coordination



Infrastructure: data sources

Publication repositories

Institutional & Thematic

Open Access Journals

Publishes in OA journal

CERN/OpenA



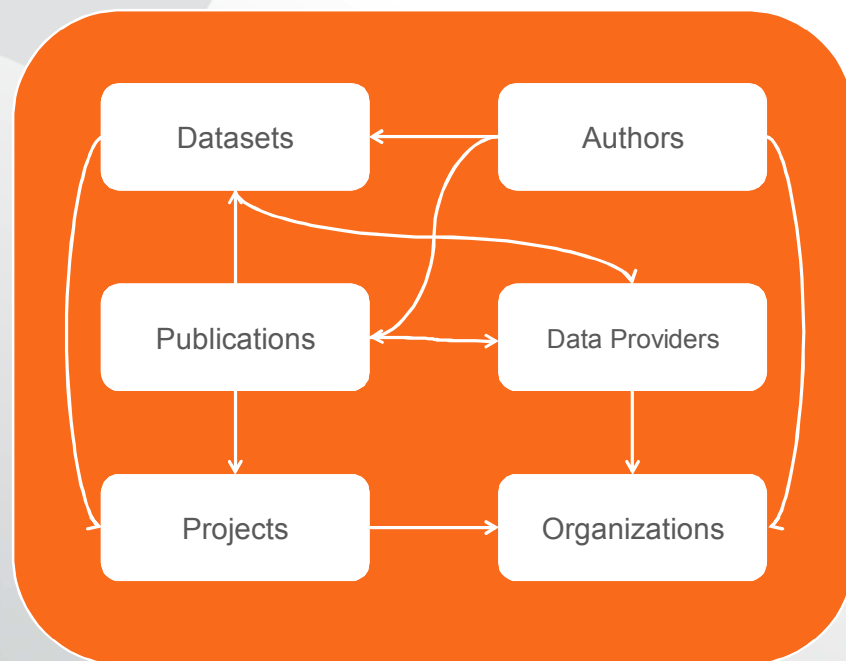
E "catch-all" repository

Data repositories

Data Journals

Publishes data

Added Value: Integrated Scientific Information System



8.4 mi publications
7 mi authors
430+ data providers
Linked to 80K projects from
2 funders (EC and Wellcome
Trust)
Linked to 700 datasets
33K organizations

Researchers

Comply with **multiple** funders and institutional mandates



- Info on OA mandates
 - H2020 - ERC
 - National programmes
- Researchers' options and rights
 - FAQs and online guides on copyright issues – regularly updated
 - Ask a question to your local OA expert (NOAD)

Please select a topic for your support enquiry

Area :  Researchers

[Back](#)

[General questions](#)

[How to comply](#)

[Publishing issues](#)

[What's in it for me?](#)

[Where to deposit](#)



Researchers

How to go about it!

- Retrieve data & publications
- Deposit once
 - Find where to deposit – publications & data
 - Local or thematic repository?

Locate repository via your institution

university of oxford |

Or locate repository in map



zenodo

The place to share your research results

CRIS2014, Rome, 13-15 May 2014



Repositories for institution: University of Oxford

Please use the information/contacts shown below to deposit your publications.

Oxford University Research Archive - ORA

(147518 items - 19/11/2013)

Organizations: [University of Oxford](#)

Website URL: <http://ora.ox.ac.uk/>

OAI-PMH URL: <http://ora.ox.ac.uk:8080/fedora/oai>



First World War Poetry Digital Archive

(7000 items - 19/11/2013)

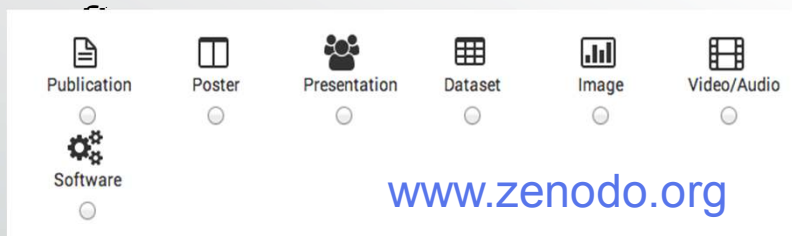
Organizations: [University of Oxford](#)

Website URL: <http://www.oucs.ox.ac.uk/ww1lit/>

Zenodo

“Catch-all” repository: OpenAIRE-CERN joint effort

- Multiple data types
 - Publications
 - Long tail of research data
- Citable data (DOI)
- Links to funding, pubs, data,



www.zenodo.org



API
INTEGRATE YOUR APP VIA
PROGRAMMABLE API.



COMMUNITIES
YOUR DIGITAL REPOSITORY
ON ZENODO.



FUNDING
INTEGRATE INTO
REPORTING FOR RESEARCH
FUNDED BY EUROPEAN COM-
MISSION.



FLEXIBLE LICENSING
NOT EVERYTHING IS UNDER
CREATIVE COMMONS.

H2020: Option to gather, preserve and share
your project's scientific output

Project Coordinators

All project scientific outcome in one place

- Monitor scientific outcome
- Create reports
- Get support
 - Guides
 - Questions to OA experts close to you



A project view



Project: ELISA

Publications Data Statistics

[view all 581](#)

XAFS IN THE TRACKING OF REACTIONS IN AQUEOUS SOLUTION: A CASE OF REDOX REACTION BETWEEN $[AuCl_4](-)$ COMPLEX IONS AND ETHANOL

Paclawski, K.; Sikora, M. (2012)
Projects: ELISA (226716)

In this work the potential application of synchrotron radiation in the studies of reaction kinetics in aqueous phase were presented. After short introduction describing principles of technique and potential application of XAFS for the structural studies of reacting species, the experimental results of

END DATE 31/08/2011

SPECIAL CLAUSE 39 no

ORGANIZATIONS INFN, DESY, HZDR, KIT, Helmholtz-Zentrum Be, DESY, Helm EMBL, Synchrotron SOLEIL, KIT, FOM, CNRS, Synchrotron SOLEIL, HZDR, CNRS, CELLS, EMBL, INFN

MORE INFORMATION [Detailed project information \(CORDIS\)](#)



European light sources activities - synchrotrons and free electron lasers

from 2009-03-01 to 2011-08-31 | [ELISA website](#)

ELISA has the largest and most advanced system of synchrotrons and free electron lasers (FELs): 17 operating facilities, several under construction, some 300 beamlines, 25,000-30,000 users per year from many disciplines (materials, chemistry, biology, medicine, physics, technology and others); this is also the world's largest experimental network. The system is an invaluable resource for all scientists ...

Project details

Project reference: 226716
Status: Completed

Total cost: EUR 11 527 104
EU contribution: EUR 10 000 000

Programme acronym:
FP7-INFRASTRUCTURES
Subprogramme area:
INFRA-2008-1.1.1
Contract type:
Combination of CP and CSA

Results

- Periodic Report Summary - ELISA (European light sources activities - synchrotrons and free electron lasers)

Documents

- Periodic Report - ELISA (European light sources activities - synchrotrons and free electron lasers)

Publications (436)

- Improved scintillation proportionality and energy resolution of $LaBr_3(3):Ce$ at 80 K
Ivan V. Khodyuk - Mikhail S. Alekhin - Johan T. M. de Haas - Pieter Dorenbos
- Structure of the Dimeric Autoinhibited Conformation of DAPK2, a Pro-Apoptotic Protein Kinase
Ashok K. Patel - Ravi P. Yadav - Vilvi Majava - Inari Kursula - Petri Kursula
- Examination of the Coordination Sphere of $Al(III)$ in Trifluoromethyl-Heteroarylalkenolate Complex Ions by Gas-Phase IRMPD Spectroscopy and Computational Modelling
Lisa Brueckmann - Wieland Tyrre - Sanjay Mathur - Giel Berden - Jos Oomens - Anthony J. H. M. Meijer - Mathias Schaefer

A project report



All project publications in HTML or CSV

Publications of Project ELISA

445 publications

Title	Author	Publisher	Publication Date	Permanent Identifier	Access Mode	Embargo End Date
Low-temperature fabrication of layered self organized ge clusters by RF-sputtering	Pinto, S. R. C.	Springer Verlag	2011-04-14	http://hdl.handle.net/1822/15689	OPEN	
The high-resolution structure of the extracellular domain of human CD69 using a novel polymer	Kolenko, Petr	WILEY-BLACKWELL PUBLISHING, INC	2009-01-01	http://dx.doi.org/10.1107/S1744309109043152	CLOSED	
Structural and magnetic study of the annealing of Fe-Co nanoparticles	Desvaux, Celine	ROYAL SOC CHEMISTRY	2010-01-01	http://dx.doi.org/10.1039/b916294a	CLOSED	
Neuroprotective action of FK-506 (tacrolimus) after seizures induced with pilocarpine: quantitative and topographic elemental analysis of brain tissue	Chwiej, Joanna	SPRINGER	2010-01-01	http://dx.doi.org/10.1007/s00775-009-0597-2	CLOSED	
Energy band structure and optical response function of hexagonal B(12)As(2): A spectroscopic ellipsometry and first	Belokobyl, S.	AMER PHYSICAL SOC	2010-01-01	http://dx.doi.org/10.1103/PhysRevB.81.075114	CLOSED	

Still missing: One click away to EC project reporting systems

Project dissemination





EURO-BASIN
BASIN SCALE ANALYSIS, SYNTHESIS AND INTEGRATION

Home Project Description Research Cruise Program Training Meetings & Reports Contact

Publications List:

EURO-BASIN will make 100% of all fully peer-reviewed publications freely available via 'green' open access, thus boosting visibility of the authors, use of the project's research, and providing free access to stakeholders across all sectors.

Publications listed in FP7 e-infrastructure OpenAIRE (incl. 19 publications from a Special Issue in Progress in Oceanography 84, 2010 based on which the project proposal was constructed)

PRIME-XS

Home About PRIME-XS Research Access to Facilities Events Downloads News Intranet Links

Quick Links

- Homepage
- Contact Us
- Project submission

News Menu

- Latest News
- News Archive
- PRIME-XS in the news
- PRIME-XS on the web
- Pictures
- Publications (via OpenAIRE)

Publication List

PRIME-XS publications

- Twitterionic Separation a
- Serena Di Pa
- Collagen stir
- Luigi Margari
- Arjen Scholt
- Proteome-W
- Acetylation
- Brian T. Wei
- Jens C. Ch
- High

Dynamically incorporate publications in your site (HTML)

Close

```
<script
type="text/javascript">
<!--
document.write('<div
id="oa_widget"></div>');
document.write('<script
type="text/javascript"
src="http://vatopedi.di.uoa
.gr/joomla-2.5.3/index.php?
option=com_openaire&view=wi
dget&format=raw&projectId=e
c::226716"></script>');
-->
</script>
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Resolution

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Higher Energy

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graphy

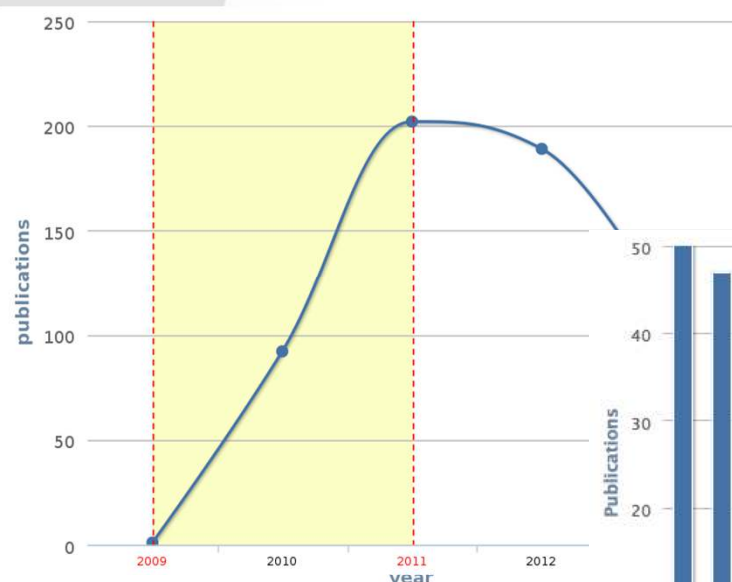
antification

Louwagie -

- Christophe

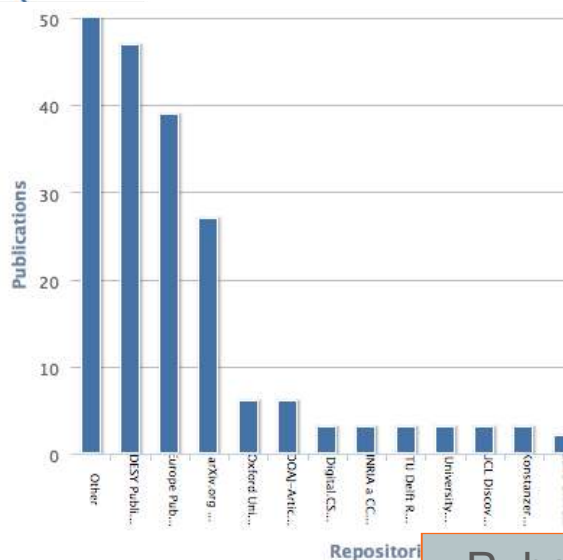
As simple as copying an HTML snippet

Project statistics

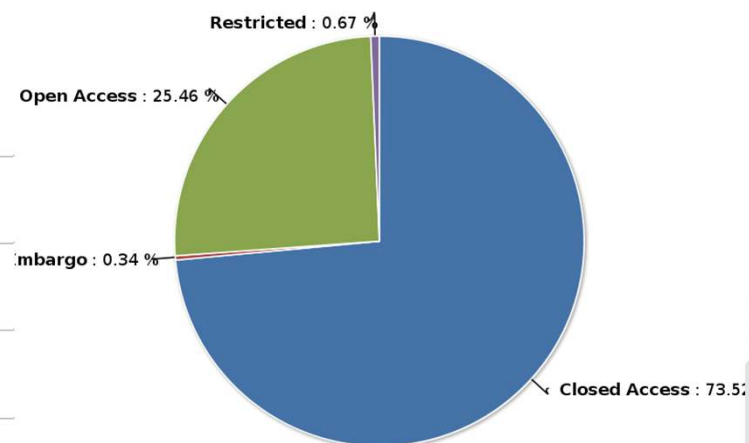


Project productivity
over time

Post project-
monitoring



Pubs location



OA mandate
conformance



Non-Compliance

What if **not all** pubs/data in OpenAIRE?



Researchers or project coordinators

Claim publications in 3 easy steps

1 Identify project

2 Select Publications/Datasets

3 Set access rights

Pub Claim



1 Identify project
2 Select Publications
3 Set access rights

2 Publications / 2 Projects

Select Project
Select from the list or enter the Publication DOI or ORCID (resolved via ORCID)

☒ ECODRIVER
☒ ELISA

☒ A Survey of Context-Aware Cross-Digital Library Personalization
☒ A functionality perspective on digital library interoperability

Funders

Evidence based policy making

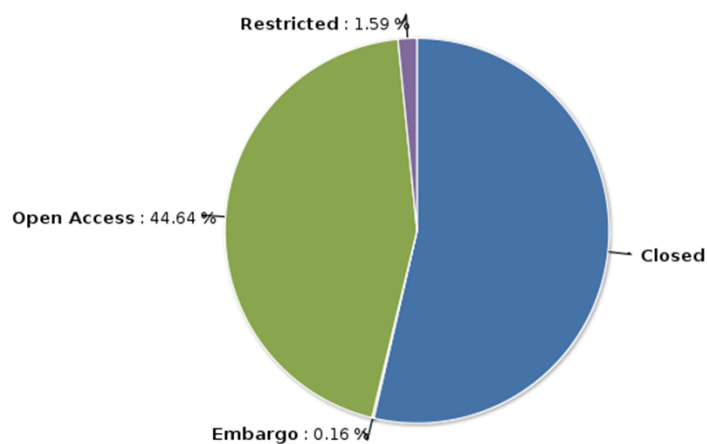


- Overall policy monitoring
- Scientific outcome reporting
- First step in impact assessment
 - Links to advanced indicators
 - Return on Investment

Monitoring OA policy



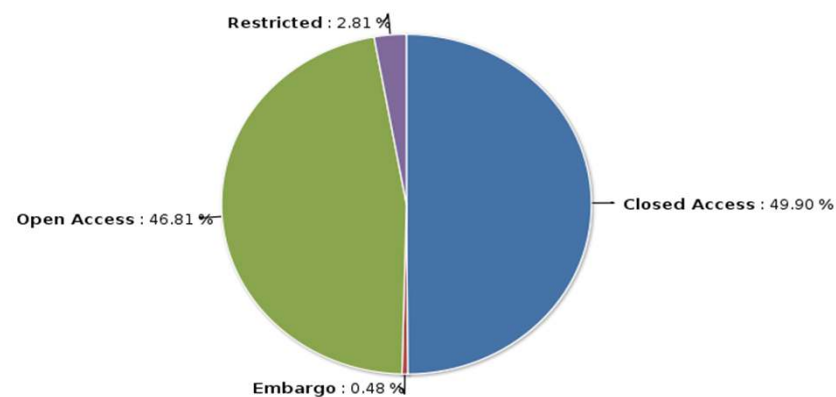
FP7 publications breakdown by access mode



FP7

66K pubs – 7.5K projects

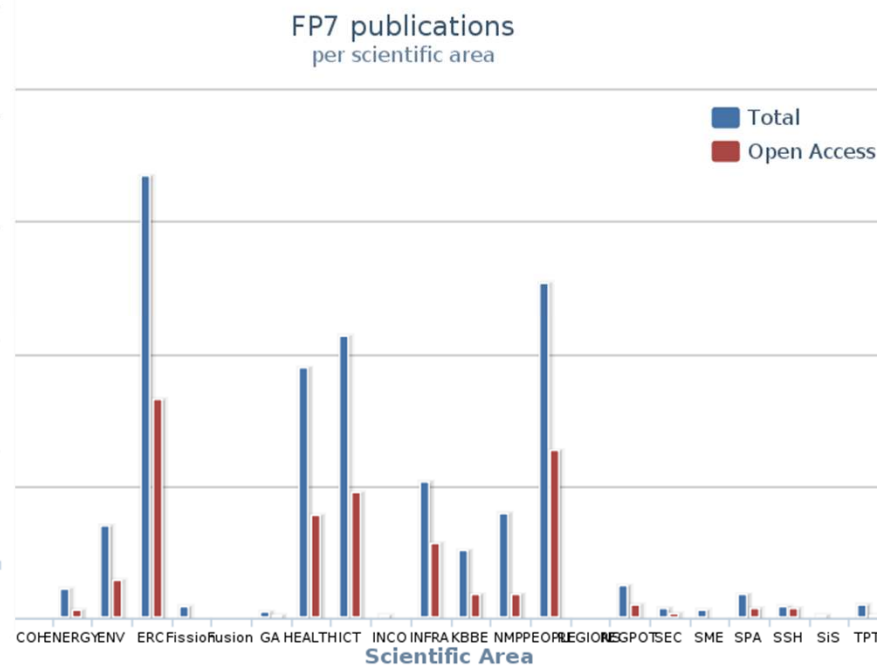
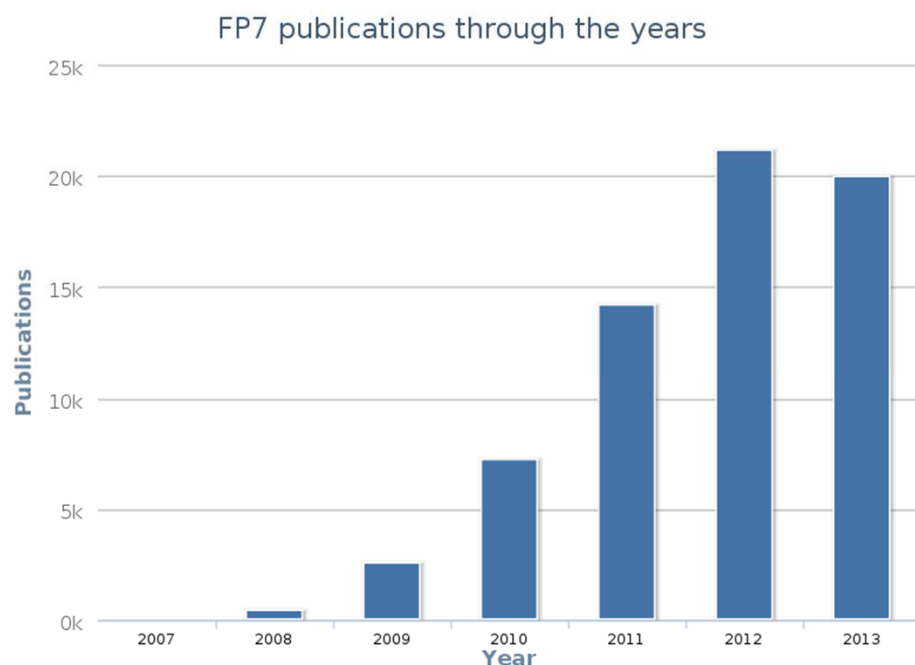
Publications of FP7 projects with SC39 breakdown per access mode



SC39: FP7 OA Pilot

8.5K pubs – 725 projects

Research Output Measures



Beyond the Obvious



Example

FP7 programmes
connected
through scientific
pubs

Project: SPARSEASTRO
Publications:17
Subdivision: ERC

TOPICS:

power spectrum scales bias halo function
noise correlation simulations omb

matrix signal sparse problem vector algor
ithm sampling noise set recovery

sources source energy gev fgl emission g
alactic lat data gamma-ray

cluster clusters mass lensing density radi
us up masses distribution x-ray

SIMILAR TO:

Project: LASSIE
Publications:18
Subdivision: PEOPLE

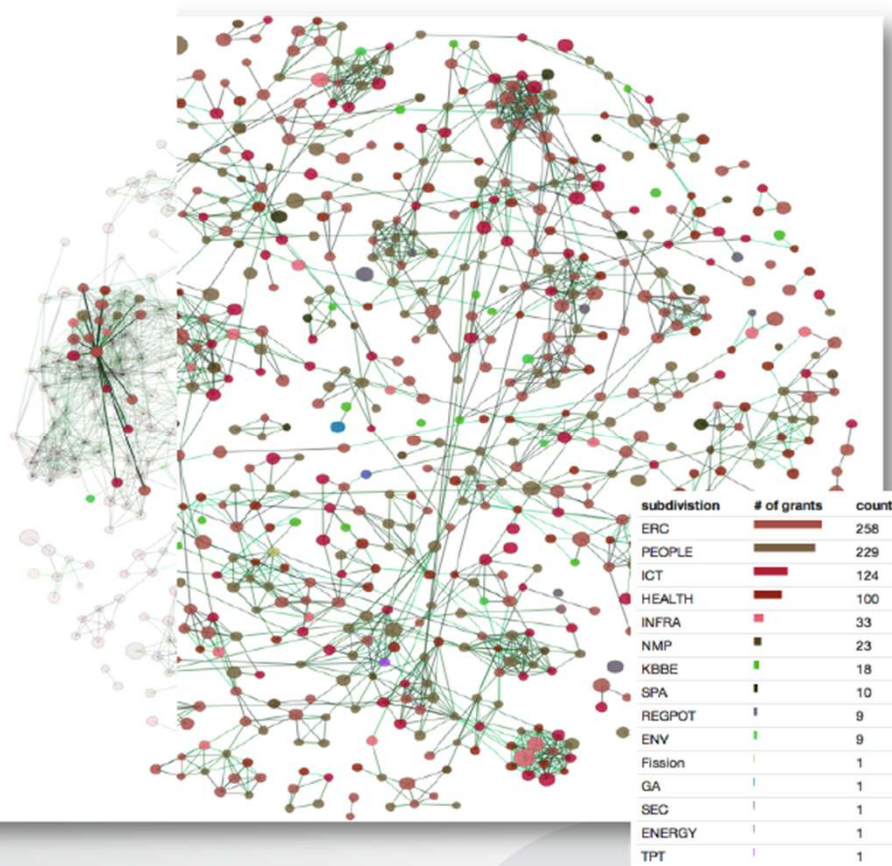
Project: HOTLHC
Publications:17
Subdivision: ERC

Project: GEOMDISS
Publications:14
Subdivision: ICT

Project: FDP-MBH
Publications:11
Subdivision: ERC

Project: CONDMATH
Publications:11
Subdivision: ERC

Project: CONDMATH
Publications:11
Subdivision: ERC



EC OA Mandate Progression

FP7 OA Pilot (2008)

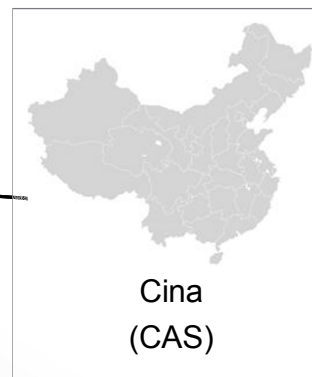
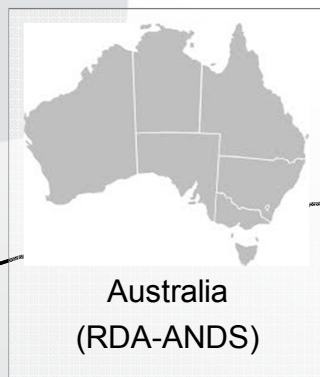
- Grant agreement SC39
- 20% programme areas
- Deposit in Repositories
- OA after embargo period (6-12 months)
- Gold payments during project



Horizon 2020 (2014)

- All grant agreements
- 100% programme areas
- Deposit in Repositories
- Gold payments *after* project end
- Open Data Pilot for a number of programme areas

Similar initiatives around the world



COAR Aligning Repository Networks
Meeting, 20-21 March 2014,
CNR, Roma
(<https://www.coar-repositories.org/>)



Conclusions

- Data-centered science is influencing the entire research “landscape”
- IT tools are required to support different process and actors
- The components of this landscape are not independent and so are tools
- Collaboration is required to evolve IT tools in an harmonised way

Thank you!

**“Open Access from Movement to Reality: Putting the pieces together”
Athens 21-22 May 2014**

 www.openaire.eu
 [@openaire_eu](https://twitter.com/openaire_eu)
 facebook.com/groups/openaire
 linkedin.com/groups/OpenAIRE-3893548

 donatella.castelli@isti.cnr.it