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# OpenAIRE services for Open Research



# Access – Collaboration – Innovation – Participation

Open Science is the practice of science in such a way that others can **collaborate and contribute**, where research data, lab notes and other research processes are **freely available**, under terms that enable **reuse, redistribution and reproduction** of the research and its underlying data and methods.



# What it entails

## Open

**publications**

**research data / FAIR data**

**software / lab books**

**methodologies / protocols**

**educational resources**

**processes (open peer review)**

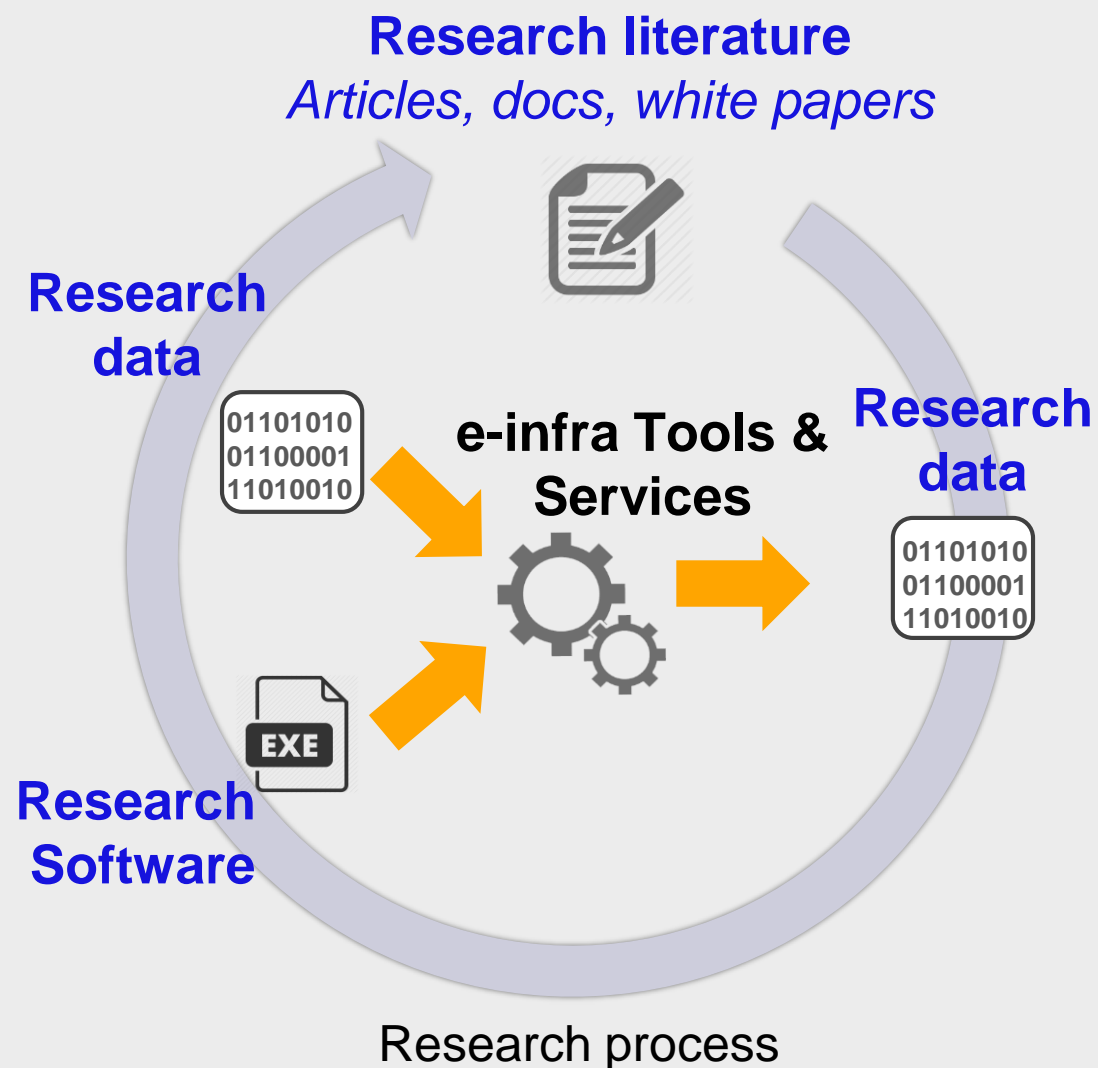
**annotations**

**linked Open Science (provenance & context)**



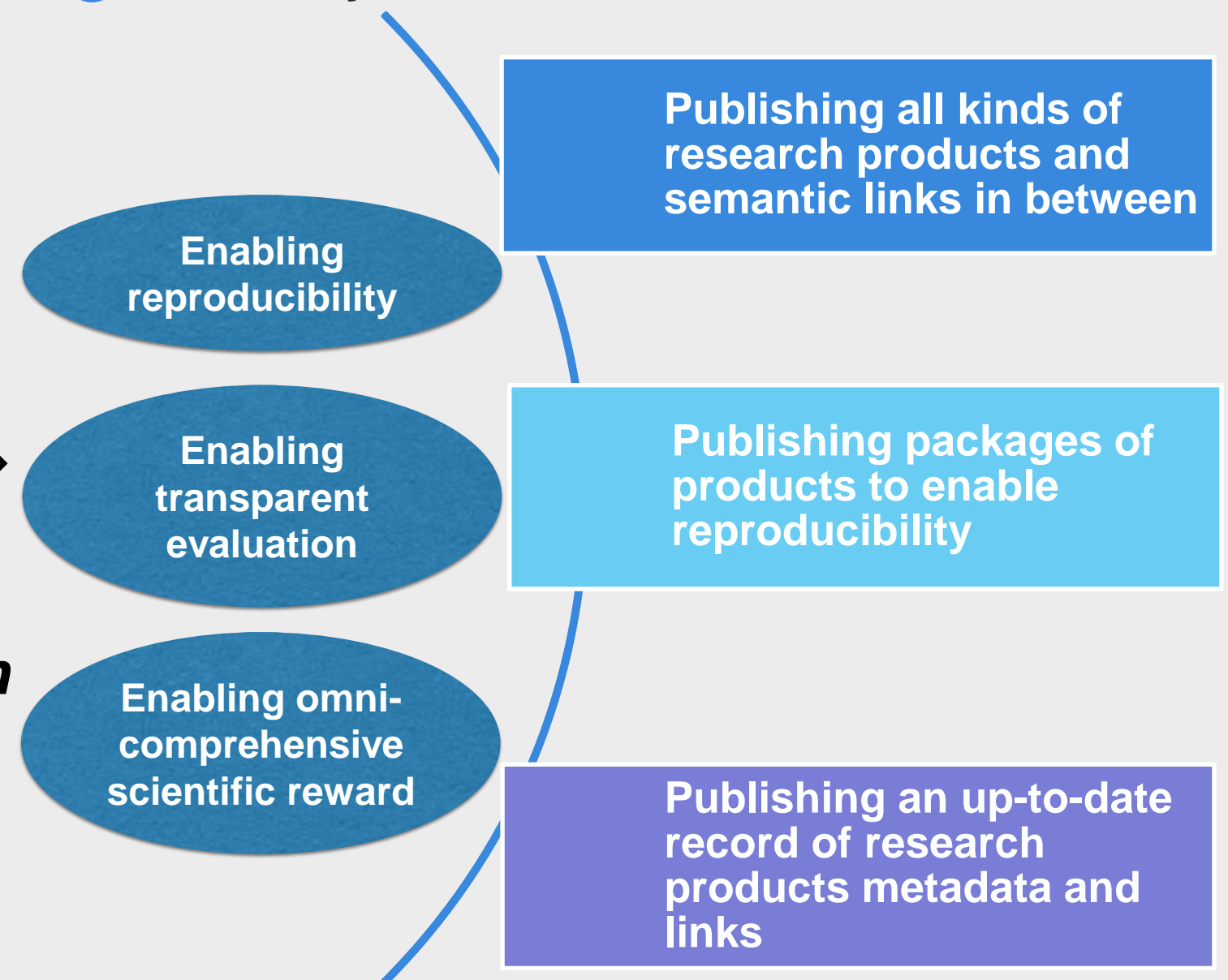
# Open Science publishing: principles and waivers

## > Research Infrastructures



**Open  
Science  
Publishing**

## > Scholarly Communication Infrastructure



# (some of the) Barriers to an effective implementation of Open Science

## Culture

- Research communities lack culture on Open Science publishing

## Focus

- Focus (funding) is not on scholarly communication practices

## Reward policies

- Focus on research literature

## Tools

- Lack of tools for Open Science publishing in Research Infrastructures
- Repository platforms to be updated

## Dispersion

- Research products are scattered across scholarly communication sources

# The OpenAIRE Initiative



## European infrastructure for Open Science



**Networking** infrastructure: Open Access/Science advocacy and support, interoperability, global alignment on Open Science, National Open Access Desks, FAIRness of research data, citizen science, etc.



**Technical** infrastructure: services for monitoring of Open Science, research impact for funders, sharing and reporting for research communities, tools supporting Open Science publishing practices

# Who is OpenAIRE

## 34 National

## Open Access Desks

Organizations experts in OA

## Regional / Topical Experts

4 regional coordinators

3 topical coordinators

50 partners from  
all Europe

## e-Infrastructure / e-Science Service Providers

Infrastructure experts

Metadata experts

Big data technologists

Text & data analytics experts

## Legal Experts

IPR

Data privacy

## Data Communities

EU Research Infrastructures

## Citizen Science

Schools

Citizen science groups

## Open Innovation

Industrial cluster facilitators

Innovation management  
coordinators

# 3 Pillars of Action





# Policies and Training



# Support and Training

## OS policies



- Harmonization for policy makers
- International alignment
- National uptake

## Infrastructure



- Interoperability
- Setup
- Connectivity & federation
- Repositories

## Open Research Data



- FAIR data
- Open data
- Tools
- Legal
- Compliance
- Data Management Plan

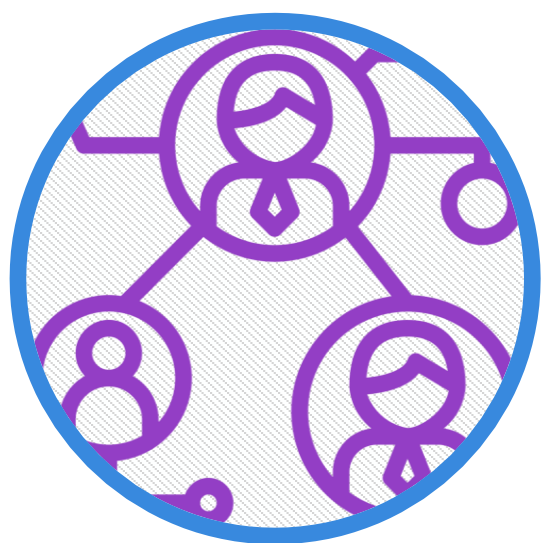
## OA to publications



- Guidelines
- Repositories
- OA Journals
- Licenses
- Compliance
- New models



# NOADs: A key vehicle in policies and training



**Outreach**



**Support**



**Training**



**Policy**

**10** national workshops **1048** participants  
**170** conferences attended, presented in **96**  
**9** funder mandates  
**4109** repositories, **1720** OA journals contacted

**2018**

**45** webinars **2790** participants  
**55** f2f training events **1637** participants  
**8** train-the-trainer events **155** OS trainers

**2018**

# Support and Training

Distributed and hierarchical training: *train-the-trainers*

NOADs → National / research infras, organizations → Researchers



## HELPDESK

- Ask a question
- FAQs



## RESOURCES

- OA guides
- Copyright issues
- Factsheets



## TRAINING

- Webinars
- Workshops







# Technical Services

# Services for all stakeholders







Providing an **open metadata** research graph of interlinked **scientific products**, with **access rights information**, linked to **funding information** and **research communities**



BETA

# OpenAIRE Research Graph



CONNECT PROVIDE EXPLORE

DEVELOP MONITOR



110mi publications, 10mi research data, 7mi other  
research products, 180K software  
from 9,900 content providers and 29 funders linked together  
for an integrated discovery of research outcomes



Data

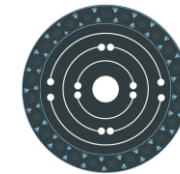
products



End-user feedback Deduplication Harvesting metadata Mining

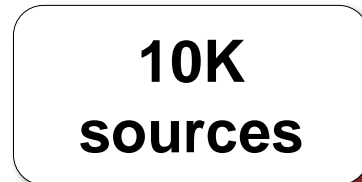




[illegible]

**DARIAH-EU**

**... and more**



OpenAIRE  
RESEARCH  
GRAPH



**and more**



## ... and more



## ... and more

# Enriching metadata

## Full-text mining

11Mi OA  
full-texts

### Mining output

- Text-mined links
  - 400Mi
  - Links to projects, software, datasets, research infra/communities, similarities
- Text-mined values
  - 178Mi
  - Citations, abstract, subject classification

## De-duplication

Metadata records corresponding to equivalent objects are merged

### Harvested records

450Mi



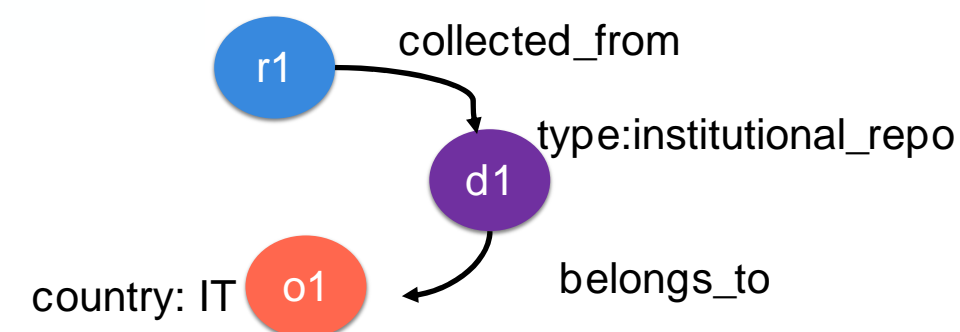
110mi publications, 10mi research data, 7mi other research products, 180K software  
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for an integrated discovery of research outcomes



## Info propagation

Project, countries, communities/infrastructure, from publications to other products

### Example



Coming soon:  
propagation of ORCID



# Interoperability and decentralization

## Interconnecting Research Graphs



CONNECT PROVIDE EXPLORE

DEVELOP MONITOR



## Decentralization



# BETA Graph Open Consultation

- **November 2019:**
  - OpenAIRE Research Graph open for consultation
  - Collecting feedback via Trello
- **December/January 2019:**
  - OpenAIRE Research Graph in production

<http://beta.explore.openaire.eu>





# Live demo of services



@openaire\_eu

# Thank you!

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