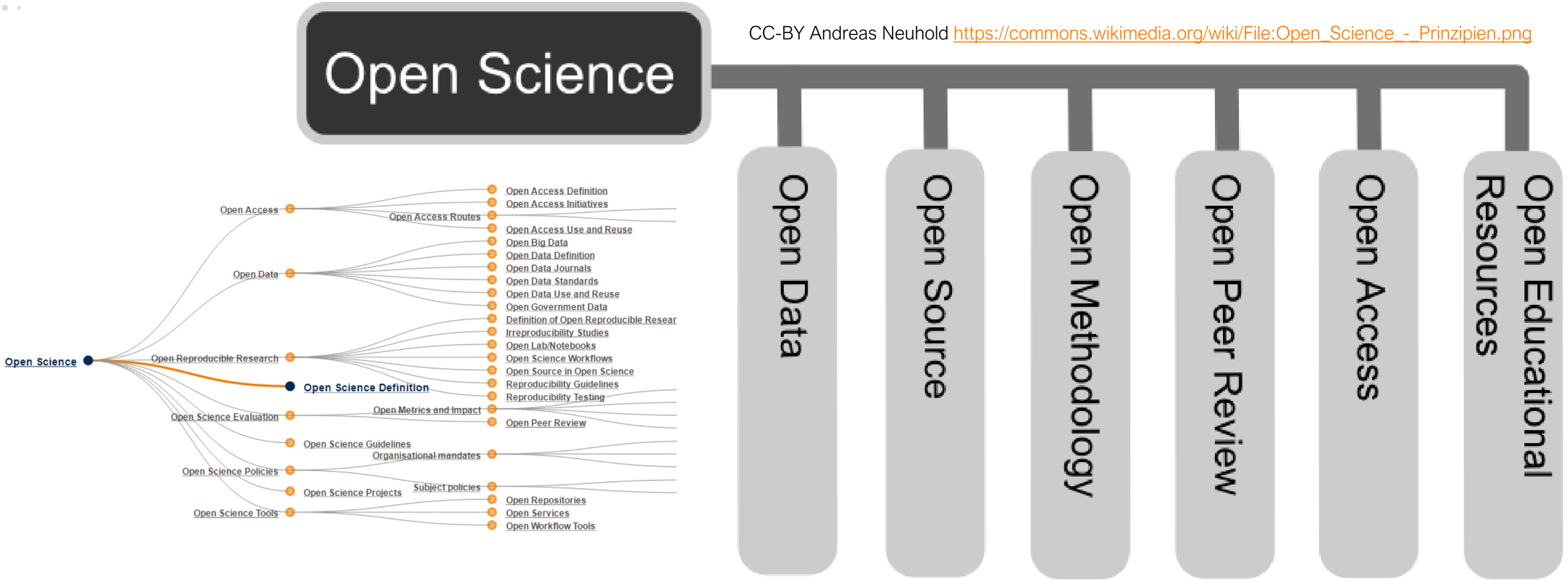
Alessia Bardi

Institute of Information Science and Technologies - CNR

Open Science Publishing

OpenAIRE services for research communities

@openaire_eu

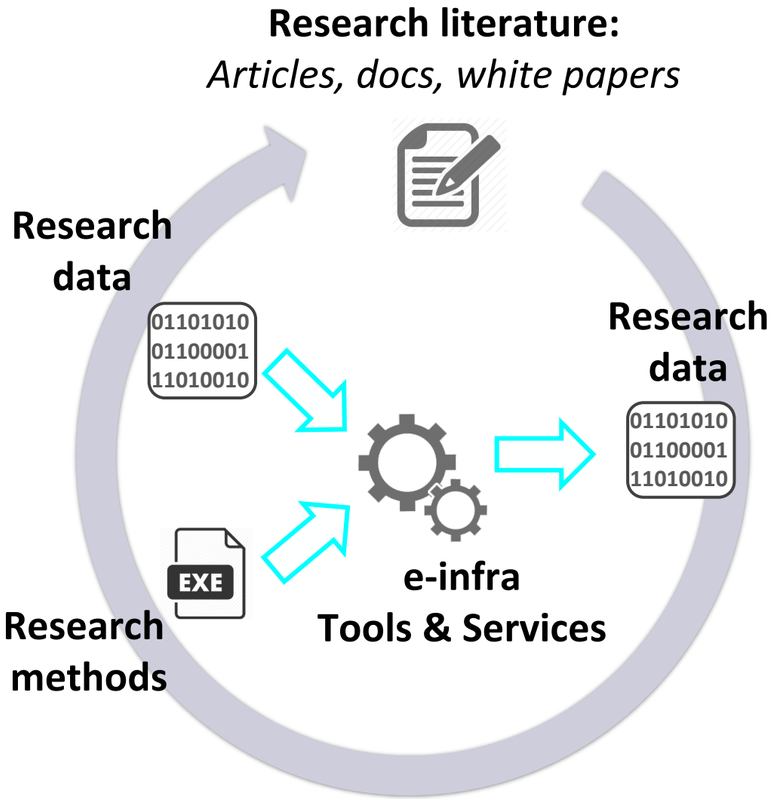


CC-BY Andreas Neuhold https://commons.wikimedia.org/wiki/File:Open_Science_-_Prinzipien.png

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.

Open Science publishing

Supporting reproducibility and transparent evaluation



Scientific process

Publishing

Repeat/Reproduce/Reuse and Evaluation

What does Open Science Publishing mean?

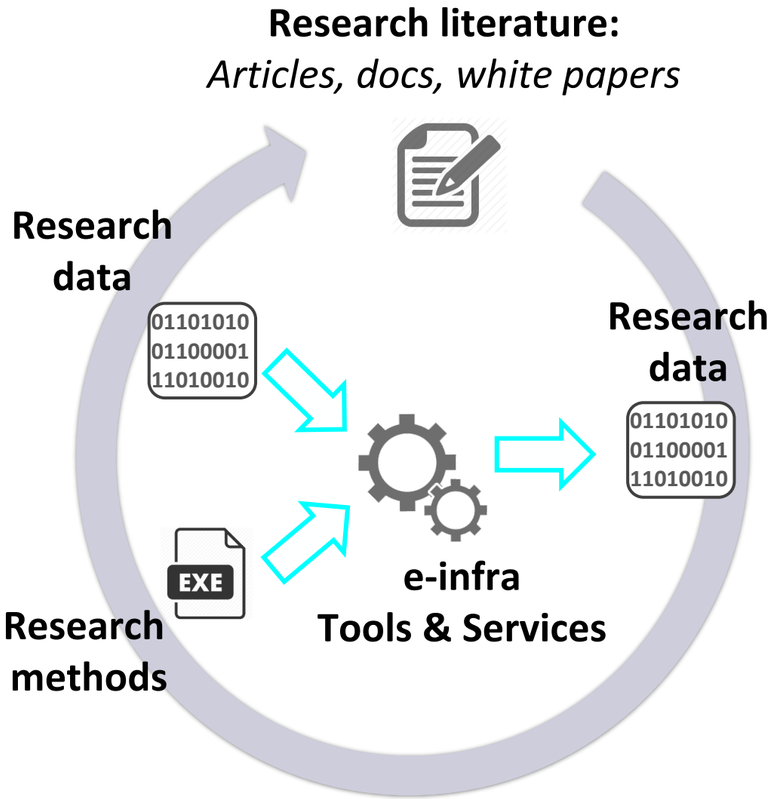
Research Communication Infrastructure

OpenAIRE

European Commission

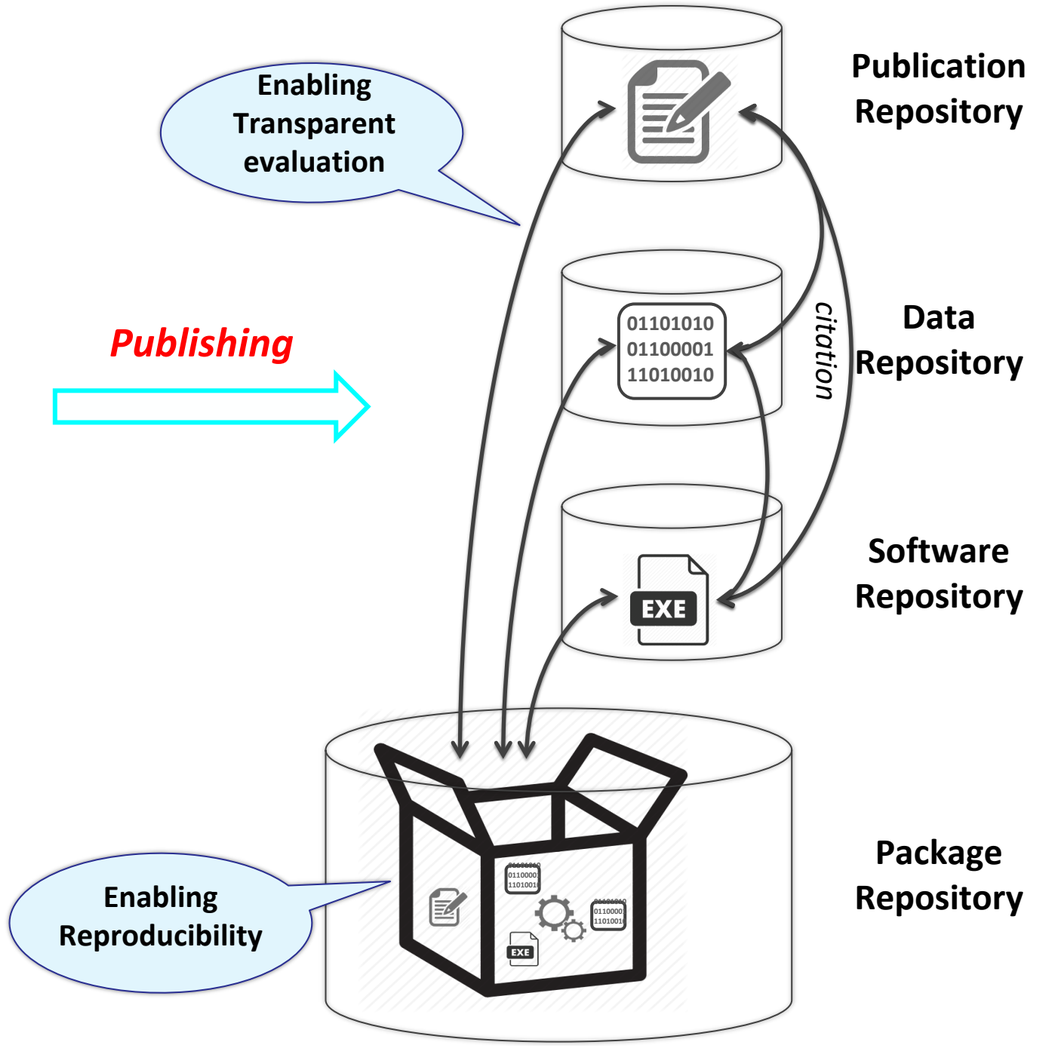
Open Science publishing

Supporting reproducibility and transparent evaluation



Scientific process

Publishing



Other products:
methods, workflows, protocols

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Open Science publishing: enabling factors

Enabling transparent evaluation

Enabling reproducibility

Publishing of all kinds of research artefacts

Publishing packages of artefacts

Publishing an up-to-date record of research artefacts metadata and links

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Why should I embrace Open Science publishing principles?

- **Because your work deserves it**
  - The article you publish is just the **tip of the iceberg**!
  - You designed and implemented software, models, tools, algorithms, workflows, pipelines, etc.: where are they in the scholarly communication?
- **Because you want to be credited**
  - Scientists started to publish their works not for evaluation, but for **credit**.
  - Impact factor came only after the ‘60s and has been misused since its conception…
- **Because advancement of science requires it**
  - New knowledge is created from existing knowledge and scholarly communication should support the **assessment** of new knowledge: how can you build on top of it otherwise?

Open Science Publishing: barriers

Repositories lack support to Open Science publishing	No support for integration of repositories for software, methods, or packages
	Minimal or no support for links between artefacts in different repositories
	No support for keeping repositories with up-to-date links between artefacts
Research communities lack culture of Open Science publishing	Lack of e-infrastructure and tools for Open Science: e.g. repository limits above, exchange formats, workflows
	Difficulties to **self-organize** and **sustain** research communication solutions: e.g. identify the problems, see the benefits, devise solutions, applying economy of scale

The OpenAIRE Infrastructure

European (and beyond) infrastructure for Open Access and Open Science

Networking infrastructure: Open Access/Science advocacy and support, global alignment and interoperability, etc.

Technical infrastructure: services for monitoring of Open Access/Science and Research Impact for funders and communities

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OpenAIRE partners and liasions

EMBL-EBI

ands AUSTRALIAN NATIONAL DATA SERVICE

MENDELEY

PLOS

DataCite International Data Citation

egi

COAR Confederation of Open Access Repositories

FECYT FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

Ministerio de Ciencia, Tecnología e Innovación Productiva
Presidencia de la Nación

DRYAD

LA REFERENCIA visibilizando LA ciencia
RED FEDERADA DE REPOSITORIOS INSTITUCIONALES DE PUBLICACIONES CIENTÍFICAS

ORCID Connecting Research and Researchers

OpenDOAR

RDA RESEARCH DATA ALLIANCE

FOSTER

re3data.org REGISTRY OF RESEARCH DATA REPOSITORIES

PANGAEA

PASTEUR4OA

medanet Mediterranean Open Access Network

JISC

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

crossref

EUDAT

SHARE

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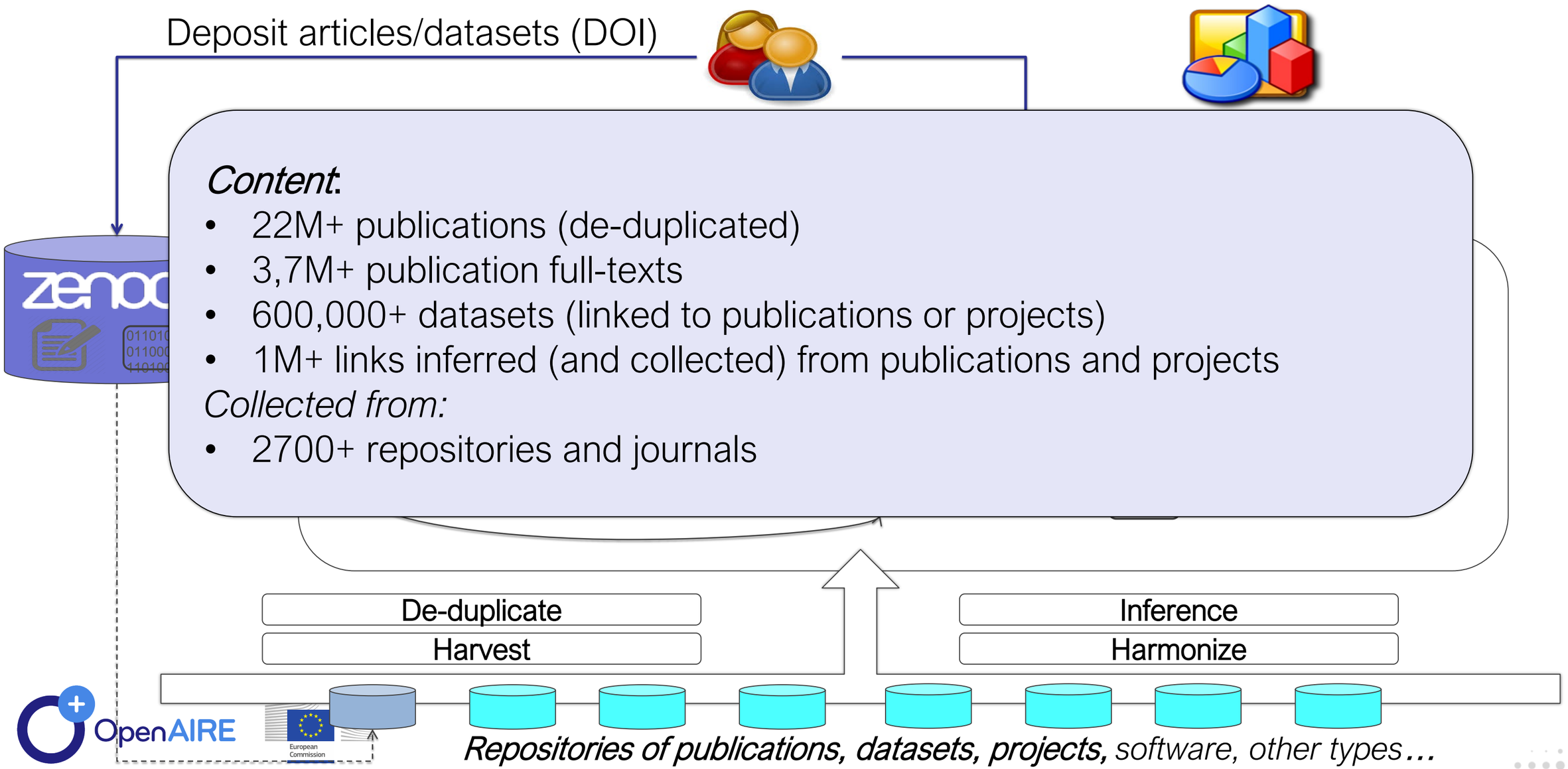
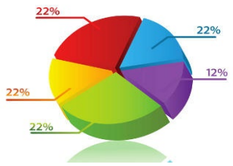
This is where you type in the event

OpenAIRE technical infrastructure



Open Science as-a-Service (OSaaS)

Researchers



Search-Browse-Monitor-
Research Impact

Research Community Dashboard

Publishing tools

Software

Articles

Methods

Projects

Data

Packages

OSaaS

OpenAIRE

Catch-All-Notification Broker

Subscription & Notification

Articles

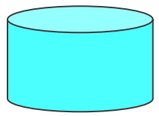
Data

Content Providers

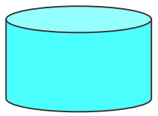
Harvesting

Other

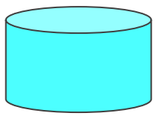
Software



Articles



Projects



Data

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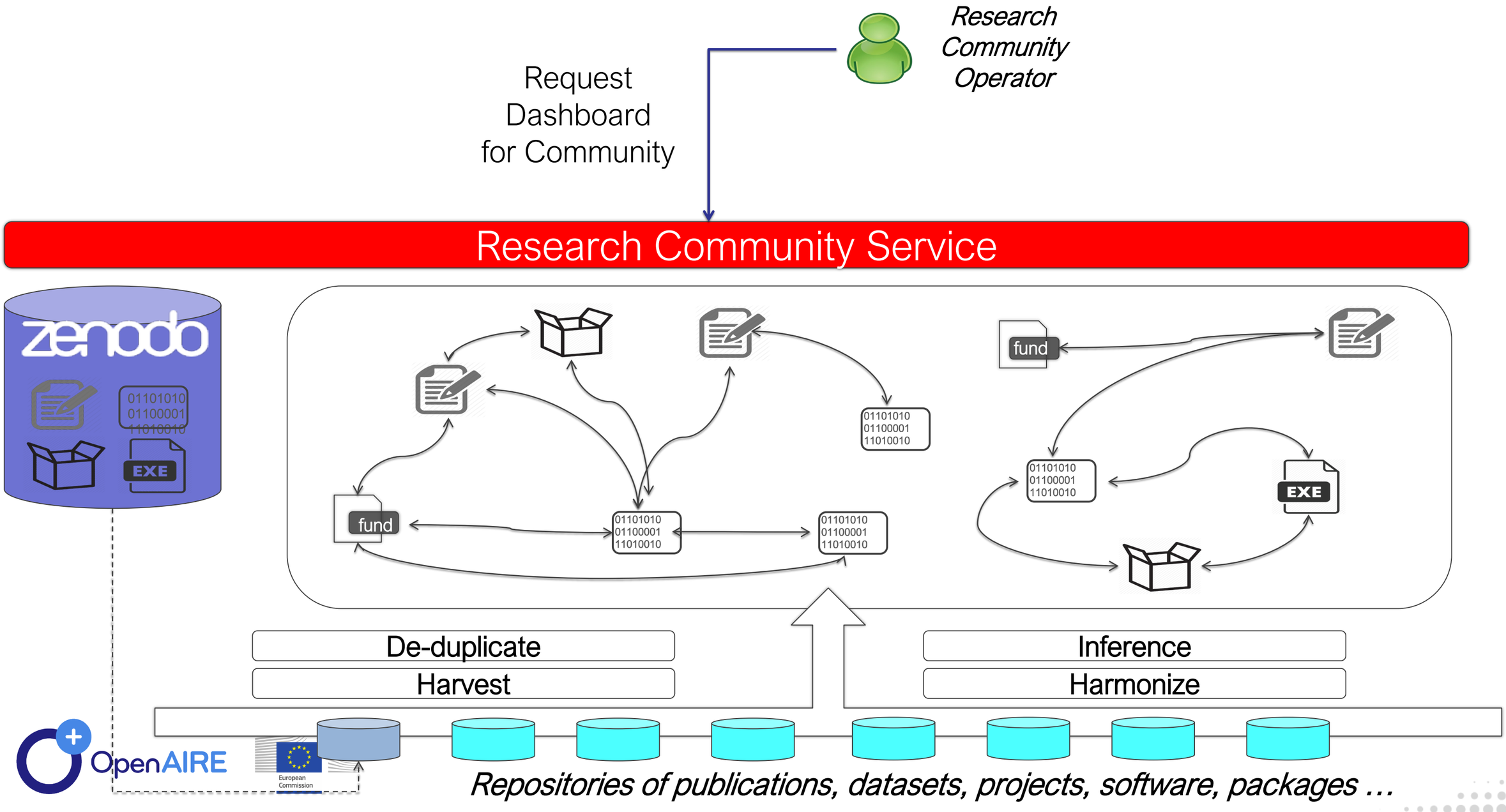
Open Science as-a-service

Research Community Dashboard

Research Community Dashboard



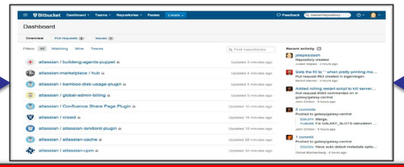
Research Community Dashboard

Researchers

- Deposit (DOI)
- Claim

Research Community Operator

- Manage users
- Configure stats
- Configure inference



Research Community Service

zenodo

01101010
01100001
11010010

EXE

fund

Deduplicate

Harvest

Inference

Harmonize

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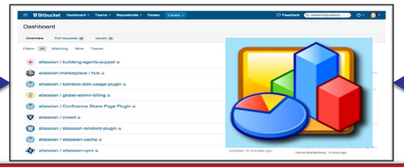
Repositories of publications, datasets, projects, software, packages …

Research Community Dashboard

Researchers

- Deposit (DOI)
- Claim
- Stats: research impact & OA



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Research Community Service

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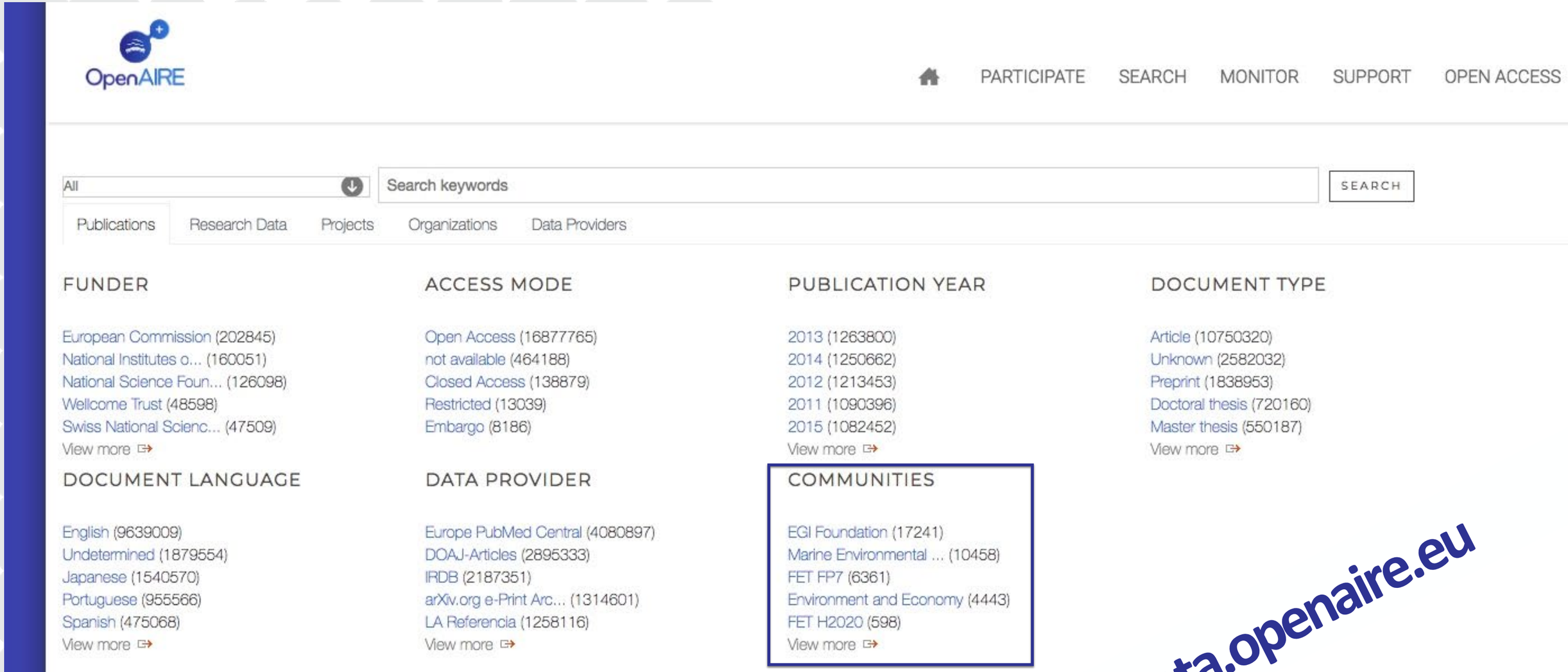
Research Communities in OpenAIRE



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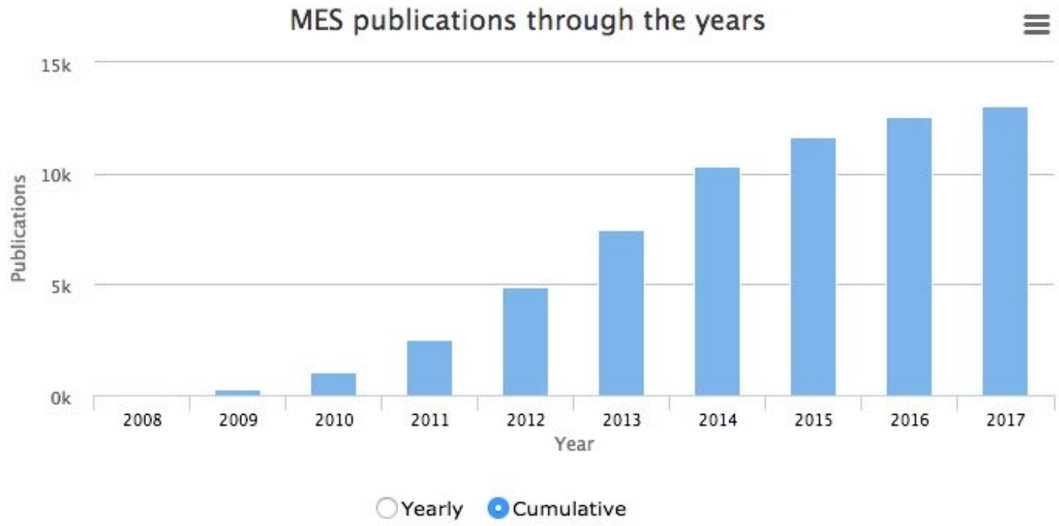
Research Communities in OpenAIRE

MES - Marine Environmental Science

Updated on 14 November 2017

13,839 publications from 2,327 projects.

9,506 are OA , 283 are restricted and 33 are still in embargo Graph



Statistics

OA in Europe

EC FUNDING

FP7

H2020

ERC

FET

EU FUNDERS

FCT

NWO

MESTD

SFI

MZOS

CONICYT

Tubitak

RCUK

RESEARCH COMMUNITIES

EGI

MES

ABOUT PUBLICATIONS

PUBLICATIONS PER PROJECT

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Research Communities and Open Science benefits

Common repository for publishing (deposition) of datasets, methods, and packages

- Can continue their publishing practices, but, if needed, they have support for deposition of any artefact

Collaborative curation of a community-specific research communication domain

- Community information space to share, discovery, and reuse (reproduce) scientific results

Research impact and statistics

- Scientific reward strategies can be developed

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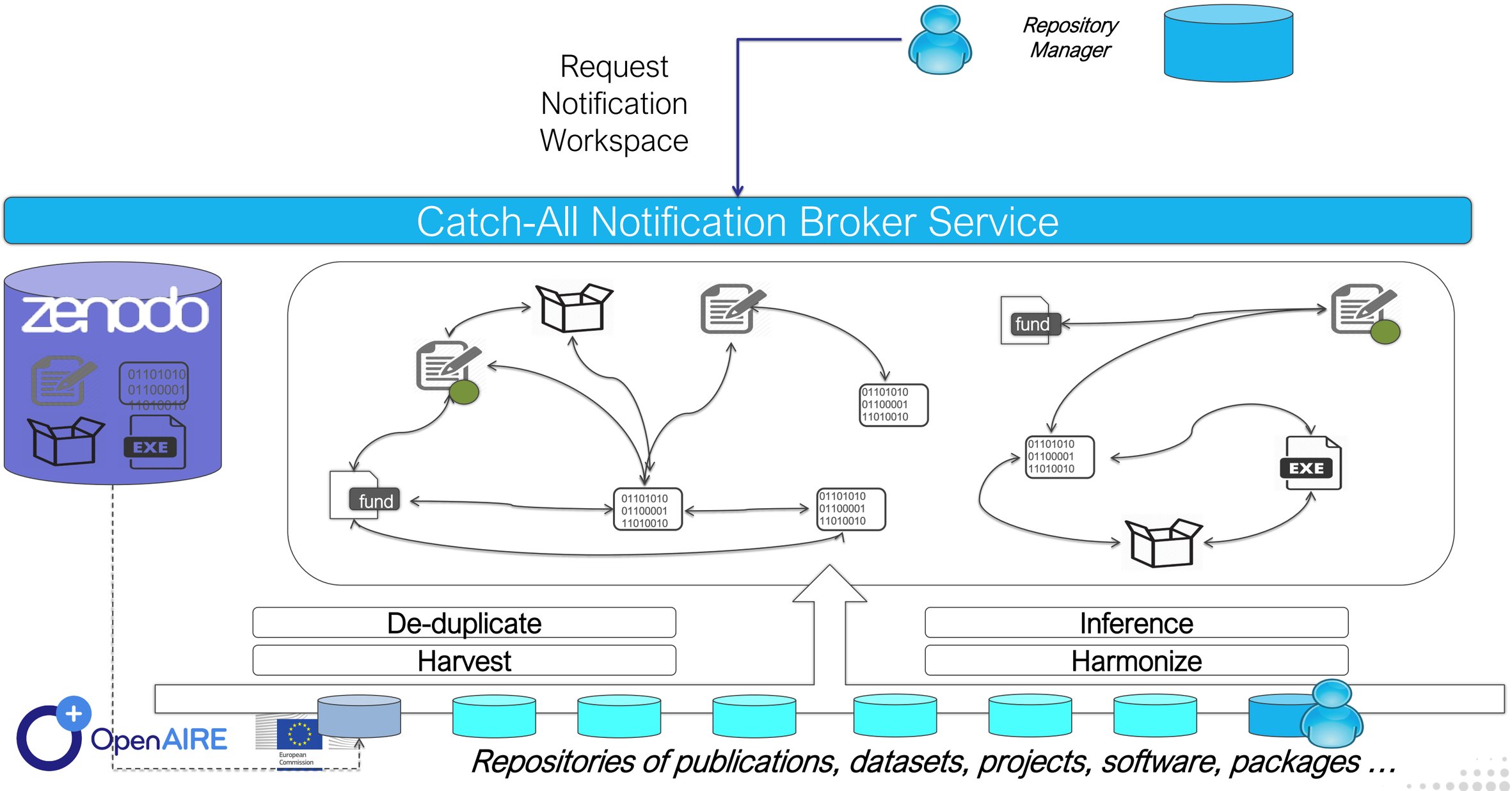
Open Science as-a-service

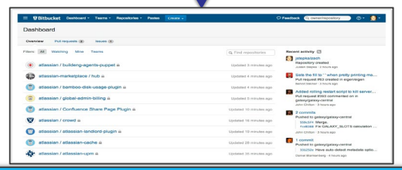
Catch-all Notification Broker Service

Subscription and Notification for Repositories



Subscription and Notification for Repositories

- Subscription: enrichment or additions to repository
- Notification management



Repository Manager

Catch-All Notification Broker Service

zenodo

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EXE

fund

De-duplicate

Harvest

Inference

Harmonize

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Repositories of publications, datasets, projects, software, packages …

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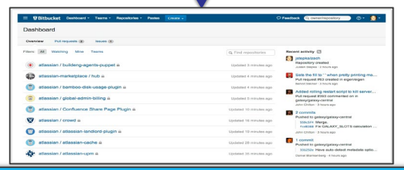

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Catch-All Notification Broker Service

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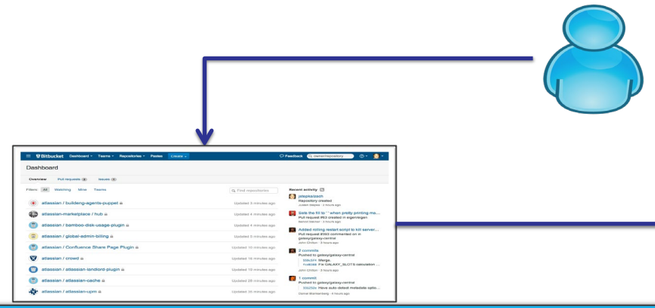
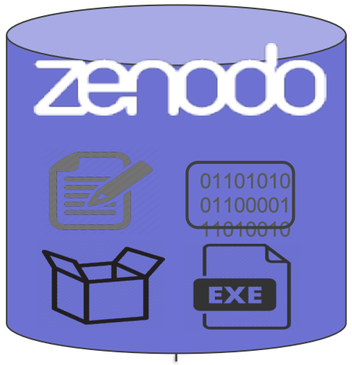
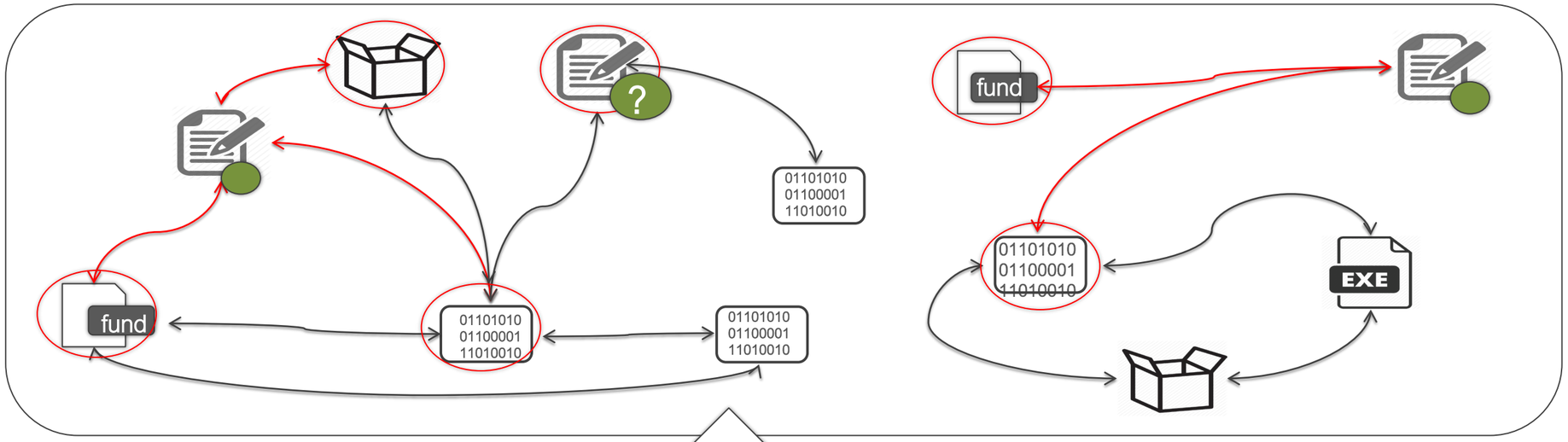


Repository Manager

Notifications
- Mail
- APIs
- UIs

Catch-All Notification Broker Service





Deduplicate
Harvest

Inference
Harmonize

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Repositories of publications, datasets, projects, software, packages …

Repositories: Open Science benefits

Extending repository metadata models to Open Science

- Enabling addition of links to artefacts of any kind

Keeping their **collection up-to-date: enrichments and additions**

- “Almost real-time” exchange of information: notifications about links to other artefacts, missing properties, and missing artefacts

Fostering notification-based and federated dissemination of knowledge

- Enabling repositories to be notified of content of interest, enabling construction of research-focused aggregators by notifications

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OpenAIRE towards Open Science

Research Community Dashboard
Catch-All Notification Broker

Served on-demand according to the OSaaS approach

Customizable by different disciplines and providers, each with different practices and maturity levels

Framework aligning communities and repositories on practices addressing **transparent evaluation** and **reproducibility**

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Thank you!

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www.openaire.eu

Suggested readings

- Stern, N., Guédon, J., & Jensen, T. (2015). Crystals of Knowledge Production. An Intercontinental Conversation about Open Science and the Humanities. *Nordic Perspectives on Open Science, 1*, 1–24. http://dx.doi.org/10.7557/11.3619
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- Nielsen, Lars Holm. (2017, May). Sharing your data and software on Zenodo. Zenodo. doi:10.5281/zenodo.787445
- Check-out the OpenAIRE webinars at: https://www.openaire.eu/webinars/

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