PROGETTAZIONE DI DASHBOARDS E REPORTISTICA PER IL MONITORAGGIO DELL'OPEN SCIENCE

[Reporting and dashboards' design for Open Science monitoring]

GenOA Week 2023 – Valutazione della ricerca [Research Evaluation]

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New ecosystems to monitor research aspects

- Need of new ecosystems comprehensive of the many research aspects that should be part of an assessment.

- Need of new ecosystems that are made of both:
    - governing aspects & policies
    - enabling technologies and infrastructures
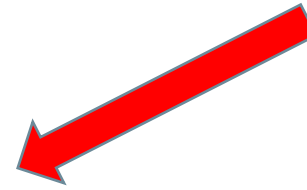
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THE FOCUS OF THIS TALK

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Synergy among existing systems

A new ecosystem must leverage from existing systems:

- Metadata of any kind must be accessible programmatically.

- Follow solid implementation processes and grant sustainability of the ecosystem.

- Rely on the specific features and tools of a given institutional environment.

- Augment paper's metadata in bibliographic databases and other sources of information (e.g., Open Science, Altmetrics, ...).

Enabling technologies at IIT

- Collective effort to make institutional systems interoperate (HR, Technology Transfer, Projects and Grants Office, publications' metadata repository, …).

- Development of a platform to collect and show all the research-related aspects, similar to a CRIS (Current Research Information System): **SCIENTILLA**.
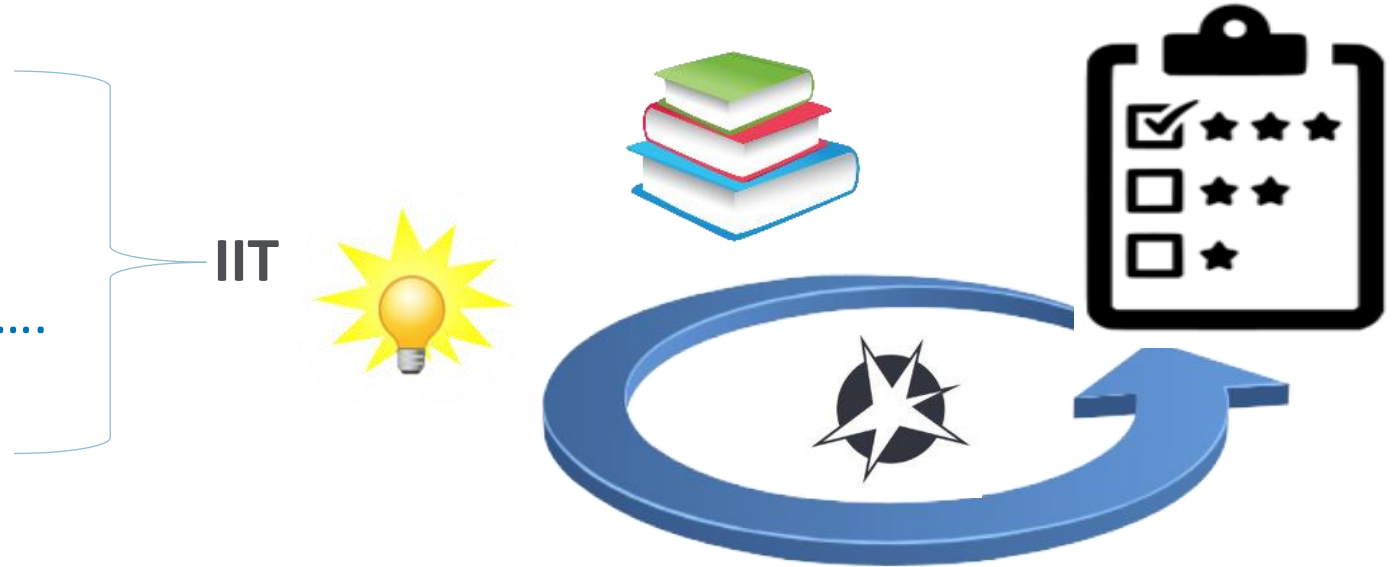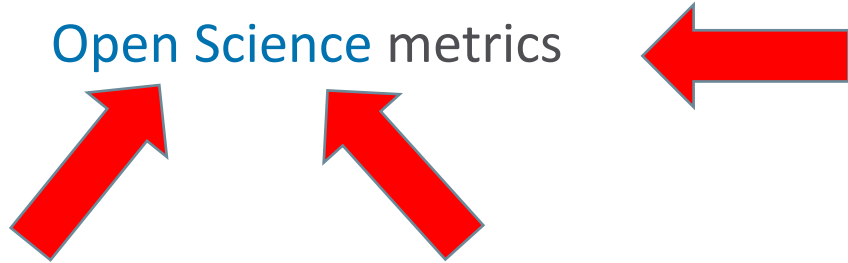

- Reports from effective data mining and data visualization of data from heterogenous sources.
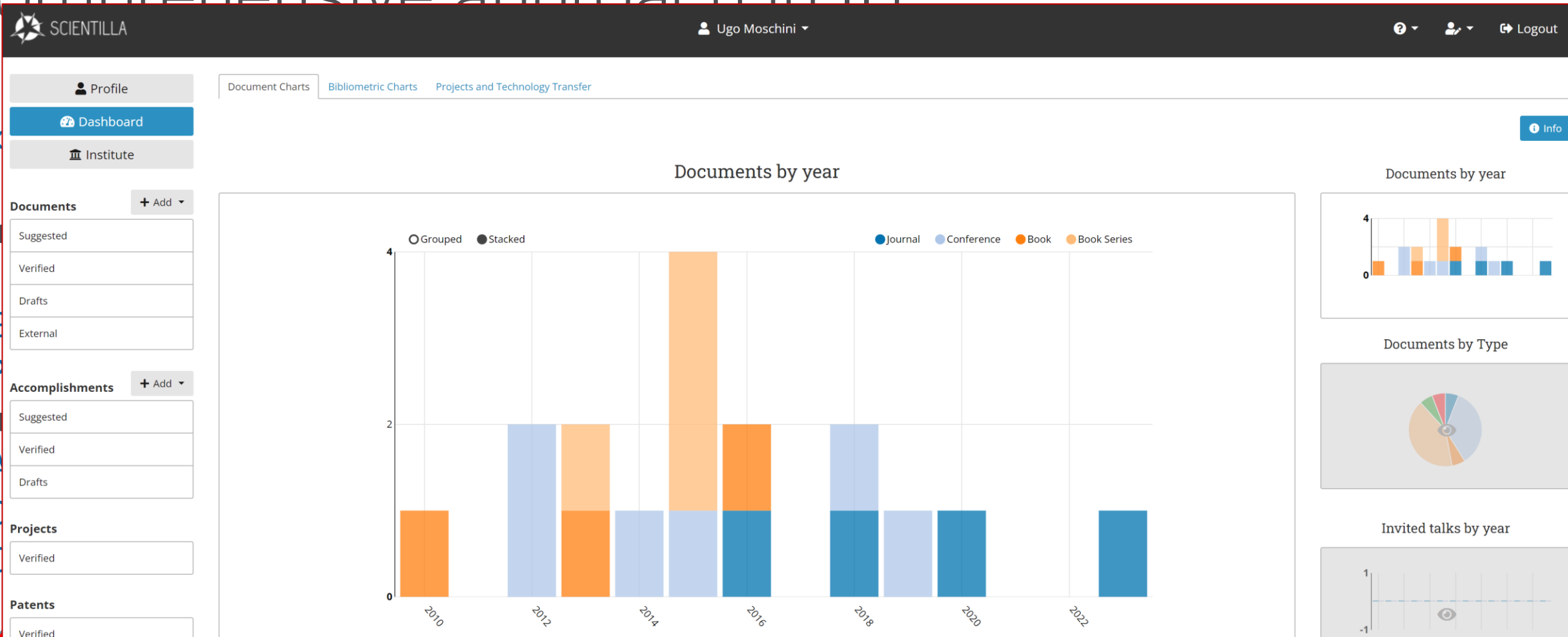
Comprehensive approach in IIT

Recognition of many indicators: not only publications and bibliometrics! On our way to add OS metrics...

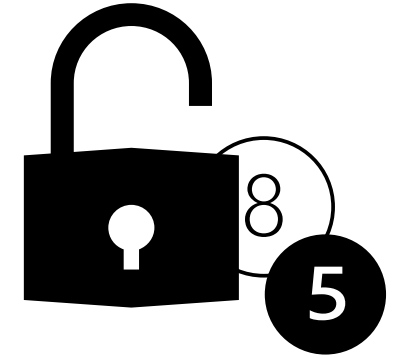Peer review, panels of experts, defined procedures are supported by several indicators, including:

- Grants won and funding statistics
- Patents & Technology-transfer
- Industrial partnership and start-ups
- Awards, Editorship, Training course, ...
- Dissemination activities
- Open Science metrics

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Comprehensive approach in IIT

Reco

Peer

- G
- P
- I
- A
- D
- C

SCIENTILLA

Ugo Moschini ▾ | Logout

👤 Profile
🖥 Dashboard
🏛 Institute

Document Charts | Bibliometric Charts | Projects and Technology Transfer

ℹ Info

Documents + Add ▾
Suggested
Verified
Drafts
External

Accomplishments + Add ▾
Suggested
Verified
Drafts

Projects
Verified

Patents
Verified

Documents by year

○ Grouped ● Stacked

● Journal ● Conference ● Book ● Book Series

2010 2012 2014 2016 2018 2020 2022

Documents by year

Documents by Type

Invited talks by year

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Open Science indicators

- Open science has emerged as a powerful trend in research policies everywhere.

- OS indicators aim to provide data and insight needed to support the implementation of these policies.

- Assess the impact in OS in several ways (FAIR data, reproducibility of experiments, sharing datasets, open access to publications, ...).
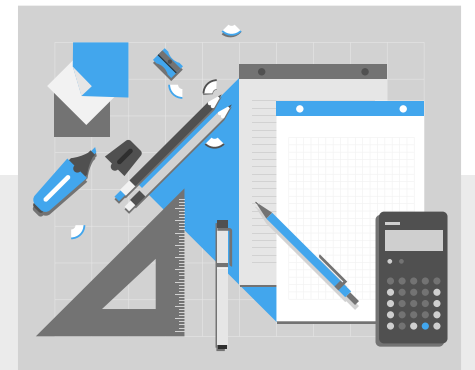
New ecosystem: "*enabling technologies*"

- Proper technologies and tools to compute OS measures are needed.

- Understanding how OS data are collected and put together is key: which metrics are relevant?

- Consider which metrics are computable with the data, tools and systems at hand.

Recognition and monitoring of OS practices

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Expanding dashboards and reports to include OS

- Add another dimension to the analysis of the research output.

- Design dashboard first and foremost with an informative purpose for both management and scientists: raise awareness.

- Try to consider all the multifaceted aspects of OS *(ideas: open access publications breakdown, show shared data, link open code, FAIR assessment, breakdown of repositories used, open educational resources, etc...).*

- Important to link scholarly output to shared datasets: it's all part of research activities, seeing them together helps!

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...solutions we are exploring

Integrate Open Access links for manuscripts

- Open Access versions of the scientific papers are automatically fetched using an integration with OpenAIRE.
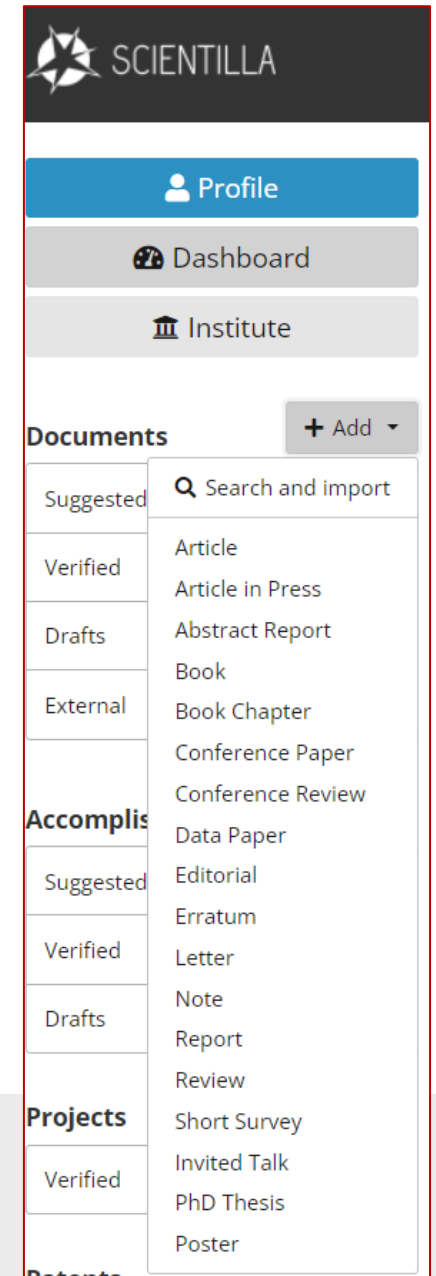
- Links to papers shown on IIT public website.

Include information about pre-prints?

- The IIT CRIS Scientilla in principle can be modified to accept pre-print contributions in its database.

- Reasoning on the possible source for this information *(manual insertion, APIs of preprint servers, Scopus/Clarivate services, other services – OpenAlex/OpenAIRE/Crossref/…?).*

Picture from Bianca Kramer's https://github.com/OpenScienceMOOC/Module-6-Open-Access-to-Research-Papers/issues/25#22

Get Open Access status of IIT publications

- Unpaywall.org by OpenResearch: open database of free scholarly articles, with metadata.

- Development of scripts to obtain from the Unpaywall APIs the Open Access (OA) status of a publication (Green, Bronze, Gold, Hybrid, Closed).

- Currently used to keep track of the quantity and the type of OA of the IIT publications.

- Detailed analysis: tailored to our CRIS Scientilla and augmented with its metadata.

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Assessing FAIRness of datasets

F-UJI | Automated FAIR Data Assessment Tool

- The F-UJI assessment is based on 16 out of 17 core FAIR object assessment metrics developed within FAIRsFAIR EU project.

- A few tests performed on the datasets shared in the IIT Dataverse repository, to get results about the FAIRness of a shared dataset in an automatic way, using the F-UJI APIs.

- Ideas: monitor the FAIR status of the datasets shared on our repository: a Dataverse institutional repository was setup on IIT premises in 2021. *Useful for data stewards as well*.

Summary:

	Score earned:	Fair level:
Findable:	6.5 of 7	moderate
Accessible:	1 of 3	initial
Interoperable:	3 of 4	moderate
Reusable:	4 of 10	initial

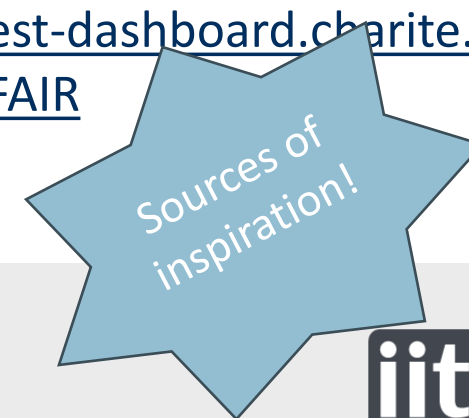60 %

Monitoring openly shared datasets and code

- Involvement in a "Visiting Fellowship" project between IIT and the QUEST (Quality | Ethics | Open Science | Translation) Center for Responsible Research at the Berlin Institute of Health, funded by the Berlin University Alliance.

- QUEST has experience in dashboard design, with OS dashboards already available at https://quest-dashboard.charite.de on:

  - ➢ Open Access and Responsible Research dashboards: https://quest-dashboard.charite.de/#tabStart
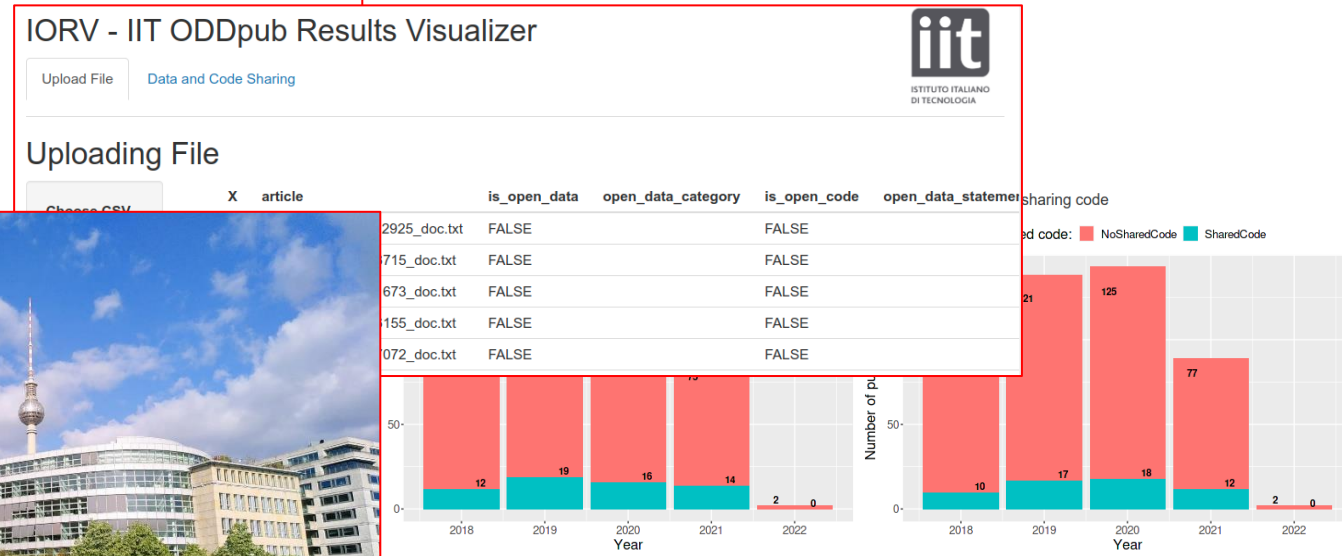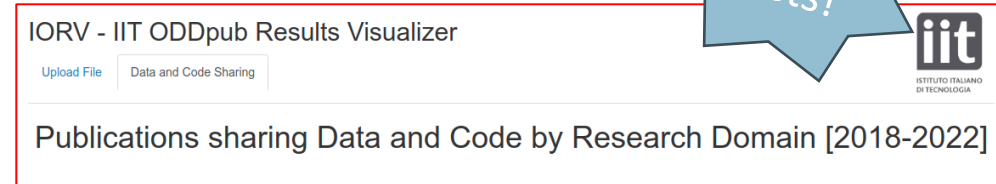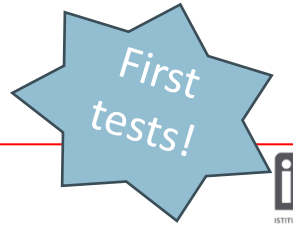 - ➢ FAIR Data dashboard: https://quest-dashboard.charite.de/#tabFAIR

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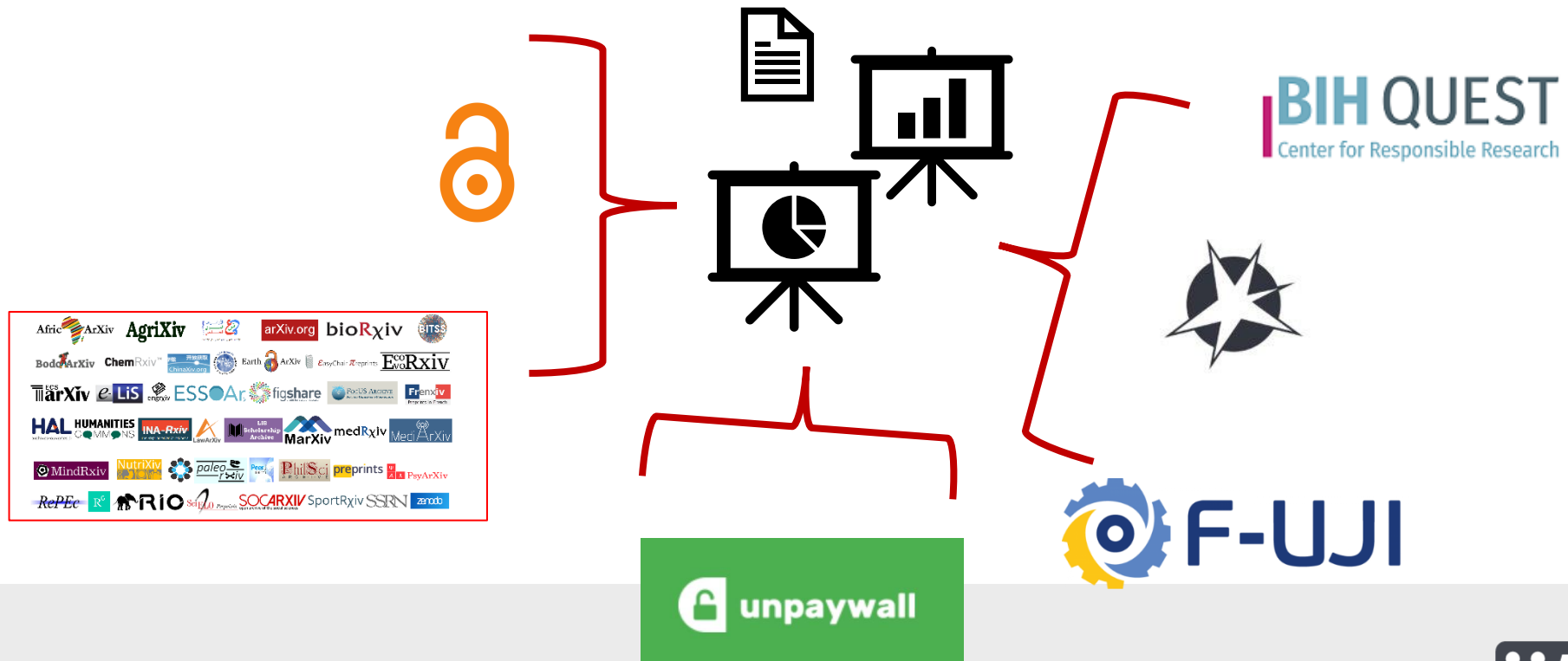 ➢ FAIR Data dashboard: https://quest-dashboard.charite.de/#tabFAIR

Sources of inspiration!

Monitoring openly shared datasets and code

- Using the open-source text-mining tool ODDPub developed at QUEST, it is investigated to which extent the IIT scientific papers contain links to open datasets or code, shared by the authors.

- Find insights about sharing practices for each research domain of IIT.

- It is the first time that such activity is being tried IIT.

Build OS dashboards and enable reporting…

- The solutions and sources of information mentioned shall be used to create Open Science pilot dashboards and reports, starting in 2024:

Build OS dashboards and enable reporting…

- The solutions and sources of information mentioned shall be used to create Open Science pilot dashboards and reports, starting in 2024:

- Aggregation in informative dashboards: not only the management, but also the scientists can then see and acknowledge the importance of OS.

- Start showing and recognizing the multifaceted aspects of OS to scientists and group leaders, getting acquainted with OS jargon and with the systems to monitor it .

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…in alignment to CoARA

- **CoARA**: global coalition of research funding organisations, research performing organisations, national, regional assessment authorities, learned societies, … to advance research assessment.

- IIT is a signatory also of the CoARA Agreement, based on 10 commitments, establishes a common direction for research assessment:

  ➢ IIT is defining its institutional roadmap action plan for the years 2024-2027, …

  ➢ … implementing mutual learning with Working Groups …

  ➢ … and it is being part of the Italian National Chapter of CoARA.

…in alignment to CoARA

- IIT strives for the recognition of full range of diverse scientific outputs, including OS aspects, rewarding research quality and good science together with other established measures of research impact.

- Planning to leverage (also) on the services and tools mentioned above, the IIT roadmap is going to include the recognition and valorization of Open Science aspects and activities, too.

Thank you for your attention!!

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