



Europa Media Trainings

# Open Access and Data Management

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EMG Group

**Horizon Europe Academy**

Horizon Europe Project Management, Financial Rules & Reporting  
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Online

# Open Science

## The origins

### Open Science

= approach based on cooperative work and systematic sharing of knowledge and tools **as early and widely as possible**

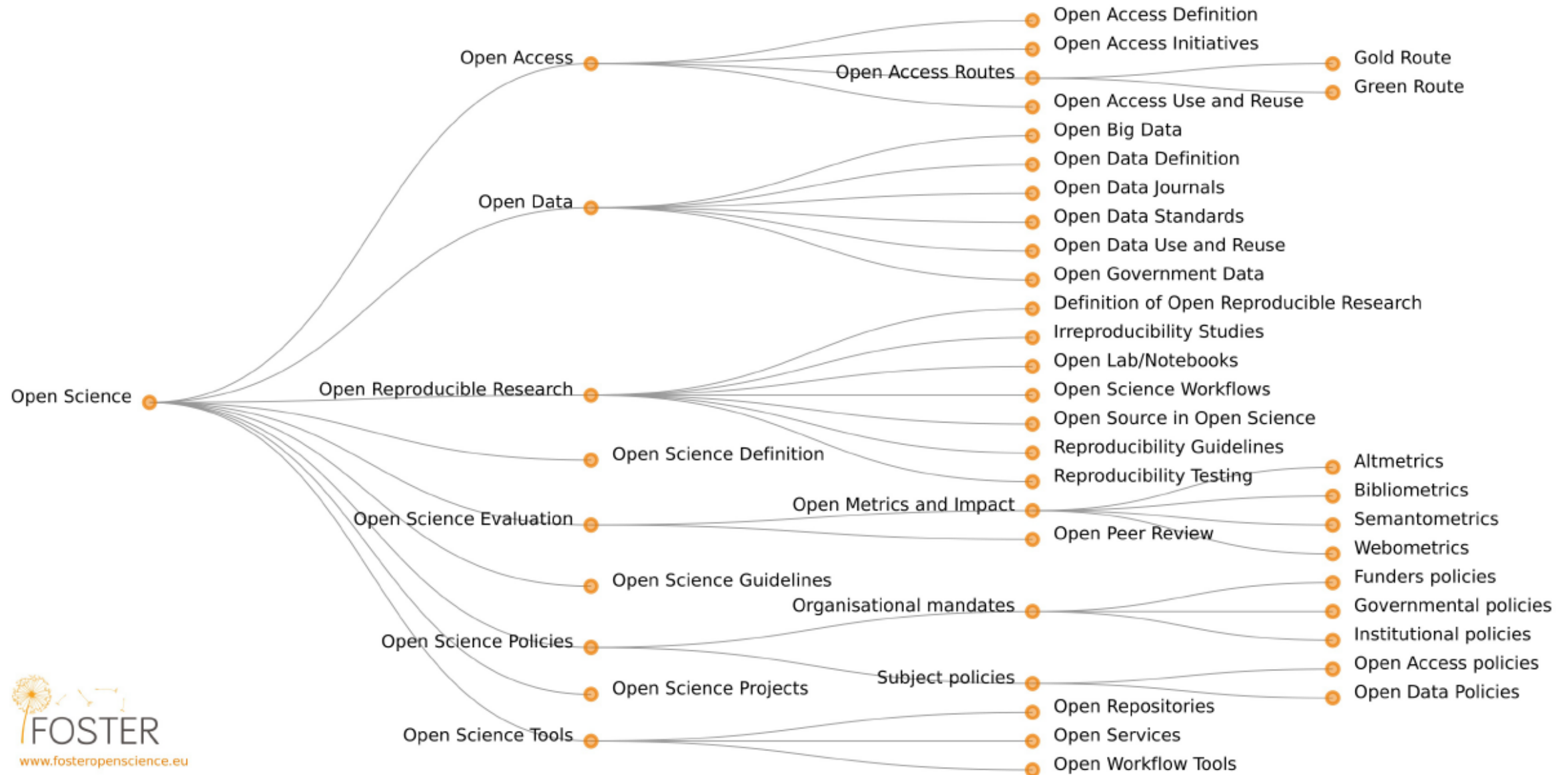
### Responsible Research and Innovation (RRI)

= societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole R&I process to better align both the process and its outcomes with the values, needs and expectations of society.

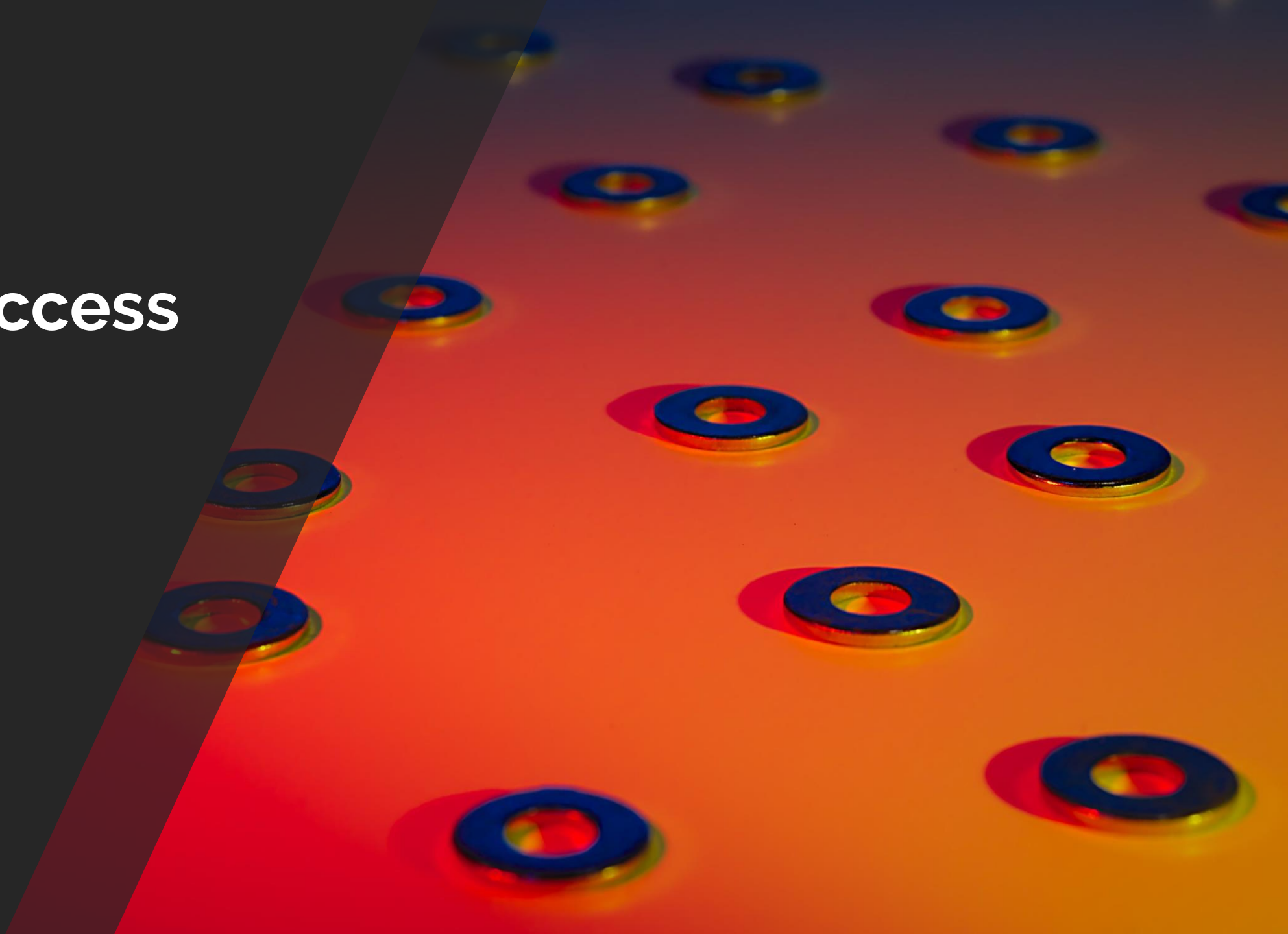
- Public engagement
- Gender equality
- Ethics
- **Open Science**
- Science education
- Governance



# Open Science Taxonomy



**Open Access**

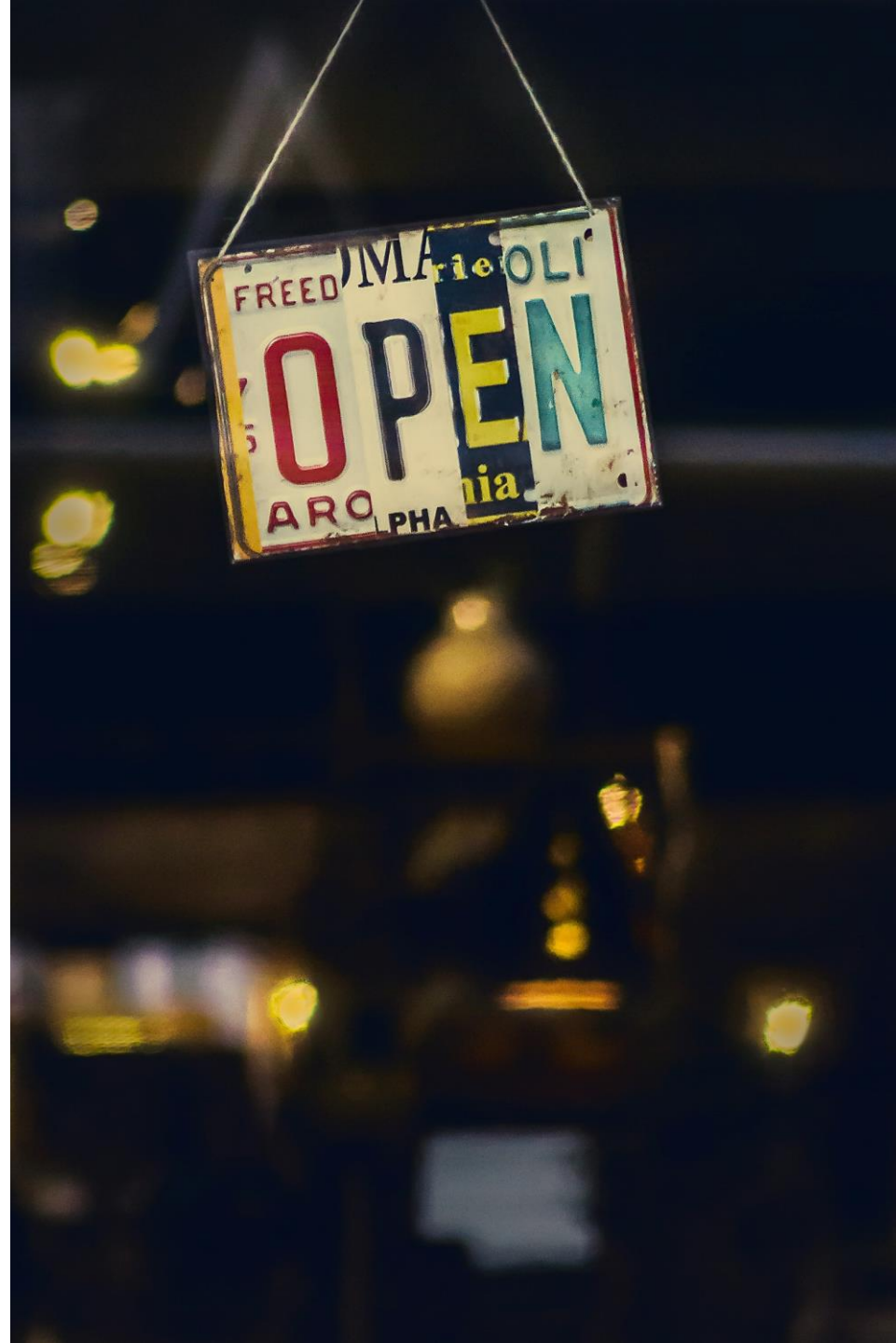


# Open access

= **online access at no cost for the end user** of research outputs (e.g. scientific publications, data, software, algorithms, electronic notebooks etc.)

## To consider:

- Proposal development: specific info on HOW
- If scientific peer-reviewed publications are produced, they must be open access under open licenses (e.g. [Creative Commons](#))
- Retain sufficient IPR
  - Retain the copyright on the work and grant, nonexclusive licenses to publishers
  - Put in place institutional policies to ensure copyright retention and compliance with the open access requirements
- **Data** should be deposited in a trusted repository as soon as possible after production
- 'As open as possible as closed as necessary'



# Legal obligations

## GA Art 17 + Annex 5

### Open Access to scientific publications

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results. In particular, they must ensure that:

- **at the latest at the time of publication, a copy of the published version or the final peer-reviewed manuscript accepted for publication**, is deposited in a trusted repository for scientific publications
- **immediate open access is provided to the deposited publication via the repository**, under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights
- **information is given via the repository about any research output or any other tools and instruments** needed to validate the conclusions of the scientific publication.

**Metadata** of deposited publications must be open under a Creative Commons Public Domain Dedication (CC 0) or equivalent, in line with the FAIR principles.



# Legal obligations

## GA Art 17 + Annex 5

### Additional practices

- **Where the call conditions impose additional obligations regarding open science practices**
- **Where the call conditions impose additional obligations regarding the validation of scientific publications**, the beneficiaries must provide (digital or physical) access to data or other results needed for validation of the conclusions of scientific publications
- **Where the call conditions impose additional open science obligations in case of a public emergency**, the beneficiaries must (if requested by the granting authority) immediately deposit any research output in a repository and provide open access to it under a CC BY licence, a Public Domain Dedication (CC 0) or equivalent. As an exception, if the access would be against the beneficiaries' legitimate interests, the beneficiaries must grant non-exclusive licenses —under fair and reasonable condition. **This provision applies up to 4 years after the end of the action.**

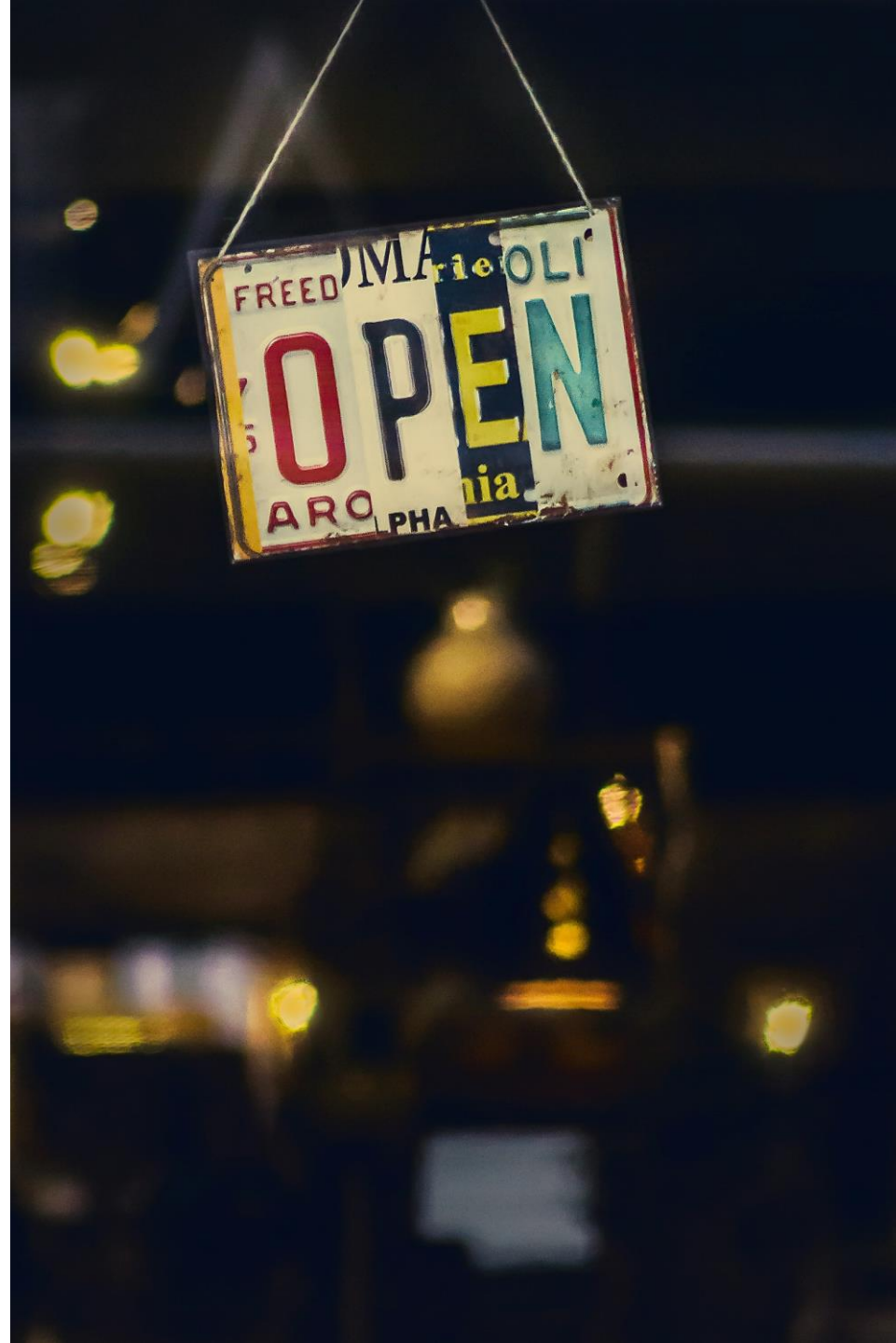


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# Open access

## How to... Creative Commons

Creative Commons license type	Share (copy + redistribute)	Use for commercial purposes	Adapt (transform, build upon)	Give appropriate credit	Maintain copyright, database rights
<b>CC BY</b>	Yes	Yes	Yes	Yes	Yes
<b>CC BY NC</b>	Yes	No	Yes	Yes	Yes
<b>CC BY ND</b>	Yes	Yes	No	Yes	Yes
<b>CC BY NC ND</b>	Yes	No	No	Yes	Yes
<b>CCo</b>	Yes	Yes	Yes	No	No

# Data Management



# Research Data Management

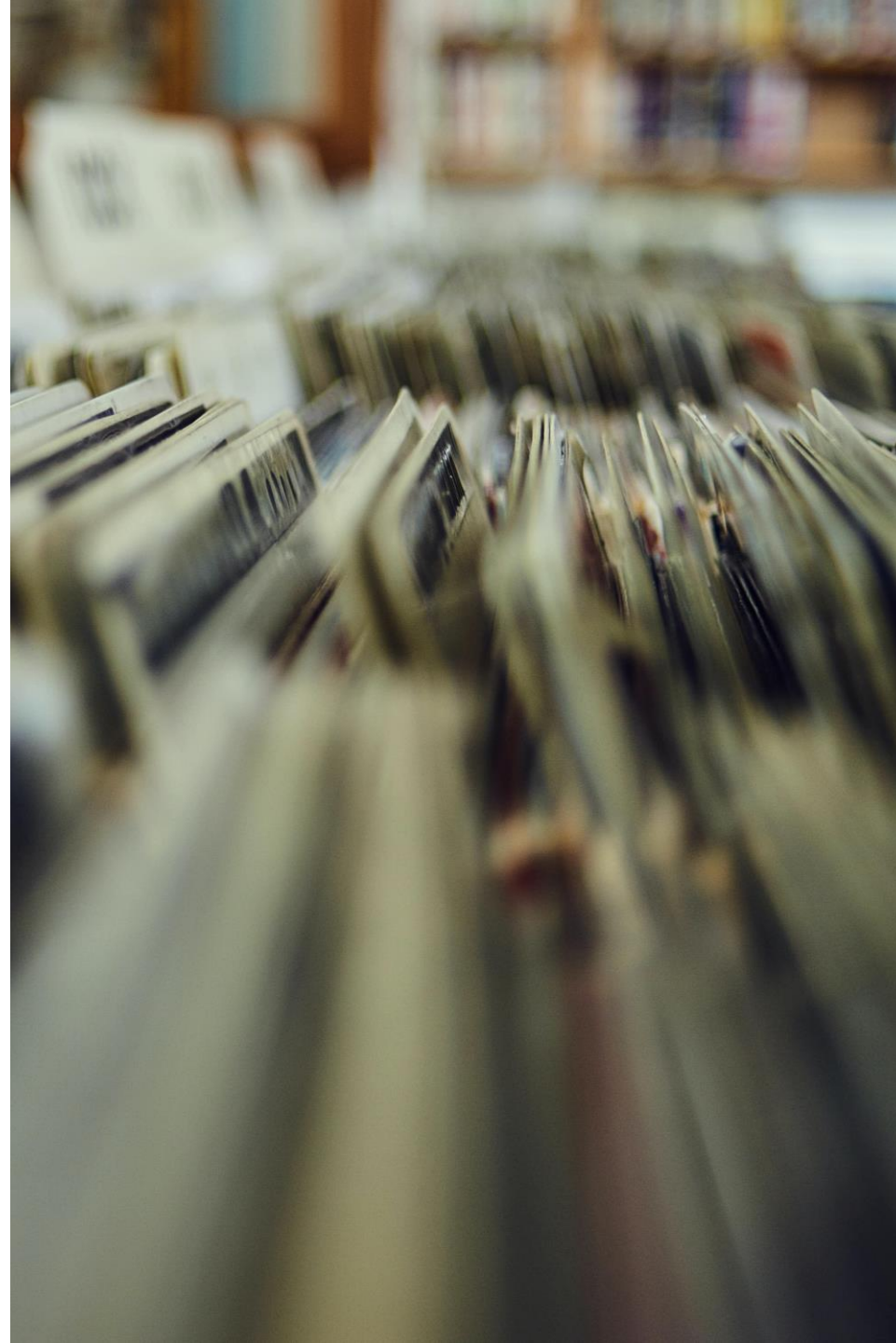
## The concept

### Research Data Management (RDM)

= the **process** within the research lifecycle that includes the data collection or acquisition, organisation, curation, storage, (long-term) preservation, security, quality assurance, allocation of persistent identifiers (PIDs), provision of metadata in line with disciplinary requirements, licencing, and rules and procedures for sharing of data.

Elements to consider in your project's RDM:

- **Persistent identifiers** (PIDs) to ensure findability of research outputs and data
- **Standardised metadata frameworks** for the findability of research outputs and their potential reuse
- **Trusted repositories** for the deposition of and access to publications and research data



# Legal obligations

## GA Art 17 + Annex 5

### Research Data Management

The beneficiaries must manage the digital research data generated in the action ('data') responsibly, in line with the FAIR principles and by taking all of the following actions:

- **establish a data management plan ('DMP')** (and regularly update it)
- as soon as possible and within the deadlines set out in the DMP, **deposit the data in a trusted repository**
- as soon as possible and within the deadlines set out in the DMP, **ensure open access — via the repository — to the deposited data**, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC0) or a licence with equivalent rights
- **provide information via the repository about any research output or any other tools and instruments** needed to re-use or validate the data.

**Metadata** of deposited data must be open under a Creative Commons Public Domain Dedication (CC 0) or equivalent (to the extent legitimate interests or constraints are safeguarded), in line with the FAIR principles.



# Research Data Management

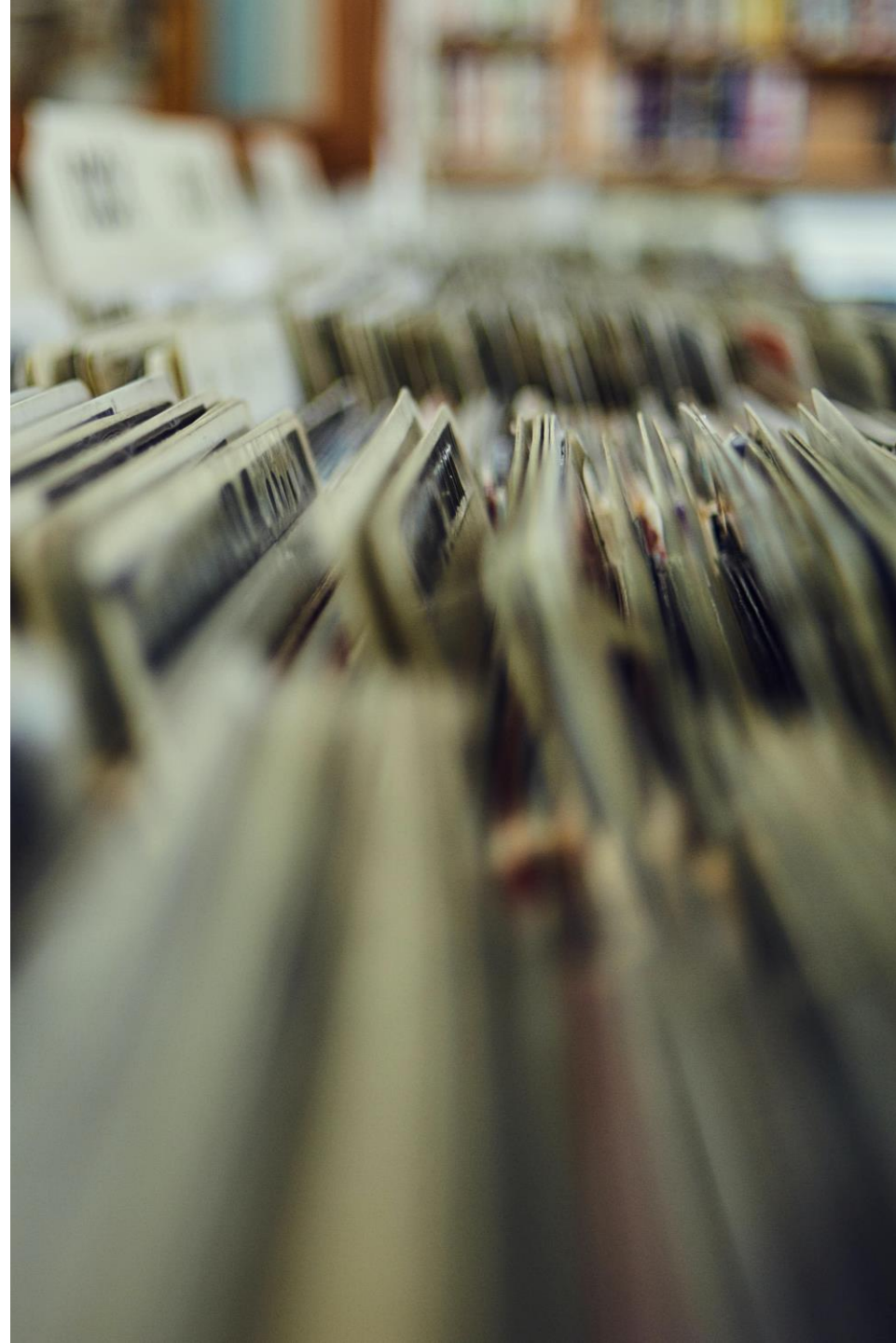
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# Research Data Management

## Data Management Plan

### What is a Data Management Plan (DMP)?

= your key to good data management

- Describes the data management life cycle
- The template = set of questions
- Living document (!)
- Deliverable – 1<sup>st</sup> version by M6

💡 Register your DMP as non-restricted public deliverable + publish it in journals, platforms or repositories (e.g. RIO, DMPOnline).

```
139         title={
140         target={
141         rel="noopener noreferrer"
142         href={trackUrl(url)}
143       }
144     }
145   }
146   </li>
147 </ul>
148 </div>
149 );
150 }
151
152 renderWhatsNewLinks() {
153   return (
154     <div className={styles.whatsNewLinks}>
155       <h4 className={styles.whatsNewLinksTitle}>
156         <ul className={styles.whatsNewLinksList}>
157           {this.renderWhatsNewLink(
158             {this.renderWhatsNewLink(
159               {this.renderWhatsNewLink(
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165                       </li>
166                     </ul>
167                   </div>
168                 )
169               )
170             )
171           )
172         }
173       <li className={styles.whatsNewLink}>
174         <a href={trackUrl(url)}
175           target="_blank"
176           rel="noopener noreferrer"
177         >
178           {title}
179         </a>
180       </li>
181     </ul>
182   );
183 }
184
185 renderFooterSub() {
186   return (
187     <div className={styles.footerSub}>
188       <Link to="/" title="Home - Unsplash">
189         <Icon type="logo" className={styles.footerSubLogo} />
190       </Link>
191       <span className={styles.footerSubLogo} />
192     </div>
193   );
194 }
195
196
197
198 render() {
199   return (
200     <footer className={styles.footerGlobal}>
201       <div className="container">
202         {this.renderFooterMain()}
203         {this.renderFooterSub()}
204       </div>
205     </footer>
206   );
207 }
208 }
209
```

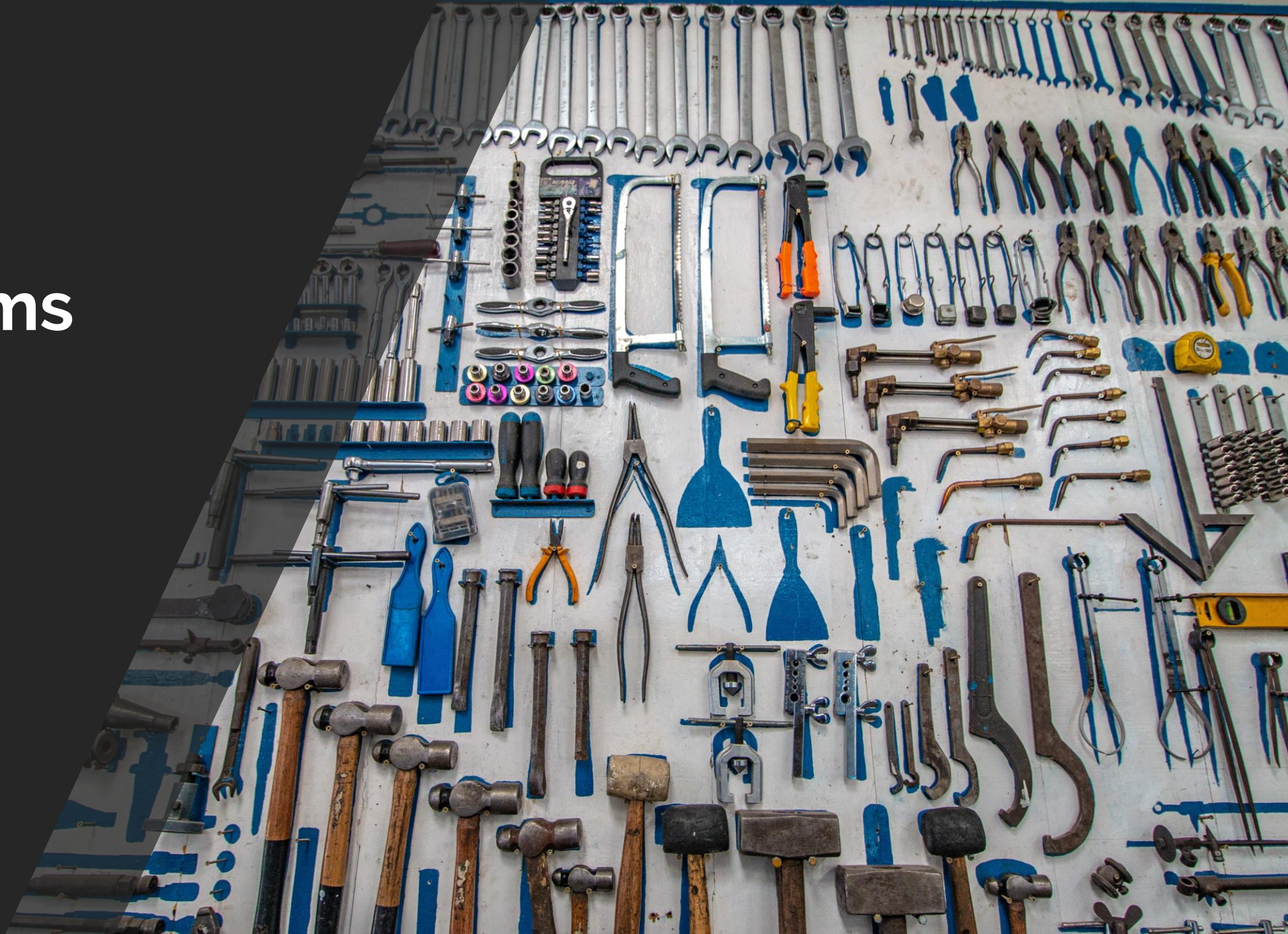
# Research Data Management

## To address in your DMP

- **Data set description:** what kind of data is your project generating or reusing? Estimate the size of the data set
- **Standards and metadata:** how do you structure your data and what protocols are you using?
- **Name and persistent identifier for data sets:** unique and persistent identifier and a stable link to directly access the data
- **Curation and preservation methodology:** how will you ensure the integrity of the data sets and for how much time? How will it be preserved and kept?
- **Data sharing methodology:** how can the data sets be accessed? Terms of use and license
- **Research output management** other than data and publications
- **Related costs and personnel:** data collection, documentation, storage, preservation, availability and reuse, person/team in charge

```
139
140
141     title={
142       rel="noopener noreferrer"
143       href={trackUrl(url)}
144     }
145     </a>
146   </li>
147 </ul>
148 </div>
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156         <ul className={styles.whatsNewLinksList}>
157           {this.renderWhatsNewLink(1)}
158           {this.renderWhatsNewLink(2)}
159           {this.renderWhatsNewLink(3)}
160           {this.renderWhatsNewLink(4)}
161           {this.renderWhatsNewLink(5)}
162           {this.renderWhatsNewLink(6)}
163           {this.renderWhatsNewLink(7)}
164           {this.renderWhatsNewLink(8)}
165         </ul>
166       </div>
167     );
168   }
169
170 renderWhatsNewItem(title, url) {
171   return (
172     <li className={styles.whatsNewItem}>
173       <a
174         href={trackUrl(url)}
175         target="_blank"
176         rel="noopener noreferrer"
177       >
178         {title}
179       </a>
180     </li>
181   );
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205     </footer>
206   );
207 }
208 }
209
```

# Tools & platforms





# European Open Science Cloud (EOSC)

= open trusted virtual cloud to enable researcher to store, share, process, analyze, and reuse research data, publications, and software across disciplines and borders.

- Use cases on [EOSC in Practice](#)
- EOSC community and stakeholders on [events](#) and [news](#) sections
- [EOSC-Hub](#)
- [Catalogue](#) & [Marketplace](#) for services and resources for researchers
- [Training](#)

💡 Work programmes may require the use of trusted repositories federated in EOSC for depositing research data



# OpenAIRE

- = network of dedicated Open Science experts + training
- = infrastructure harvesting research output from connected data providers

## Services and perks:

- Integrated scientific information (links publications, project info, datasets in one place)
- Training sessions on Open Access/Open Science
- [Zenodo](#) = all-purpose open research repository (publications, datasets, code, posters, presentations...)
- Open Science helpdesk
- 34 [National Open Access Desks](#) (NOADs)
  - UNIT in Norway

💡 All OpenAIRE services can be used for free, however some of them may require logging in.



# Open Research Europe

= open access publishing platform for the publication of research coming from H2020 and HE funding

## Some characteristics:

- Helps beneficiaries comply with the open access terms of their funding
- Publishing venue to share results and insights rapidly
- Facilitate open, constructive research
- Author-driven model = authors make sure the article is peer-reviewed by independent experts
- All articles are published open access under a CC-BY license

## Process:

1. Article submission
2. Publication & data deposition
3. Open peer review & article revision
4. Send to indexers & repositories



# Open access

## More resources

### Publishing:

- [Directory of Open Access Journals](#) (locate trustworthy journals in your field)
- [Journal Checker Tool](#) (check if a journal has an open access policy aligned with HE)
- [Directory of Open Access Books](#) (locate trustworthy open access publishers)

### Repositories:

- [Figshare](#) (for any research outputs)
- [Open Science Framework](#) (open source)

**Repositories for software:** [GitHub](#), [Savannah](#), [SourceForge](#), [Launchpad](#)

**Repositories for experimental workflows and protocols:** [Protocol Exchange](#), [Protocols](#)

**Discipline-specific repositories:** [ELIXIR Deposition Databases](#), [ELIXIR Core Data Resources](#)



# Research Data Management

## Resources and guides

- [Research data management \(RDM\) open training materials](#) (Zenodo)
- FOSTER Open Science e-learning
- Data Management Plans
  - [DMPonline](#)
  - [OneHealth EJP DMP Guide](#)
  - [ARGOS](#)
  - [Data Stewardship Wizard](#)
  - Webinar (video: DOI: 10.5281/zenodo.2564974; slides: DOI: 10.5281/zenodo.2565750)
- [Science Europe Practical Guide to the International Alignment of Research Data Management](#) (detailed guide for drafting and evaluating DMPs)
- EC Guide for FAIR data management in H2020
- [RDA FAIR Data Maturity Model Working Group](#) (detailed and annotated indicators to increase FAIRness of data)

💡 For RDM repositories, see the previous slide 😊



A white rectangular card is suspended from a thin, black and white braided string by a black clothespin. The card is centered horizontally and has the word "QUESTIONS?" printed in a bold, orange, sans-serif font. The background is a plain, light gray wall.

**QUESTIONS?**

Thank  
you

*for your attention*

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