

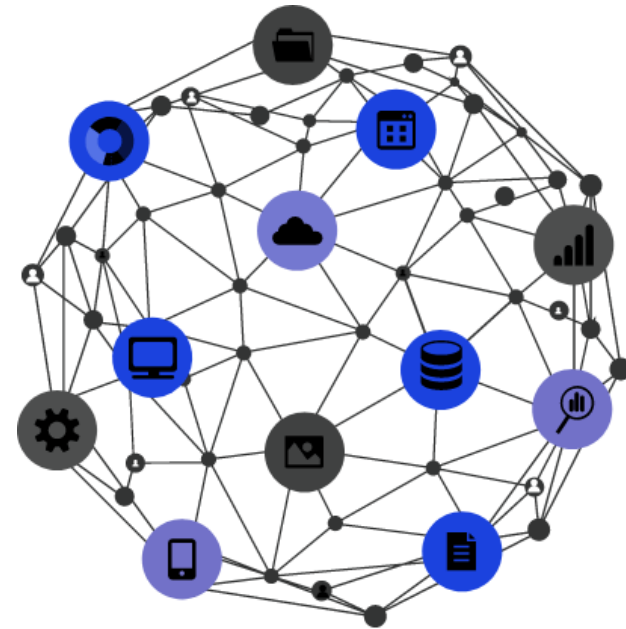
# Research Data Management (RDM) at ETH Zurich

Open Science Working Group

## Content of the presentation

- Part I RDM Guidelines
- Part II Support for Researchers

**From files and folders  
on personal computers ...**



**... to data platforms  
shared by research communities**

# Part I

## Guidelines for Research Data Management at ETH Zurich (RDM Guidelines)



# Introduction

## Initial situation

- researchers are knowledgeable about their community's RDM practices
- the processes they use for managing their data have been set up over long time periods

## Why RDM Guidelines?

- closing remaining gaps to achieve the best practice in RDM
- better integrity proofs in research (increases society's trust in science)

## Towards a common foundation

- supplementing ETH Zurich *Integrity Guidelines*
- consultation process involving all departments and internal organisations
- adoption of ETH Zurich RDM Guidelines in July 2022

Download the full RDM Guidelines from the ETH Zurich legal collection ([RSETHZ 414.2](#))

### Guidelines for Research Data Management at ETH Zurich (RDM Guidelines)<sup>1</sup>

1 July 2022

RSETHZ 414.2

#### *The Executive Board*

pursuant to Article 4, Paragraph 1g and Art. 10, Paragraph 4b of the ETH Zurich Organization Ordinance of 16 December 2003 (RSETHZ 201.021)<sup>2</sup> as well as pursuant to Article 3, Paragraph 3 and Article 10, Paragraph 4 of the ETH Zurich Guidelines on Scientific Integrity (Integrity Guidelines) of 1 January 2022 (RSETHZ 414)<sup>3</sup> issues the following guidelines:

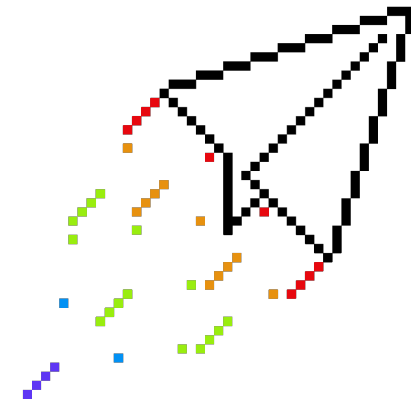
#### **Preamble**

ETH Zurich considers *Research Data* of high quality as an essential resource and *Research Data Management* as part of good scientific practice according to internationally recognised standards for scientific integrity. ETH is convinced that good data management enhances the robustness of research findings, facilitates research collaborations, makes research results more reproducible, and strengthens society's trust in science.

ETH Zurich therefore commits to creating a research environment that supports FAIR<sup>4</sup>

# What the RDM Guidelines do for you

- **Establish** a clear link between RDM and scientific integrity
- **Anchor** RDM in recognized standards and best practices of research communities
- **Clarify** relations with ETH Domain, national and international initiatives and regulations
- **Specify** the vocabulary and principles for RDM and FAIR Research Data
- **Determine** responsibilities for research data and research data management
- **List** ETH-internal RDM infrastructures and services for researchers

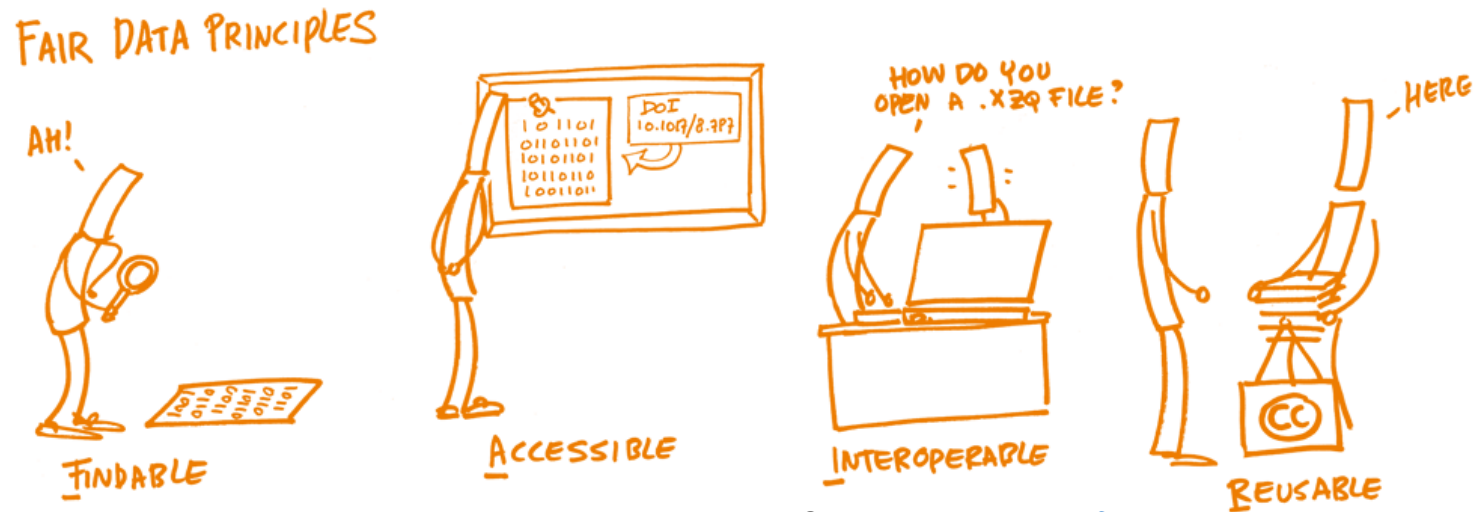


# FAIR Data Principles

Internationally recognised principles\* for improving the **f**indability, **a**ccessibility, **i**nteroperability and **r**e-use of digital content. Special attention is paid to the requirements for the machine actionability of research data.

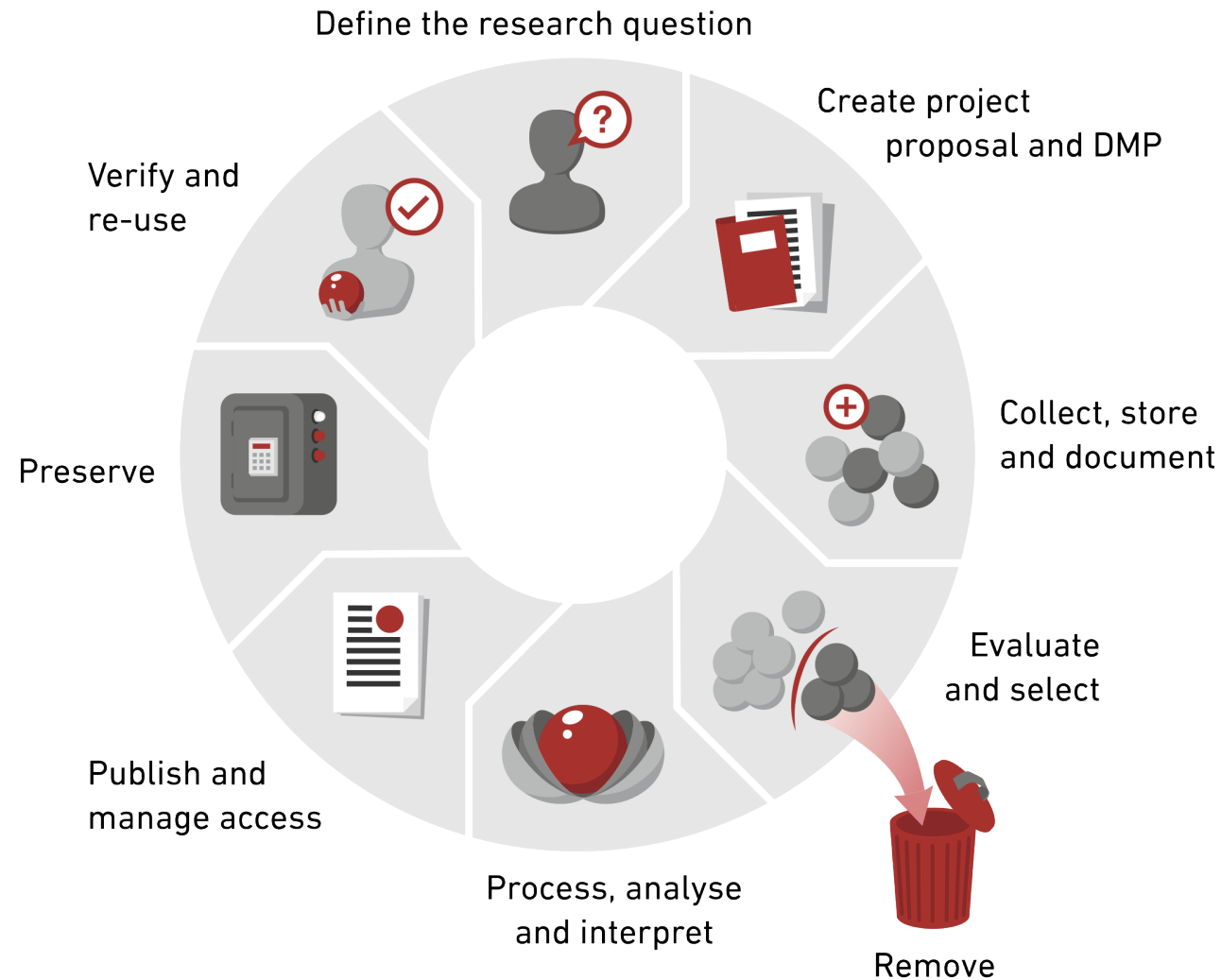
## FAIR Data Principles

- Ensure good data management
- Optimize the use of data, including data sharing
- Support the long-term maintenance of valuable digital assets
- Facilitate finding and reusing research data for downstream investigations



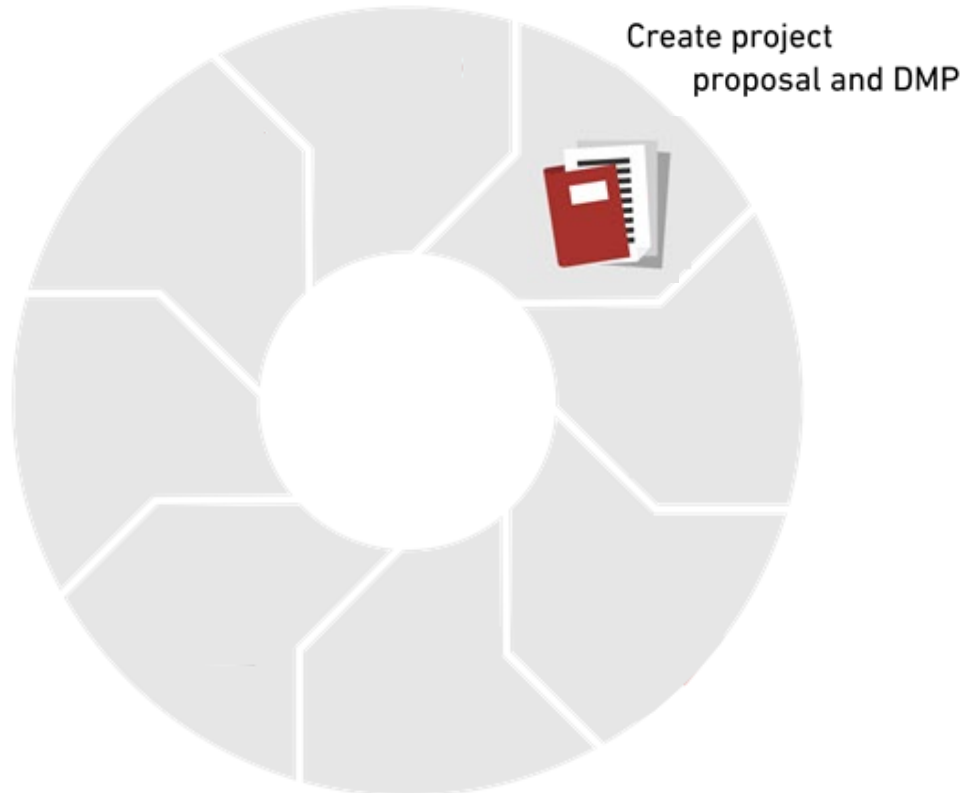
Source: <https://book.fosteropenscience.eu/>

# FAIR Research Data Management at every step of the data lifecycle



*The life cycle of research data*

# Planning of Research Data Management (Art. 4)



- **Data Management Plan (DMP)** expected for **research projects** with clear temporal boundaries
- The DMP is an **instrument for researchers** to facilitate the **implementation of good RDM practices** as well as for planning storage and safeguarding of data
- Departments, institutes, labs, groups and non-departmental units are **invited to establish RDM best practices** in alignment with community standards



# Data collection and processing (Art. 5)



- **Research Data must be stored redundantly, or it must be possible to recreate them**
- **Access management** responds to scientific needs of researchers and prevents unauthorised access
- **Well-documented and non-proprietary file formats** are recommended
- **Digital documentation** of structure and processing of all research data
- **Electronic Laboratory Notebooks** are recommended

# Publication of Research Data and Scientific Code (Art. 6)

- Data and code that are **directly relevant for a result publication must be deposited and published in a FAIR repository** along with rich, openly available metadata
- The ETH Research Collection is available as a general FAIR data repository
- If for technical or economical reasons not possible, FAIR allows for publishing Metadata only, which contain information on how raw data can be accessed if necessary
- Publications of results must contain a **Data Availability Statement**

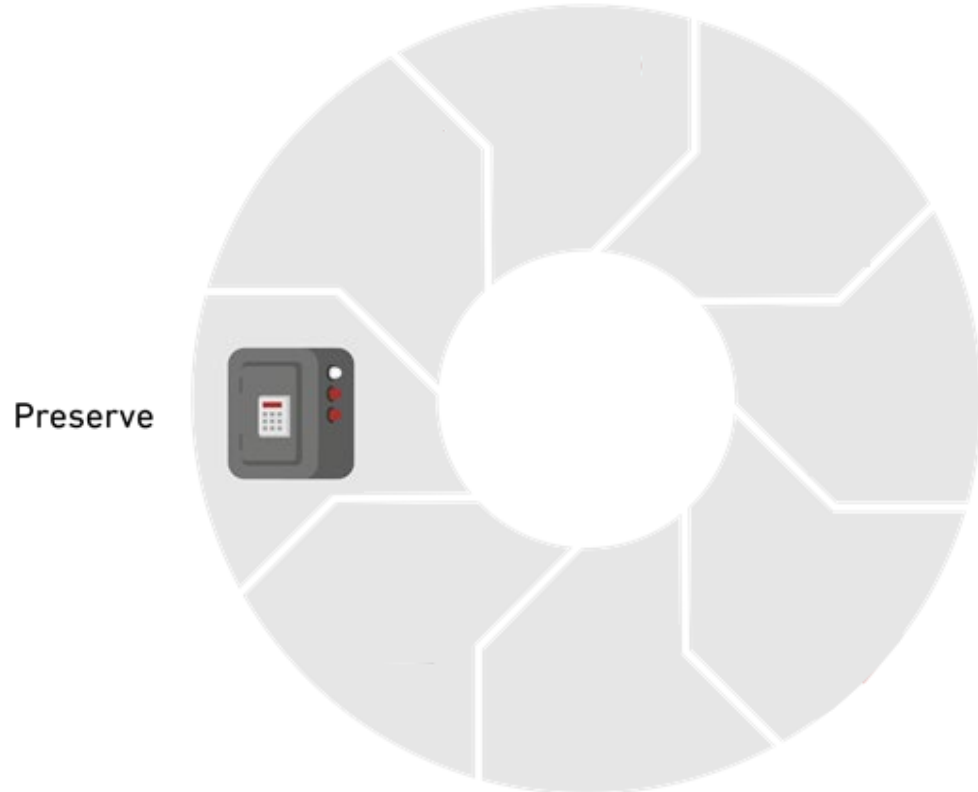


# Publication of Research Data and Scientific Code (Art. 6)



- Justified exceptions for not publishing data or code may apply:
  - *constraints due to institutional provisions and/or applicable superordinate national and/or international ethical principles and/or legal regulations;*
  - *ongoing preparation of a patent application;*
  - *contractual obligations (e.g., to industry partners);*
  - *intended commercial use of a software linked to a data set; and/or*
  - *intended use of Research Data and Programming Code for commercial purposes, e.g., sale.*
- Researchers must **not hand over exclusive rights to repositories**
- **Commercial repositories should be avoided**

# Storage and Safeguarding (Art. 7)



- Data deposited in a repository must be **retained for a minimum of 10 years.**
- Data not deposited in any repository must be stored at ETH Zurich and retained for a minimum of 10 years **if they are required for justifying the origin of published data.**
- If storage is not possible for technical or cost reasons, **it must be possible to fully recreate the original data**

# Open Research Data (ORD)

## Ideal to strive for

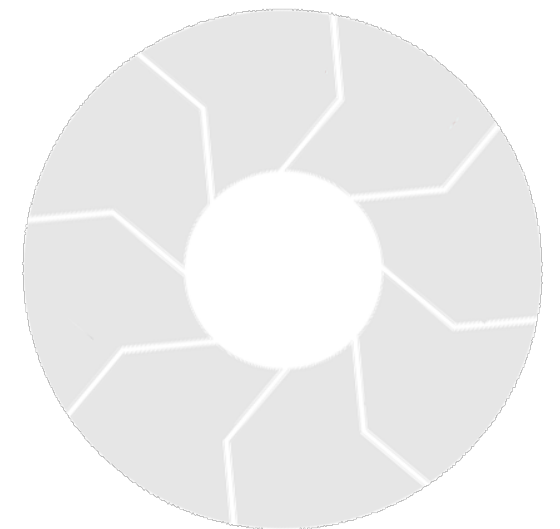
- make research data publicly available while respecting the legal and ethical framework: "as open as possible, as closed as necessary"

The RDM Guidelines also list valid reasons for not sharing research data and scientific code (see above).



# Part II

## Support for Researchers



# RDM Support: ETH Library and Scientific IT Services

ETH Zurich provides the **basic infrastructure, information and services** that facilitate and where possible enable RDM according to the RDM Guidelines. The ETH Library and Scientific IT Services (SIS) offer several **services and supporting material** that assist researchers and research groups with integrating the new RDM Guidelines into their everyday work.

## Overview

Scientific IT Services (ID SIS) and the ETH Library jointly offer **a comprehensive range of training courses** on various aspects of Open Research Data and research data management. **Individual consulting** can be obtained from both units.

They maintain joint resources on the ETH web presence:

- **Research Data:** <https://ethz.ch/researchdata>
- **Research Data Management:** <https://library.ethz.ch/fdm>
- **Wiki "Research Data Management and Digital Curation":**  
<https://documentation.library.ethz.ch/display/DD/Research+Data+Management+and+Digital+Curation>

# Specific support I

## ETH Library

- **Step-by-Step Guide on Data Publication for ETH Zurich Researchers** [\[link\]](#) supports researchers with preparing such research data for publication in a FAIR data repository
- **Template for a Data Availability Statement** [\[link\]](#) for data related to publications
- **Instructions as well as a template for preparing a general DMP** [\[link\]](#)
- **DMP-guidance for projects supported by the SNSF** [\[link\]](#)
- **Instructions for drafting a Data Management Strategy for labs and research groups** [\[link\]](#)
- **Fair Data Repository “ETH Research Collection”** [\[link\]](#)



# Specific support II

## IT Services

- **Redundant storage infrastructure for different needs**, especially for “warm” & “cold” storage of research data – see *Storage* section in IT Service catalogue [\[link\]](#)
- **Services and consulting around FAIR Data Management** of actively researched data – “*Research Data Hub*” and “*Research Data Nodes*” [\[link\]](#)



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- **Platform for management & analysis of confidential research data** – “*Leonhard Med*” [\[link\]](#)



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- **Platform for management & analysis of confidential research data** – “*Leonhard Med*” [\[link\]](#)
- **GitLab platform for version control & professional code management** [\[link\]](#)

# Specific support III

## Office of Research

The Office of Research is the main point of contact for questions regarding **Open Science at ETH Zurich**. It supports the departments and other organisational units (e.g. institutes, research groups, platforms or facilities) that want to create and edit specific Open Research Data and RDM policies. It also coordinates the **ETH Zurich Open Science Working Group** and advises the Executive Board on Open Science questions. In addition, it administratively manages and advises researchers on the **ORD-related funding programmes**:

<https://ethz.ch/en/research/open-science.html>

# Specific support IV

## ETH transfer

Contact point for **publishing research-related software and source codes**; and supports in concluding **data use agreements and agreements on the commercial use of research data**: <https://ethz.ch/de/wirtschaft/transfer.html>.

## ETH Legal Services

Provide support in **dealing with personal data** <https://ethz.ch/staffnet/de/service/rechtliches/datenschutz.html> and in regulating **access to research data by ETH-external researchers** or after completion of a research project ([Template for Data Use Agreement](#)).

## ETH Ethics Commission

Main point of contact for **ethical questions about the publication of Research Data**: <https://ethz.ch/en/the-eth-zurich/organisation/boards-university-groups-commissions/ethics-commission.html>

- > [www.ethz.ch](http://www.ethz.ch)
- > Research
- > Open Science

[Link](#)



Homepage > Research > Open Science

## Open Science

### Share research data



(ETH Zürich/Gian Marco Castellberg)

Improve the Findability, Accessibility, Interoperability and Reusability of research data according to the FAIR Data principles

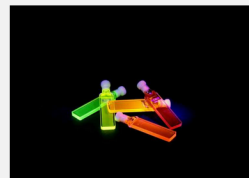
### Publish findings



(Sammlung wissenschaftlicher Instrumente & Lehrmittel)

Disseminate research results  
Open Access for all

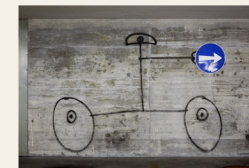
### Apply for funding



(ETH Zürich/Olesya Yarema)

Participate in the Open Research Data Funding Programmes, get funding for Open Access publication and learn how to comply with funder requirements

### Join the community



(ETH-Bibliothek Zürich, Kunstinventar)

Subscribe to the Open Science - Open Calls mailing list or email to: openscience@sl.ethz.ch

- > [www.ethz.ch](http://www.ethz.ch)
- > Research
- > Open Science

[Link](#)

## Open Science at ETH: Support services and infrastructures

### Research Data Management

[Training and consulting for researchers](#)

### Research Data Infrastructure and Services

[Data acquisition, annotation and storage](#)

### E-Publishing Office

[Access to scientific information for everyone](#)

### ETH Research Collection

[Publication and research data repository](#)

### Data Stewardship

[Support for research groups and technology platforms](#)

### DOI registration desk

[Persistent identification of digital objects](#)

## Wider context: Strategies, Policies and Programmes

### [ETH Domain ORD Programme ↗](#)

The ETH Domain invests in implementing five measures to foster and improve ORD practices between 2021 and 2024.

### [Delegation Open Science \(DelOS\) - swissuniversities ↗](#)

[DelOS ↗](#) oversees Open Science at national level. It executes the [Open Science Programme ↗](#), the [OA Action Plan ↗](#) and the swissuniversities' part of the [ORD Strategy ↗](#)

### [National Open Research Data Strategy and Action Plan ↗](#)

ORD strategy and action plan define and implement the overarching goals and principles regarding Open Research Data for Switzerland.

### [National Open Access Strategy and Implementation Plan ↗](#)

These policies consistently pursue the 100% Open Access vision for Swiss higher education.

# Contact

**Open Science Working Group**  
ETH Zurich

[openscience@sl.ethz.ch](mailto:openscience@sl.ethz.ch)

<https://ethz.ch/en/research/open-science.html>





# Appendix : Important Documents and Links

## **ETH Zurich**

Guidelines for Research Data Management at ETH Zurich, 1 July 2022 ([RSETHZ 414.2](#))

ETH Zurich Guidelines on Scientific Integrity (Integrity Guidelines), 1 January 2022 ([RSETHZ 414](#))

Open Access Policy ETH Zurich, 17. Januar 2018 ([RSETHZ 134](#))

## **ETH Domain**

Open Research Data Position of the ETH Domain, 13/14 May 2020 ([link](#))

## **National**

Swiss National Open Research Data Strategy ([link](#)) and Action Plan ([link](#))

## **Europe**

Memorandum of Understanding for the Co-Programmed European Partnership for the European Open Science Cloud, 30 July 2021 ([link](#))

European Open Science Cloud ([link](#))