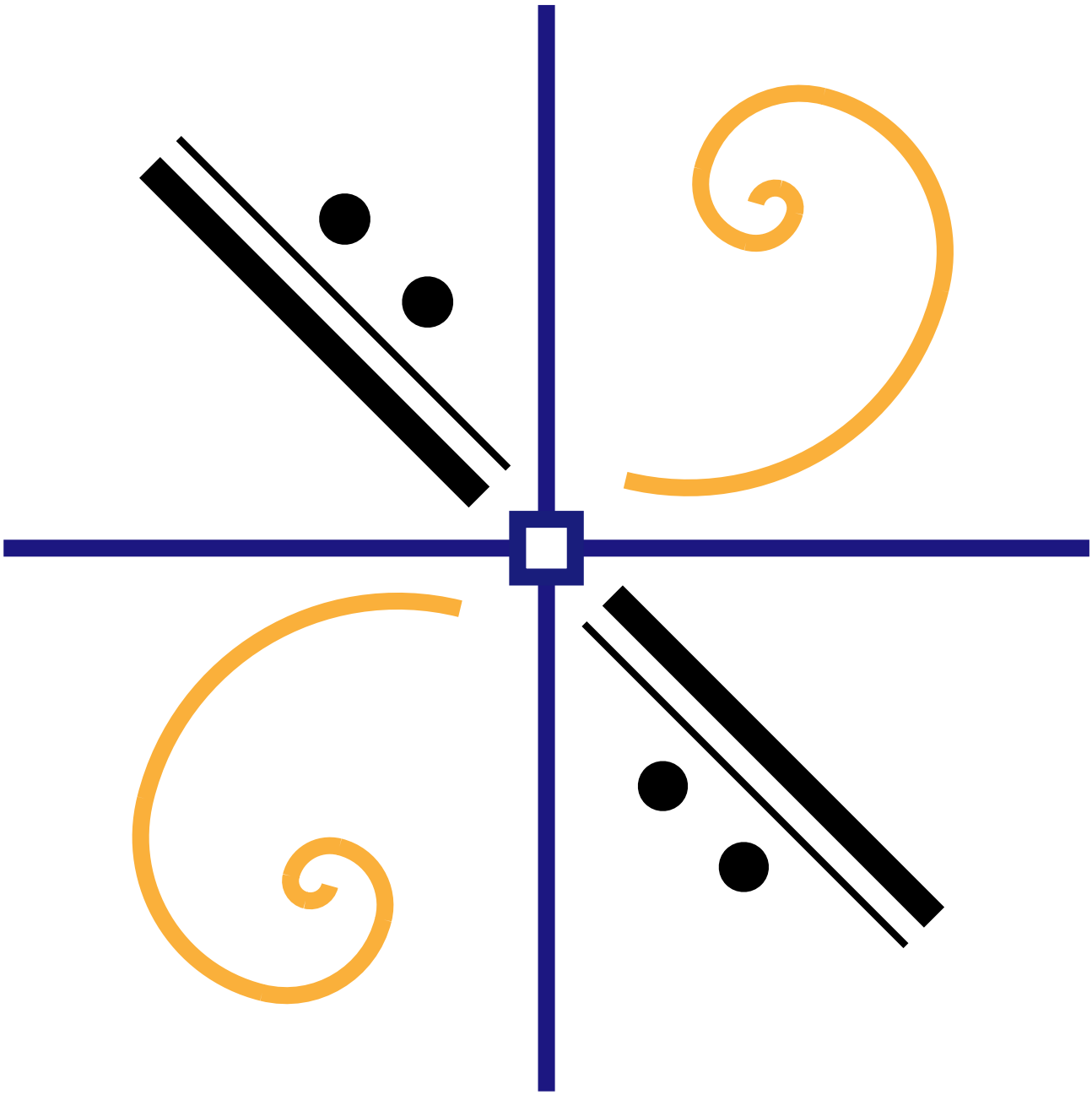
Open Science for Arts, Design and Music

Guidelines for Researchers, Librarians and Practitioners in the Humanities



Foreword

These guidelines were developed as part of the "Open science for arts, design and music" project to cater to the unique needs of art and design schools in Switzerland. They are based on a series of case studies provided by the project's partner institutions and have been tailored to address their requests. As a result, the guidelines offer a comprehensive approach while focusing on the specific needs of research in art, design and music.

The outcome is a structured framework for planning, accessing, reusing, producing, archiving, sharing and sustainably supporting open content by researchers in these fields. Additionally, the guidelines address two relevant challenges across many disciplines: opening multimedia content and managing third-party rights.

Over 30 meetings and webinars have supported the training envisioned by the project and have facilitated discussions and the development of the content for these guidelines. We want to extend our gratitude to all the project partners and experts involved, who have generously contributed to this work.

Iolanda Pensa
Head of Culture and Territory Research Unit, Institute of Design, SUPSI

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The beauty and complexity of open science in art, design and music

Open science should be embraced in all research areas, yet some fields are better served than others, such as science, technology, engineering and mathematics (STEM) where open science initiatives kicked off. Consequently, most resources, practices and guidelines are not designed to address research in arts, design and music.

These guidelines address the distinctive nature and complexity of research in arts, design and music, by offering solutions to make the diverse data produced in these fields more open. In particular, they address the challenges of multimedia content and third-party rights.

Multimedia content

Research in arts, design and music unfolds around a diverse array of multimodal media production: images, artworks, performances, installations, prototypes, recordings, music sheets and printed books... Some items are too big, small, or fragile for digitisation. Research outputs in these fields often extend beyond the typical text-based papers with figures, tables and associated data files. Instead, they can present research findings through websites, enriched and dynamic multimedia publications, videos, images, interactive visualisations, audio, artworks, derivative works, and with a distinct focus on graphic design and presentation. Thus, a primary challenge is the meaningful translation of this variety of formats and their materiality into networked digital solutions that comply with the requirements of open science.

Third-party rights

Researchers in arts, design and music frequently engage with third-party data owned by creators, curators and cultural institutions – collectively known as GLAMs (galleries, libraries, archives and museums) – as well as publishers, other researchers, individuals, communities, companies and NGOs. A series of steps need to be included in the workflow in order to incorporate these materials into research outputs, disseminate them, release them under open licences, or use them for derivative works. These include obtaining permissions, negotiating rights, managing copyright clearance and applying CARE principles while assessing the reuse, storage and release of these diverse sources. The creation and presentation of research data and other resources are acts of curation. This is particularly relevant for arts, design and music (and the humanities as a whole), as data are deeply embedded in the cultural and social practices of the institutions that preserve, curate and (co)produce them. Researchers must navigate epistemic and organisational instruments where multiple layers of interpretations coexist and add up in a siloed way. As a consequence, the interconnection of research data and outputs may be more difficult.

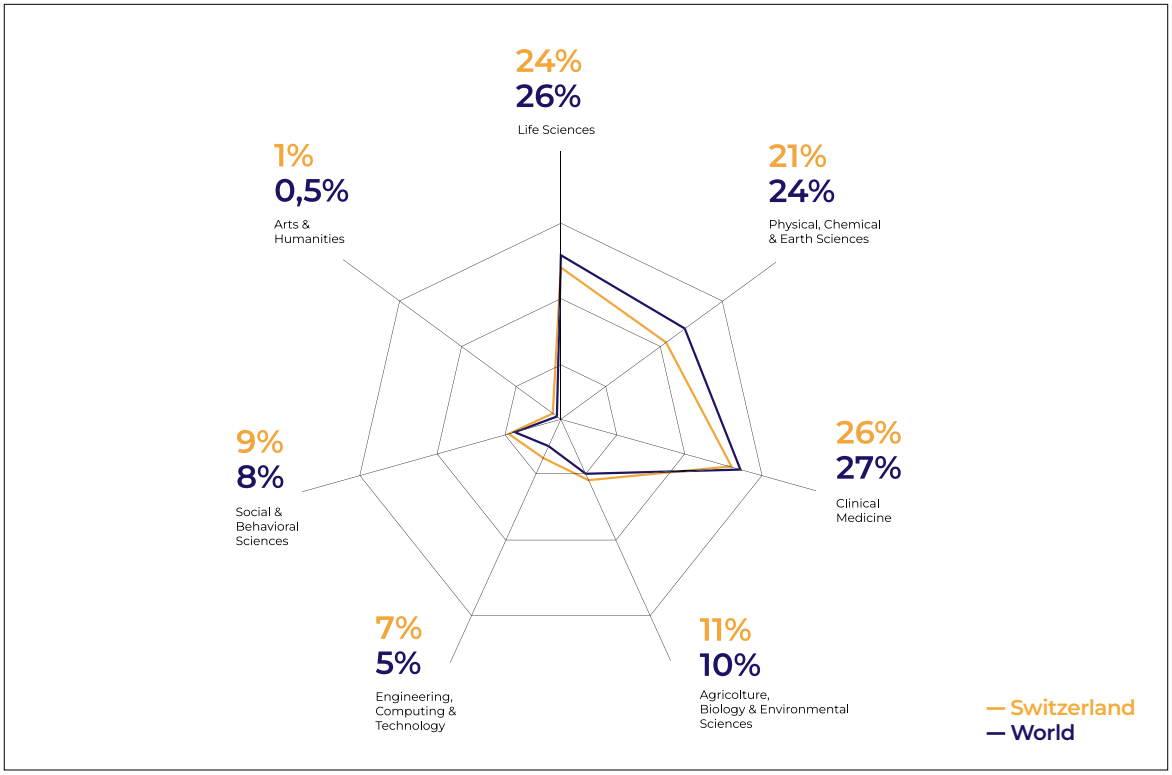
The value of open science in arts, design and music

Opening up research content in art, design and music presents a valuable opportunity to showcase the depth and quality of work by researchers in these fields. This openness enables innovative and diverse uses of the collected and produced data, promotes the creation of transparent research processes, highlights the distinctive research methodologies of these disciplines, and enhances the peer-review process.

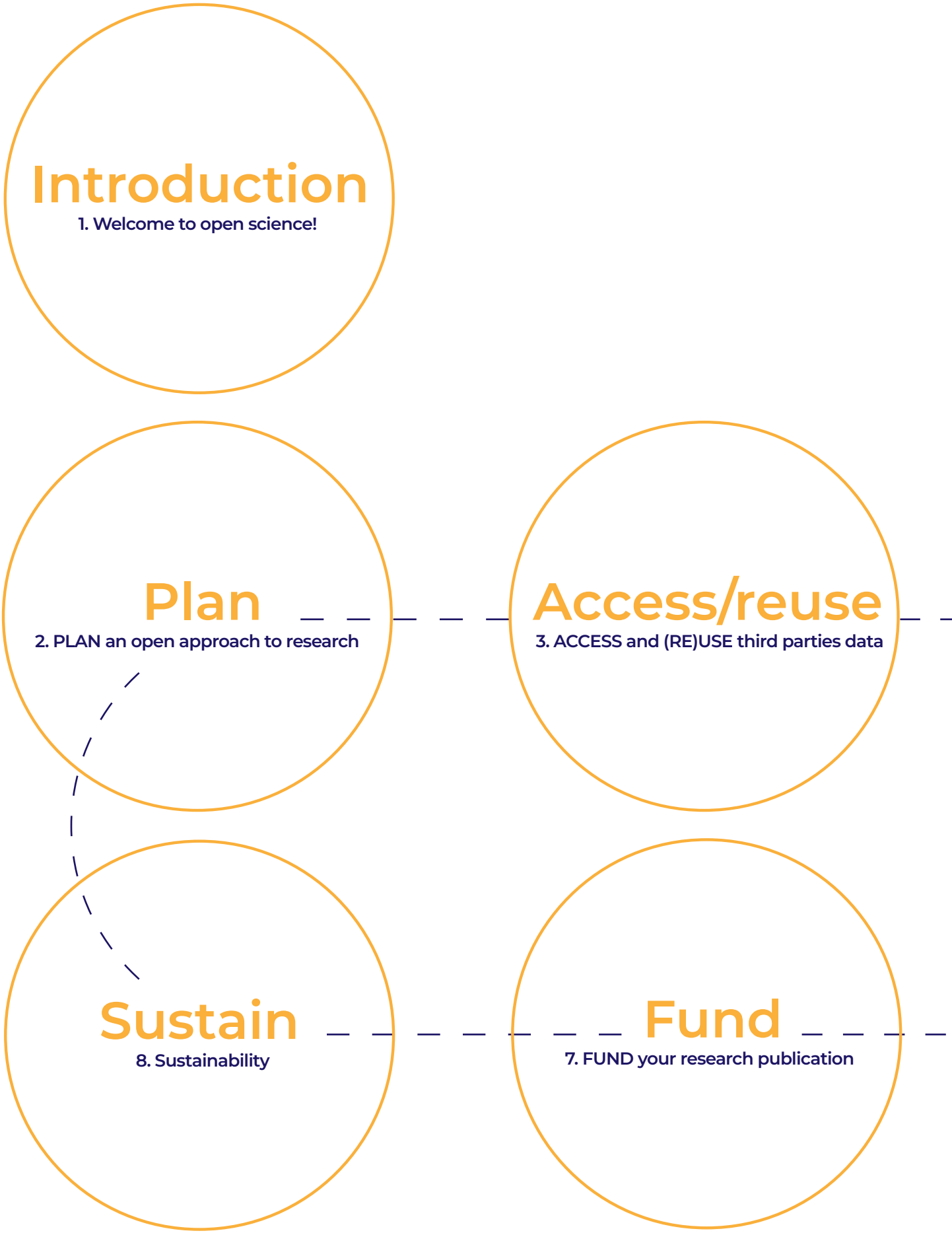
Moreover, making multimedia content openly accessible and managing third-party rights pose challenges that, while present in other fields, are particularly pronounced in these domains. Arts, design and music contribute uniquely to open science by fostering the development of innovative methods, output formats, procedures and alternative forms of publication—advancing open science practices that benefit all disciplines.

Helsinki Initiative on Multilingualism in Scholarly Communication is a prime example of efforts to promote and value multilingualism in scholarly communication

"Recognising digital scholarly outputs in the humanities" highlights the importance of recognising interdisciplinary work, innovative research methods and non-traditional scholarly outputs



[Fig. 1] Breakdown of open access publications by research fields in Switzerland and worldwide (2016-2020)
Derived from Fig. 12 in "Open Access publications, 2008-2020. A bibliometric analysis by the State Secretariat for Education, Research and Innovation SERI, 2023", ISSN 2296-3871, CC BY-SA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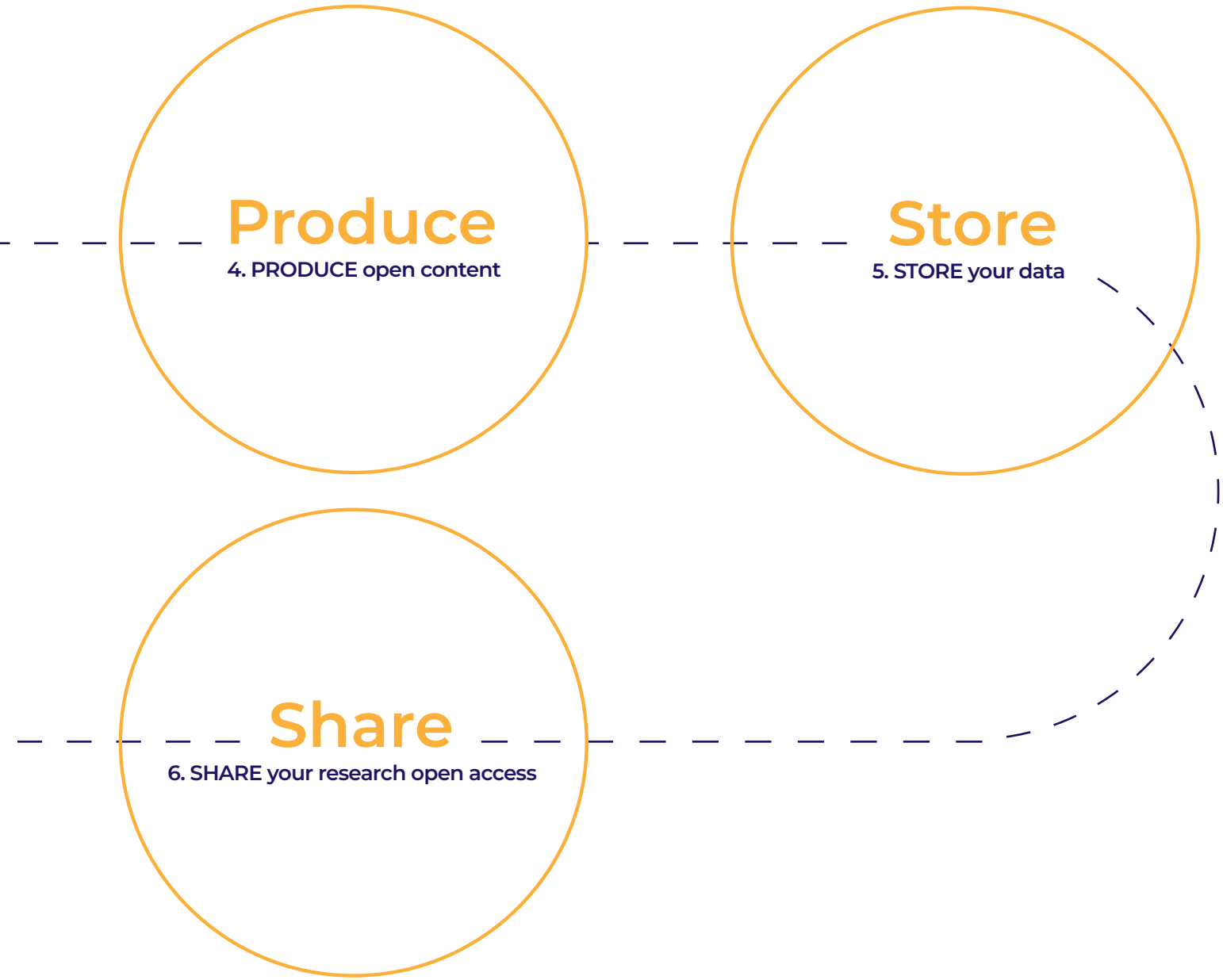
Produce
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Graphic legend

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Introduction

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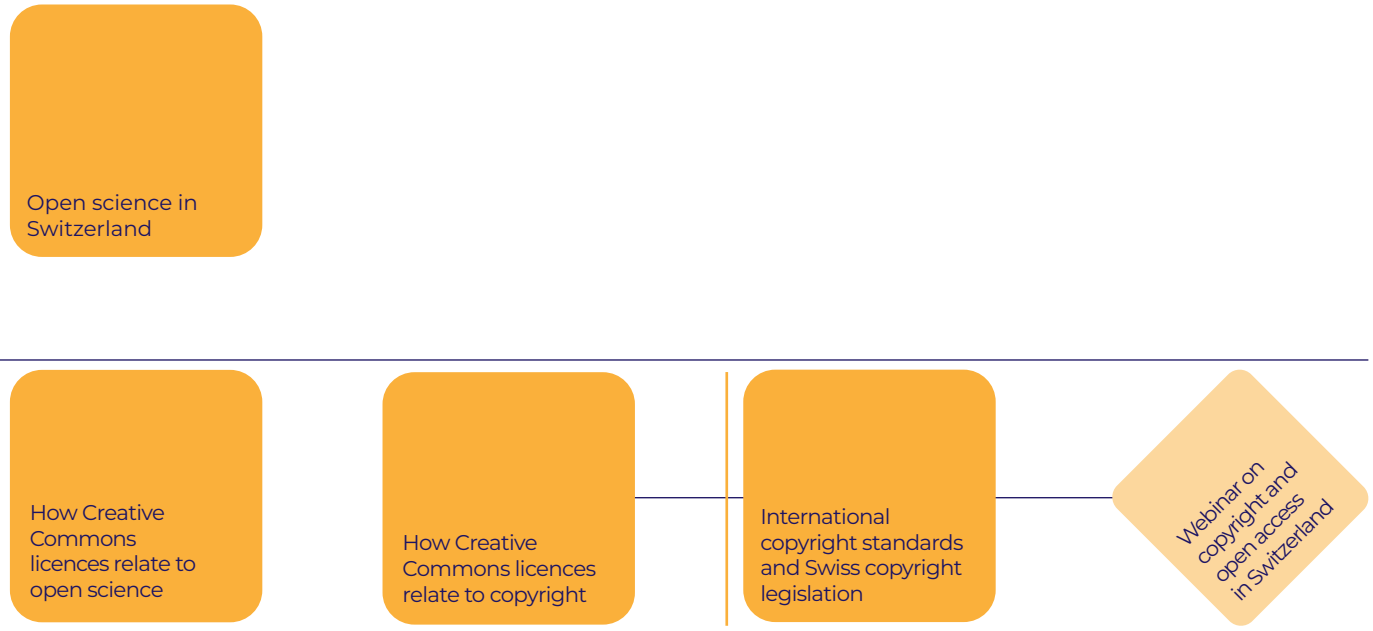
Open science in Switzerland
How Creative Commons licences relate to open science
How Creative Commons licences relate to copyright
International copyright standards and Swiss copyright legislation
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1. Welcome to open science!

Open science is key to enhancing the transparency, integrity and reusability of research across all disciplines. Working with sharing in mind implies new ways of assessing, connecting and reusing research materials.

For researchers and practitioners in the fields of arts, design and music seeking to incorporate the principles of open science into their research workflows, these guidelines provide essential support. These guidelines are also designed to assist librarians, open science champions, ambassadors and stewards in supporting researchers in arts, design and music and in navigating the specific challenges of multimedia content and third-party rights.

1.1. What is open science, and why is it relevant to you

Open science involves the principle and practice of making research data, tools, processes, outputs, documentation and educational material available to the scientific community and the wider public. Enabled by technological advancements, it strengthens and accelerates the production of knowledge and deepens its comprehension, benefitting society at large as well as individual stakeholders, including scholars, academics, research and cultural institutions, publishers, teachers, students, practitioners and citizens.

Long-term sharing of research-related information, from the initial brainstorming notes to the final outputs and educational resources, ensures that anybody can learn about it and build on it. Open science grants reproducibility and fosters scientific collaborations, which may involve citizens' participation (the so-called citizen science). While it safeguards security and privacy, it also significantly bolsters integrity, transparency and rigour of research, and brings increased accountability towards taxpayers' funds. Moreover, sharing mitigates social and geographical inequalities by making knowledge universally accessible.

Open science also boosts the visibility of research, ensuring granular, in-depth dissemination and recognition of your research activities. This comes as a profit to you, to the institutions you work with and to publishing houses as well. For these reasons, adopting an open science approach is increasingly becoming a requirement to access institutional funding at the Swiss, European and international levels.

✳ DARIAH is the European digital infrastructure for the Arts and Humanities, DARIAH-CH its Swiss node. It works with communities of practice, it "develops, maintains and operates an infrastructure in support of ICT-based research practices and sustains researchers in using them to build, analyse and interpret digital resources". Amongst the many services provided by DARIAH, the Social Science & Humanities Open Marketplace is a discovery portal which pools and contextualises resources for Social Sciences and Humanities research communities, including tools, services, training materials, datasets, publications and workflows.

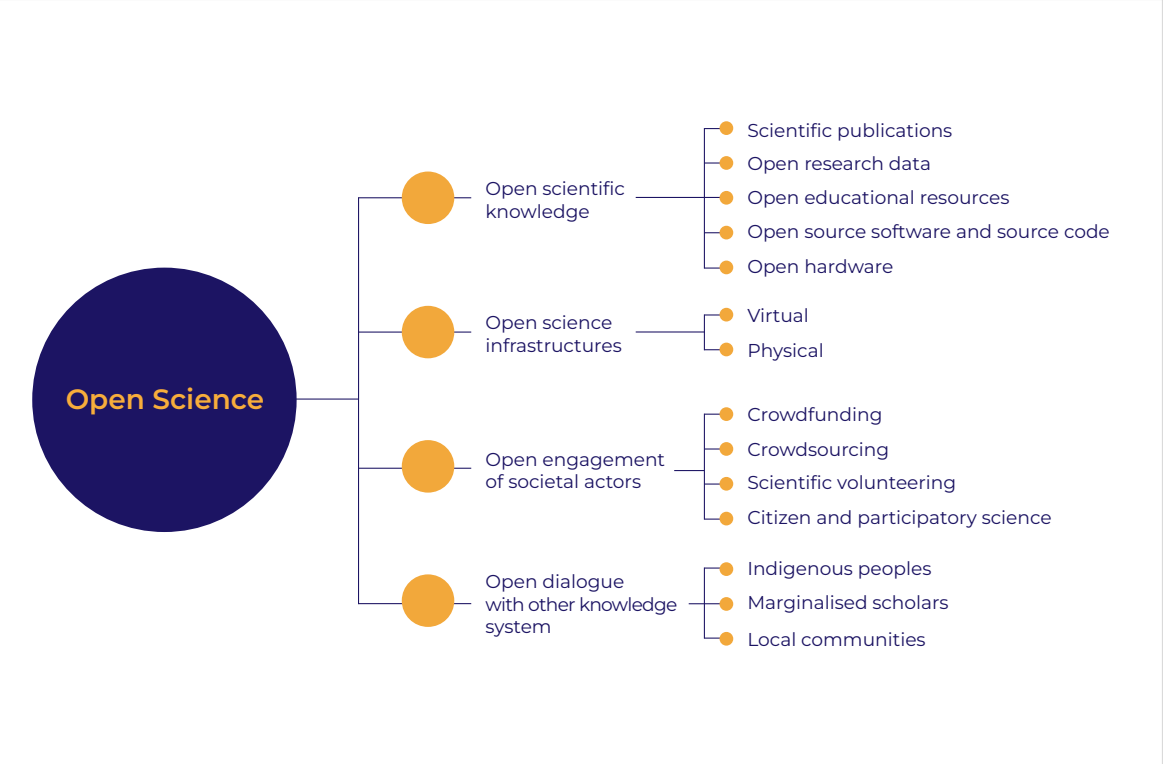
Operas, the European Research Infrastructure for the development of open scholarly communication in the social sciences and humanities, aims to aggregate fragmented resources and make them available transnationally and collaborates with DARIAH (Switzerland is a member)

OpenAIRE is a non-profit partnership of 50 organisations (including CERN and the University of Zurich) established to support European research through a permanent open scholarly communication infrastructure; it monitors the European open science ecosystem and offers guides, training and multiple resources

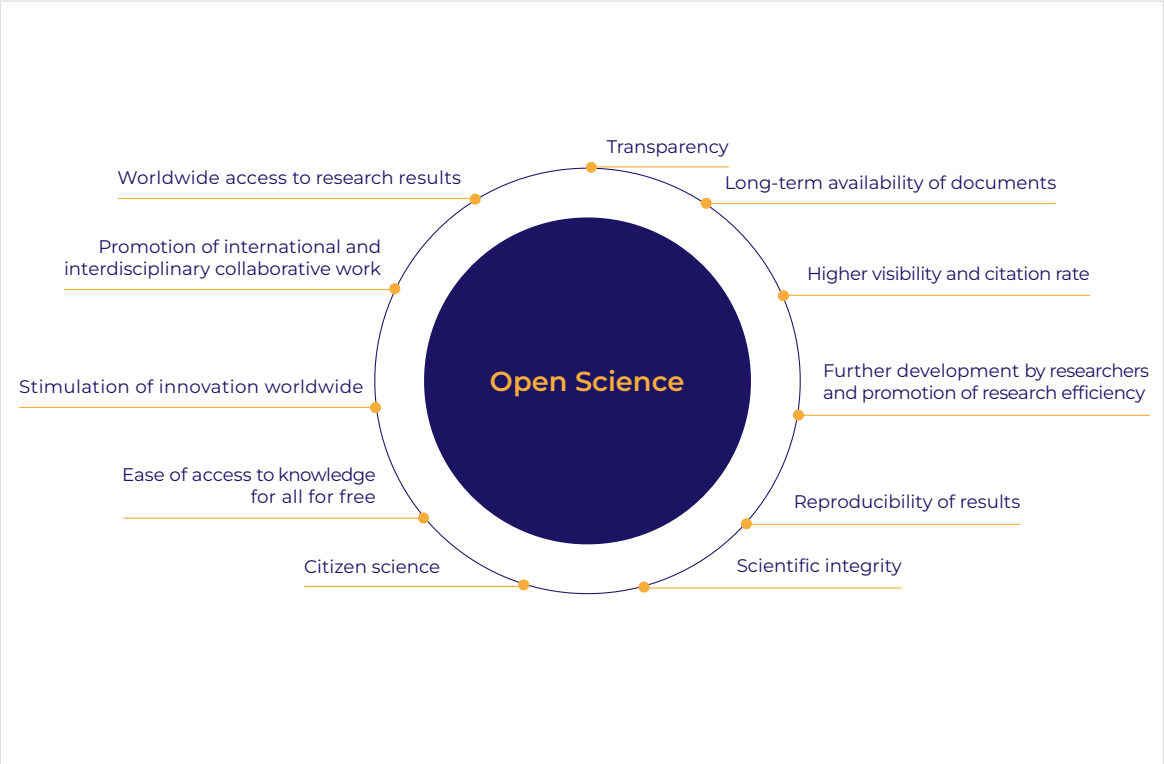
UNESCO is committed to "Making science more accessible, inclusive and equitable for the benefit of all"

Open Science Framework (OSF) is a free and open platform by the American non-profit organisation Center for Open Science (COS), partnering with many US and some European universities, and available to individuals as well. Here you can search previous and current research projects and brainstorm, register your research plan, collaborate and upload a preprint of your work. Notable properties of OSF are getting a timestamped Digital Object Identifier (DOI) as early as your research plan is ready and allowing you to update it; enabling the forking of research projects; offering a centralised project space for seamless collaboration, even if members individually rely on different infrastructures. You will learn more about how the research phases interlink with open science as well as about DOIs and their importance as you read these guidelines

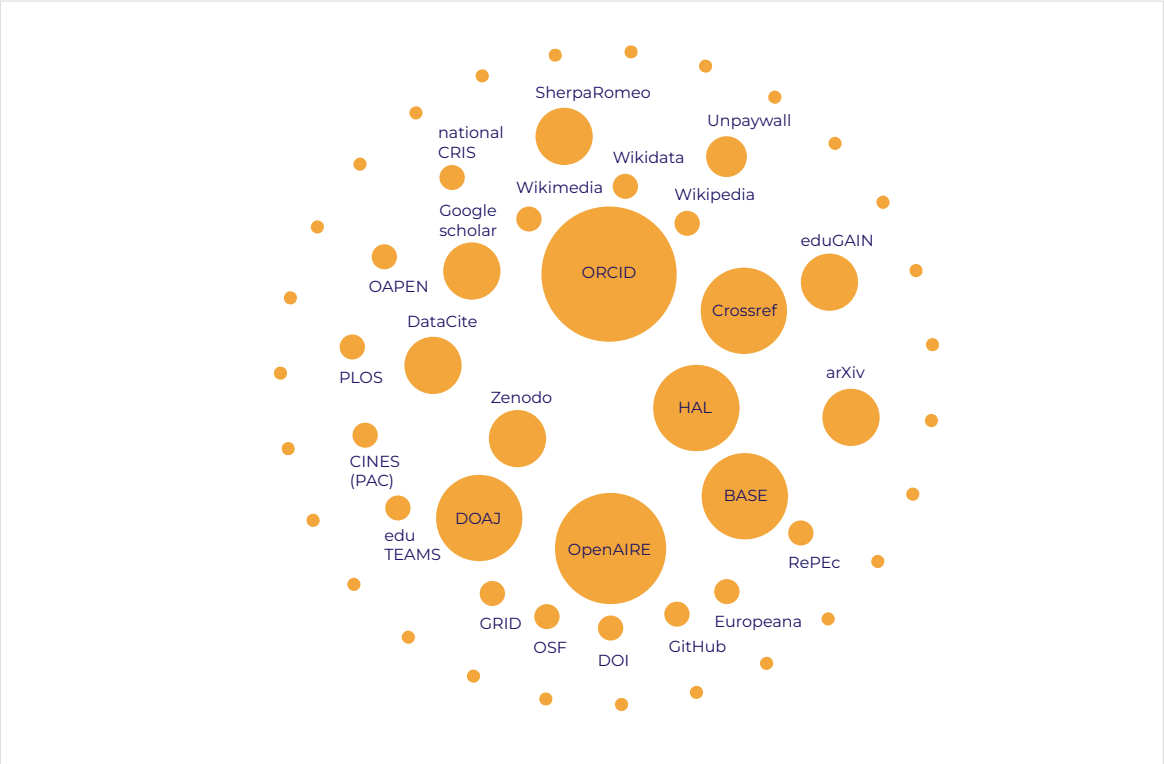
"DARIAH/DARIAH-CH", by Cristina Grisot, 26 April 2023



[Fig. 2] The pillars of open science
Derived from UNESCO, "Understanding open science", 2022, p.6, following "UNESCO Recommendation on Open Science"; CC BY-SA 4.0



[Fig. 3] The benefits of open science
Derived from: "The issues of Open Science", in R. Féret, L. Bracco, S. Cheviron, E. Lehoux, C. Arènes, & L. Li, "Improving your ANR project thanks to Open Science (Version 2)", 2020, p.8, Zenodo; swissuniversities, Vorteile von Open Access [Advantages of open access]; CC BY 4.0



[Fig. 4] Tools and services that the open science infrastructure interoperate with
Derived from V. Ficarra, M. Fosci, A. Chiarelli, B. Kramer, V. Prudman, "Scoping the Open Science Infrastructure Landscape in Europe", 2020, SPARC Europe, image created with VOSViewer, CC BY 4.0

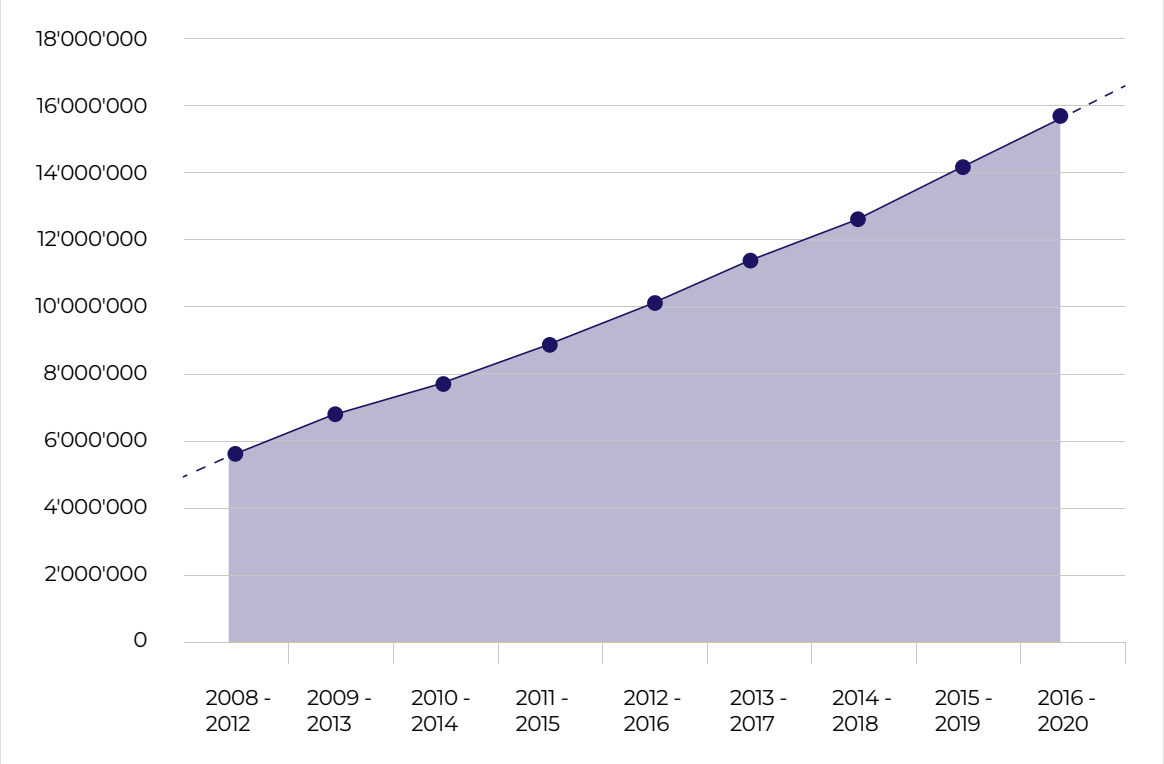
1.1.1. Open science in Switzerland

Switzerland's commitment to open science is anchored in two key frameworks: the Swiss National Strategy on Open Access (2017, revised in 2024) and, complementary to it, the Swiss National Strategy for Open Research Data (2021).

Both strategies are based on the principle that the outputs of publicly financed research belong to the public and, consequently, publications and the underlying research data should be freely and immediately accessible to all. Openness is understood as a prerequisite and a catalyst for high-quality research. The two strategies commit to connecting to national and international ecosystems. This implies interoperability of existing and emerging infrastructures and organisations and compliance with relevant legal frameworks at the national and international levels. Researchers, on the other side, are supported through tailored training opportunities and dedicated grants.

According to the Swiss National Strategy on Open Access, the transformation will be completed by 2032. The strategy has been developed by swissuniversities and the Swiss National Science Foundation (SNSF) and is endorsed by the Swiss Academies of Arts and Sciences, the ETH Domain and other stakeholders. It pursues the following objectives:

- the frameworks for scholarly publishing set by institutions and service providers advance the paradigm shift towards open access;
- the scholarly publishing practices of research communities are characterised by a fully open-access culture;
- the scholarly publishing system is financially sustainable;
- authors affiliated with a Swiss institution have open-access publishing options at reasonable conditions that align with the global context;
- scholarly publishing in Diamond open access is financially viable and a robust alternative for authors;



[Fig. 5] Open access publications worldwide
Derived from Fig. 1 in "Open Access publications, 2008-2020", op. cit., CC BY-SA

- open access for scholarly long-form publications and additional publication formats is supported.

The Swiss National Strategy for Open Research Data (ORD), commissioned by the State Secretariat for Education Research and Innovation (SERI) and supported by swissuniversities, ETH Domain, the Swiss Academies of Arts and Sciences and the National Research Council of the SNSF, adheres to the 2020 Sorbonne Declaration on research data rights. As such, it provides a framework for the development of practices built around sharing research data in Switzerland. Publicly funded research data should be accompanied by comprehensive metadata and adhere to the FAIR principles → 2.3.

The heterogeneousness of the Swiss education landscape is actively supported by fostering a "sustainable and coordinated bibliodiversity" (Open Access Strategy) and by acknowledging the variety of conventions, standards of methodology and values across different disciplines. The Open Research Data Strategy similarly grants researchers the freedom to implement procedures as appropriate for their academic community.

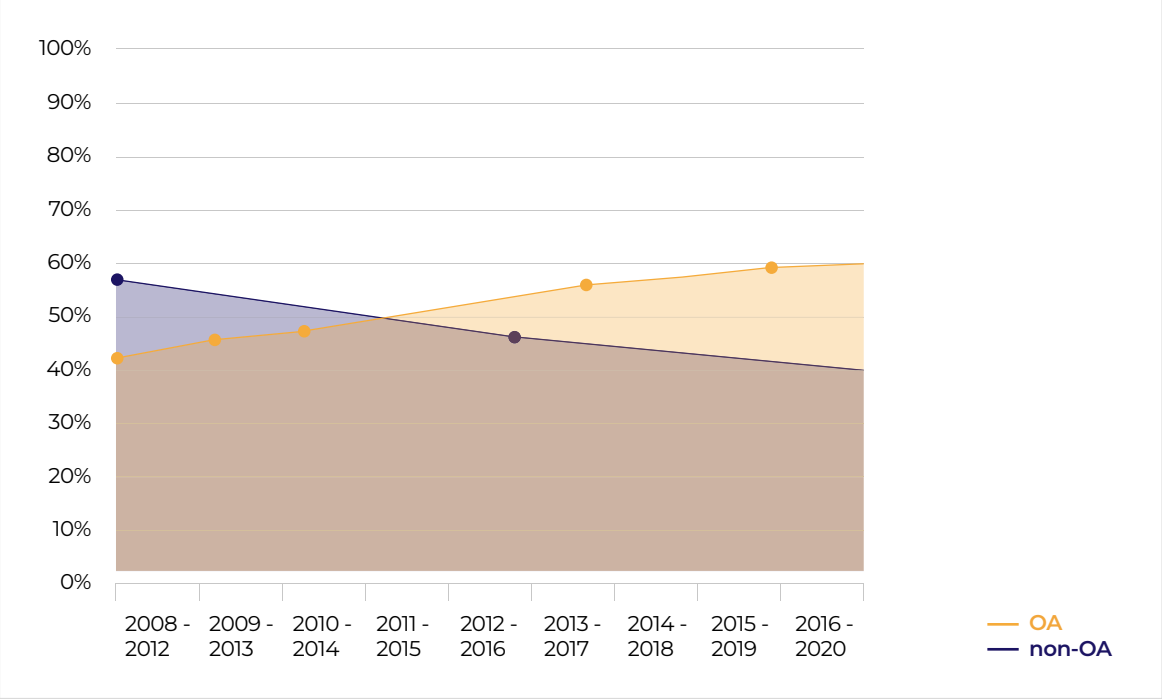
Peculiar to the Swiss approach to research and innovation is the interaction with society. This translates, as highlighted in the SNSF 2025-2028 Multi-Year Programme, into promoting active collaboration between scientific practitioners and non-scientific stakeholders from the industry and society at large as a driver to the rapid and extensive adoption of research outcomes.

Digitalisation – swissuniversities is the main page of swissuniversities dedicated to digitalisation, which includes sections on open access and open research data

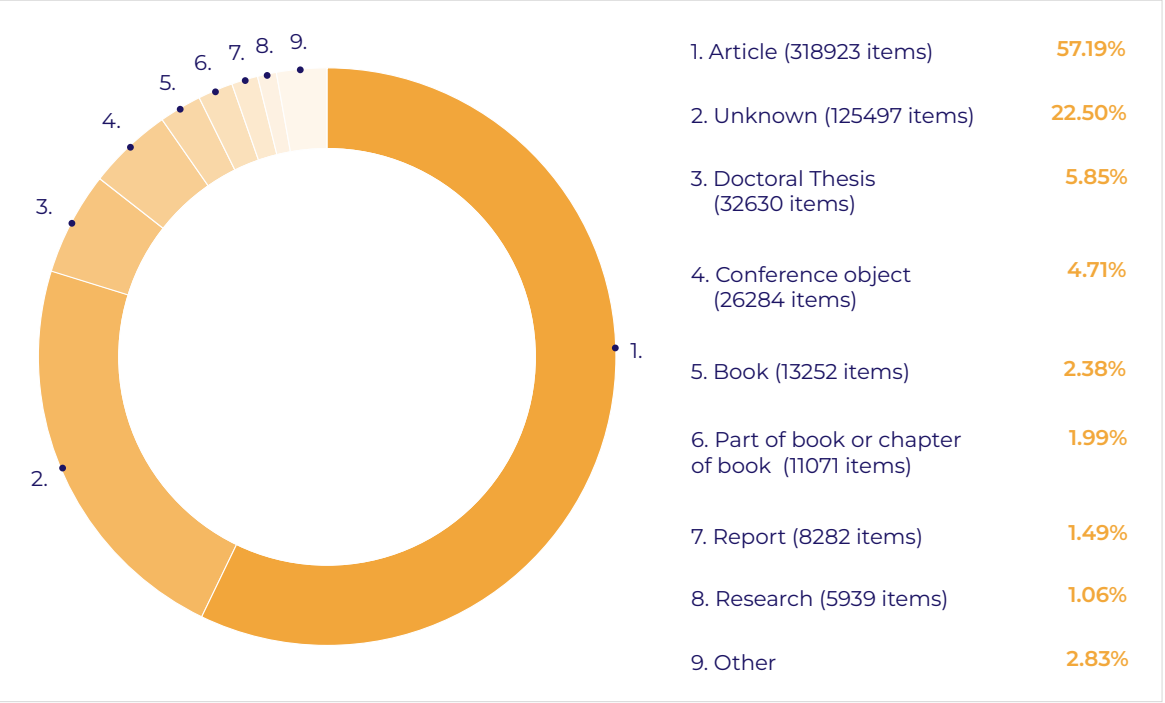
SERI, the State Secretariat for Education, Research and Innovation

opendata.swiss is the Swiss public administration's central portal for open government data. It also includes data relevant to the humanities

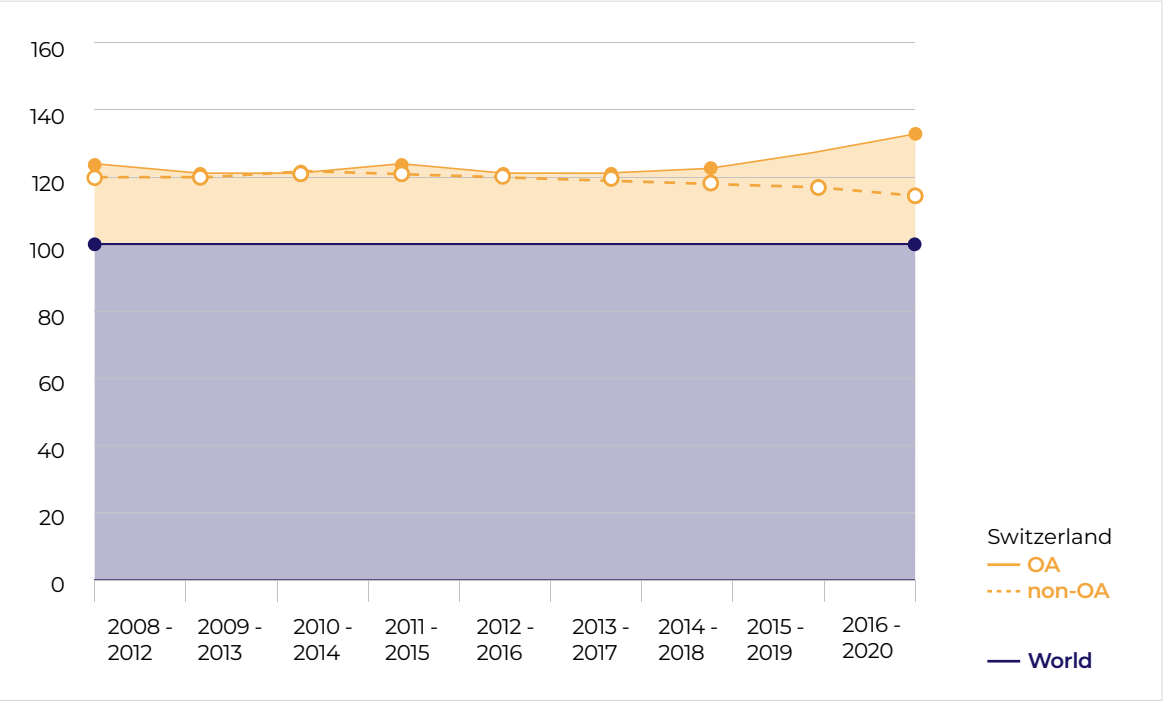
A conversation with Tobias Philipp, SNSF Open Access Coordinator, and Regula Graf, SNSF research assistant, 18 January 2024



[Fig. 6] Shares of open access and non-open access publications in Switzerland
Derived from Fig. 7 in "Open Access publications, 2008-2020", op. cit., CC BY-SA



[Fig. 7] Open access scholarly publications by document type as of 2018
Adapted from "Open Access in Switzerland", OpenAire (file now available on Wikimedia Commons), CC BY 4.0



[Fig. 8] Evolution of the impact (Relative Citation Ratio) of open access and non-open access publications from Switzerland
Derived from Fig.10 in "Open Access publications, 2008-2020", op.cit., CC BY-SA

1.2. Creative Commons licences and copyright

Open science needs two substantial prerequisites to work: a robust technological infrastructure and a clear legal framework. Digitalisation maximises the sharing possibilities of research-related materials and outputs and the correlated benefits. The following chapters provide guidance on specific tools and resources of the digital infrastructure and advise how to authorise the use of your work and how to benefit from open content. Licensing your work according to the open science principles necessitates early decision-making throughout your research process. So, let us start with an overview of copyright, the context out of which Creative Commons licences (also known as CC licences) originated and within which they operate.

1.2.1. Copyright, an overview

a. What is protected by copyright (and what is not)

Under international copyright standards, any creative work developed by a human is automatically granted protection for a designated period, provided it demonstrates a sufficient degree of originality. The designated period typically extends until 70 years after the author's death, though this regulation may diverge across jurisdictions. When protection expires, the work enters into the public domain. Copyright, however, does not apply to facts, concepts and ideas.

An area that requires special attention, which is subject to emerging new legislation, is AI-generated content. The output of a generative AI is not protected by copyright as it is not created by a physical person. Ongoing controversies revolve around establishing the threshold at which a work is created by a person with the assistance of an AI tool versus when a work is generated by AI without substantial human input.

b. Transfer of rights

Copyright systems are composed of two groups of rights:

- moral rights consist of the right to attribution (recognition of authorship) and the right to the integrity of the work, which restricts modifications to the original creation. These rights remain with the author and cannot be transferred.
- Economic rights (also called Property rights) are about whether, when and how a person can exploit a work, either digitally or physically. They can be transferred to third parties (totally or partially) by contract, by law or by institutional regulations. Copyright agreements, publishing contracts and licences regulate the economic rights of a work, such as its reproduction, distribution, modification, adaptation, sharing, access and availability on a specific website.

There are two principal methods for copyright holders to transfer economic rights to someone else:

- transfer of ownership involves the assignment of all or some economic rights to a third party, thereby making them the copyright holder. This scenario frequently arises with employers and is common in traditional publishing contracts.
- A grant of permission to use the work in a certain way through a licence without transferring ownership, e.g. a Creative Commons licence. In this case, the licensee is only a user and does not own any rights over the work in question. An exclusive licence prohibits the rights holder from granting similar licences to others. A non-exclusive licence, on the other hand, allows multiple licensees concurrently.

A licence may be addressed to an unspecified range of potential users (pre-defined licence) or tailored to specific persons (specific licence agreement). A specific licence agreement usually has the form of a contract that is signed by all involved parties, while pre-defined licences are accepted simply by using the work and/or data in question. Creative Commons licences are an example of pre-defined licence contracts.

For instance, if a work is intended for a particular event or occasion, such as a specific webinar, users have the option to use a work licensed under a Creative Commons licence or bespoke a specific licence agreement by seeking permission from the right holder or the Collective Management Organization (CMO) → 3.4.1. for the designat-

ed use during that specific event.

Copyright laws do not prescribe a specific form for the contract to be valid. Even an oral exchange or an email can suffice. Rights can be transferred or granted through an agreement (a contract or a licence), law, or institutional regulation (such as a university's policy). However, for evidentiary purposes in the event of misunderstandings or disputes, it is advisable to clarify all aspects of the agreement in a separate document and have it signed by both parties for clarity and legal assurance.

c. Rights holders and owners of copyright

The core principle of intellectual property is the exclusive right of the holder to determine the use of their work. The term "right holder" refers to those owning some or all economic rights of the work, allowing for multiple right holders. Initially, the author is automatically the primary right holder, retaining certain rights even after transferring others. For instance, if a writer assigns editing and publishing rights to Publisher A, the author remains the right holder of unassigned rights, enabling opportunities like translating and publishing through Publisher B. If all rights are transferred, the author loses right holder status, requiring permission for any subsequent use of the work.

d. Public interest and exceptions

National and international copyright laws strive to establish a balance between the interests of right holders and the public. Consequently, copyright exclusivity is not absolute. Exceptions within copyright law prioritise public interest in specific situations, such as private use, educational purposes, text and data mining for research, the right to parody, the right to quotation, etc. They enable users to benefit from existing works without requiring the right holder's permission. These exceptions are legally defined and impose specific conditions on the use of the work, e.g. attribution is always mandatory.

If none of the exceptions apply and the work has not been released under a predefined licence, the user must enter into a licence agreement with the copyright holder in order to lawfully use the work.

e. Related rights

Copyright law encompasses not only copyrights but also the so-called related rights. These protect individuals and entities involved in disseminating copyrighted or folkloric works, even if they are in the public domain. Related rights extend to performers (like singers, actors, dancers and musicians), sound recording producers and broadcasters. They offer a lighter protection than copyrights but still safeguard the contributions of those involved in the production and distribution of creative works. For instance, while a song's composition and lyrics are protected by copyright for the composer and songwriter, related rights protect those involved in its performance, production and broadcasting. Producers of sound recordings also receive protection against piracy.

Related rights give performers control over the fixation (i.e. recording), broadcasting and public communication of their performances, requiring consent or equitable remuneration. Broadcasting organisations can authorise or prohibit rebroadcasting and reproduction of their broadcasts, while phonogram producers have rights over the reproduction, importation and distribution of their phonograms. When multiple performers jointly perform a work, protection applies to the group as a whole, requiring common agreement for the use of their performance recordings. A designated representative can make decisions for the group.

f. Differences amongst jurisdictions

When working across countries, it is essential to be aware of the variations in national copyright laws. The main areas where differences may occur are the lifespan of copyright, fixation as a requirement for copyright to apply and exceptions versus fair use. The latter, for example, is in force in US common-law legislation. Another notable peculiarity of US copyright law is the requirement of registration to enforce copyright in court.

1.2.2. Copyright in Switzerland

In Switzerland, copyright matters are governed by the Federal Act on Copyright and Related Rights (CopA), whose latest revision entered into force in April 2020.

The Swiss Federal Institute of Intellectual Property (IPI)

"Copyright and open access in Switzerland", by Suzanna Marazza, competence centre CCdigitallaw, Università della Svizzera Italiana, 15 February 2023

a. What is protected by copyright
In Switzerland, the approach to copyright aligns closely with the common international standard. Since April 2020, the updated Swiss Copyright Act has extended copyright protection to include photographs of three-dimensional objects, even if these objects lack originality. This amendment affects various types of photographs such as press photos, profile pictures, family portraits, or ordinary photos of items for sale. The duration of copyright protection is until 70 years after the author's death. However, there are two notable exceptions:

- copyright protection for computer programs lasts only until 50 years after the author's death;
- photographs that do not exhibit originality are protected for 50 years from the time of their capture (if this is unknown, from publication), irrespective of the photographer's lifespan.

b. Moral and economic rights
Beyond the conventional moral rights, article 9/2 of the Swiss Copyright Act recognises the author's right to first publication, empowering the author with the discretion to decide when, how and whether to release the work for the first time.

c. Rights holders and owners of copyright
The principle is established in articles 9 and 10 of the Swiss Copyright Act. Article 17 of CopA outlines a specific provision for computer programs: "Where a computer program has been created under an employment contract in the course of discharging professional duties and in fulfilling contractual obligations, the employer alone shall be entitled to exercise the exclusive rights of use".

d. Public interest and the exceptions
The Swiss Copyright Act establishes some exceptions to copyright. The following selection is relevant to you.

- Private use (art. 19/1/a CopA): You are allowed to share data within a circle of persons closely connected to each other (e.g. close friends, family members, flatmates). This exception is restrictive and does not extend to social media platforms; Facebook "friends" for example are not included.
- Education purpose (art. 19/1/b CopA): You can share copyrighted content within the confines of a lecture or class, but not beyond this context (e.g. the whole school or among colleagues from other institutions). The same principle and limitation apply to distant learning. Modifications to the content are allowed. If the work is commercially available, either online or in a physical store, only an excerpt can be shared. If the work is no longer commercially available, sharing a copy of the entire work is permitted.
- Use within a company (art. 19/1/c CopA): You can distribute a copy of the copyrighted content to colleagues working within the same institution. If the work is commercially available, either online or in a physical store, only a copy of an excerpt can be shared.
- Orphan works (art. 22b CopA): You can reproduce a work if its right holder is unknown or cannot be found following a diligent research effort, provided that such use is notified to the corresponding CMO (e.g. ProLitteris).
- Archive and backup copies (art. 24 CopA): Public and publicly accessible libraries, educational institutions, museums and archives are allowed to make a single copy of rare, valuable works, to

secure and preserve their collections insofar as these copies are not made for financial or commercial gain. Only one of the copies can be made accessible to the public: either the original or its copy (which could be digital).

- Temporary copies (art. 24a CopA) which are technically needed to process the transmission of copyrighted data are permitted.
- Data mining (art. 24/d CopA): You can use protected content, if legally available, for methodologies/practices made possible thanks to the use of new digital technologies (e.g. data mining or data scraping, the practice of analysing large databases in order to generate new information).
- Right to quotation (art. 25 CopA): You can quote content as a reference, comment, or demonstration of the quoting work. Only the portion of the work necessary for these purposes may be used, not a broader sample. Quoting an entire work is permissible only when altering it would distort its meaning, an interpretation that is not accepted by other countries. Additionally, the quotation should not hamper the quoted work's economic viability or infringe upon the author's interests.
- Works in public premises (art. 27 CopA): According to this, a "work permanently situated in a place accessible to the public may be depicted; the depiction may be offered, transferred, broadcast or otherwise distributed"; "the depiction may not be three-dimensional and it may not serve the same purpose as the original".
- Reporting current events (art. 28 CopA): Short excerpts from press articles, or radio and television reports can be reproduced, distributed, broadcast or retransmitted for the purposes of reporting current affairs.
- Right to parody (art. 11/3 CopA): Existing works can be used for the creation of parodies or other comparable variations on the work, provided that the character of parody and critics is understandable.
- Use of works by persons with disabilities (art. 24c CopA): Copyrighted works can be reproduced and minimally adapted for the benefit of disabled individuals, without the need to seek authorisation from the rights holder. This exception does not extend to transforming the work in a different form, such as audio descriptions of a text or of a film. It allows reproducing and distributing copies of works in a form that facilitates access for disabled people. Distribution of such forms can be made online, but access must be limited to the circle of disabled individuals. Unrestricted public access is not allowed. Moreover, such copies must be distributed at the cost price of the original work (no extra cost for the adaptation is accepted). Importing and exporting reproductions are permitted under the same conditions and only if they are distributed by authorised organisations (non-profit organisations assisting disabled people).

e. Related rights

In Switzerland, related rights are regulated by articles 33 and following of the Swiss Copyright Act. Performers, producers and broadcasters are granted some exclusive rights for their performances or fixed production, and performers are granted the moral right to be recognised, ensuring they are credited for their contributions to a work. According to article 39 CopA, "protection begins with the performance of the work or of the expression of folklore by the performers, with the publication of the phonogram or audio-visual fixation, or with its production if it is not published, it ends after 70 years. Protection of a broadcast begins with its transmission; it ends after 50 years or with the transmission of the broadcast; it ends after 50 years".

Copyright in Switzerland related to musical sound fixed in a recording medium (e.g. classical music tracks fixed in a CD): the composer is granted copyright protection (until 70 years after his/her death), while musicians (the orchestra) performing the composition and the producer who recorded the performance to fix it in the CD are granted related rights (protection lasts for 70 years, independently from musicians and producer's life). To use a track that is fixed in a medium, one should consider all layers of copyright and related rights protection: those of the composer, of the orchestra, of the producer and of the broadcaster if the performance was broadcasted on radio or TV. In the case of unfixed performance (live concert), Swiss law protects the music composition and lyrics (copyright) and the live performance of the musicians (related rights).

f. Books
According to Swiss law, copyright protection for a book extends until 70 years after the author's death (or the last author, in case of joint authorship). Translations of books are protected for 70 years after the translator's death. If a book is a collection of distinct works (e.g. consisting of autonomous chapters or articles), each chapter or article enjoys individual protection and the book itself is also protected as a collection, provided that the selection and structure of these chapters or articles demonstrate originality.

Some key specifics are as follows:

- for joint authors, the use and publication of the book require unanimous agreement among the authors;
- if a work is conceived and led by a publisher, Article 393 of the Swiss Code of Obligations assigns copyright to the publisher;
- Art. 382. paragraph 3, of the Swiss Code of Obligations grants authors the right to republish their contribution after three months from its first publication, but agreements between authors and publishers may specify different terms, including a longer embargo period.

g. Education material
Educational material such as text, images, videos, charts, or a collection of works, is subject to copyright rules equivalently. The standard copyright norms apply accordingly.

h. Data and databases
Raw data that represent natural phenomena, like formulas, algorithms, temperatures, or factual information, lacks ownership. Legally owning this kind of data, akin to owning material goods, is not currently feasible. The legal status of data, though, is challenged by technological developments (i.e. blockchain, artificial intelligence) and is a subject of debate in Switzerland, Europe and internationally. While some argue that non-physical goods cannot have property rights, others view data as res digitalis, rendering it eligible for property rights. Copyright applies to the expression an author gives to data, contingent on its character of originality (linked to copyright requirements), excluding protection for the underlying idea, logic or concept. As an example, copying a chart without permission is a copyright violation, but creating a different chart with the same logic or with the same raw data is not.

Originality determines copyright protection for lists, charts, diagrams, or schemes created by individuals. While an originally structured and selected database is protected by article 4/1 of the Swiss Copyright Act, this aspect is irrelevant to European legislation which provides a right for databases based on substantial investment in the acquisition, verification or presentation of data (Art. 7/1 Directive 96/9/EC). However, individual data, lacking original expression and not related to identifiable persons (which are then subject to data protection laws), remain unowned and devoid of intellectual or civil property rights.

i. Software
International copyright protection applies to a computer program when its source code is deemed a literary and artistic work under Article 2 of the Berne Convention for the Protection of Literary and Artistic Works, provided the required level of originality is met. Software is safeguarded accordingly in Europe by Directive 2009/24/EC and in Switzerland by art. 2 para 3 CopA. The Swiss doctrine defines software (which is subject to varying interpretations) by referring to the U.S. Copyright Act, whose §101 states that "A computer program is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result". Copyright protects the expression, not the underlying idea, allowing different expressions with the same output without infringing on each other. Proprietary licences or open licences, like Creative Commons or Free and Open Source Software (FOSS) licences, govern a computer program, offering different levels of user freedom and accessibility. A computer program may also be patentable if it introduces a technical innovation.

j. Design
Copyright covers drawings and visuals as artistic creations when the aforementioned conditions of originality are fulfilled. Therefore, when it comes to design, what copyright protects is the visual representation itself, rather than the object depicted in it. The shape of an object per se, if presenting a new and original exterior appearance, can be registered in the Design Register for design protection according to the Federal Act on the Protection of Designs.

k. Audiovisuals, theatre, dance, circus, films and multimedia
Copyright protects any text, sheet music, script, drawing, image, visual, set design, costumes, architectural buildings, choreography etc. produced for theatre plays, audiovisual, films and multimedia. Related rights extend to the recording in a fixed medium, the performance by actors, singers, musicians and others as well as the producer's contribution to the recording on a medium capable of public communication. Copyright also protects each audiovisual, theatre, dance, circus performance, film and multimedia work as a whole.

1.2.3. Creative Commons licences, the basics

a. What are CC licences?
Creative Commons (CC) licences promote the sharing and reuse of creativity and knowledge by blending the default "all rights reserved" with the "some rights reserved" approach to copyright, thus enabling rights holders (licensors) to release some of the rights that are granted by copyright law. Through CC licences, authors authorise others (licensees) to use, share and modify licensors' creative works within clearly defined conditions for reuse.

These are the main characteristics of CC licences:

- While permitting licensees to copy, modify and distribute their work, creators retain the copyright and their right to be credited.
- CC licences are free of charge and can be used for any type of copyrighted work (including research data, educational resources, scientific publications, music, pictures, databases, sound, video, etc), except for software.
- They are non-revocable: licensors are not allowed to change towards a more restrictive licence as this would break the whole system. However, licensors are always allowed to change the licence to a less restrictive one, as this change does not create any troubles with previous work usage.
- CC licences are non-exclusive, meaning creators and owners can enter various licensing arrangements for the same work at any time. This property is, at times, referred to as dual licensing.

b. What is the relationship between CC licences and copyright?
CC licences are built within copyright law and can be applied only to copyrightable works by the right holder and not to the works included in the worldwide public domain. Other types of intellectual property, like patents and trademarks, are not covered by CC licences. Importantly, CC licences do not limit or suppress any rights granted under the exceptions and limitations of copyright. They work internationally and have the same lifespan as copyright.

c. How are CC licences designed?
CC licences have a three layers design:

- the lawyer-readable layer is written in

legal code and lists all terms and conditions in a way that can be enforced in court;
- the human-readable layer is a summary of legal terms and conditions written in plain, understandable language;
- the machine-readable layer is written in a format that can be understood by search engines, software and other kinds of technology.

d. What are the CC licensing options?
CC licences result from a combination of one or more of the following four elements:

Icon	Right	Description	Open
	BY = Attribution	The author (who may not be identical to the right holder) must be credited. All six CC licences resulting from the combination of the four elements listed here include this condition	Yes
	SA = ShareAlike	Remix, adapt or build upon the material is allowed, but you must licence the modified material under identical terms	Yes
	ND = NoDerivatives	Remix, adapt or build upon the material is allowed, but you must licence the modified material under identical terms	
	NC = NonCommercial	Remix, adapt or build upon the material is allowed, but you must licence the modified material under identical terms	

Content derived from Creative Commons, CC BY 4.0.
Icons by Creative Commons are trademarked

e. CC licences and the public domain
Creative Commons also offers two public domain options:

Button	Name and Abbreviation	Description	Open
	CC0 = Zero	If you want to dedicate your work to the public domain, you can use CC0. Designed as a waiver of copyright, it has a different legal status depending on jurisdiction. In the US, it works as such and consequently is not a licence. In countries like Switzerland and the EU member states, where creators are not allowed to renounce their moral rights, CC0 is technically a licence, through which you declare that you will tolerate any kind of (re) use, unconditionally, for any purpose and worldwide. Attribution is not mandatory for CC0, although including the author is always good practice	Yes
	Public Domain Mark	This mark informs the public about the public domain status of a work. It does not have a legal effect and is used to signal that a work is free of all copyright restrictions	Yes

The CC0 and Public domain marks by Creative Commons are trademarked

f. Open versus non-open CC licences

According to the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, "all users should have a free, irrevocable, worldwide right of access and permission to copy, use, distribute, (...), make and distribute derivative works in any digital medium, for any responsible purpose, subject to proper attribution of authorship". Only CC0, CC BY and CC BY-SA are fully aligned with this definition.

There are three main questions that a licensor must consider when choosing a CC licence:

- Do I want to allow commercial use?
- Do I want to allow derivative works?
- If so, do I want the adaptations to be shared under identical terms?

The answers to these questions will guide the licensor in choosing one of different licence options. The following spectrum explains the distinctions between them.

Reserved rights	Permitted reuse	Icon	Licence name	Abbrevation	Description	Open
			No rights reserved	CC0	Anyone can use and adapt the work for any purpose (also commercial)	Yes
			Attribution	CC BY	Anyone can use and adapt the work for any purpose (also commercial) as long as they give credit to the creator	Yes
			Attribution-ShareAlike	CC BY-SA	Anyone can use and adapt the work for any purpose (also commercial) as long as they give credit to the creator and share the derivative work under identical terms	Yes
			Attribution-NonCommercial	CC BY-NC	Anyone can use and adapt the work for non-commercial purposes only as long as they give credit to the creator	
			Attribution-NonCommercial-ShareAlike	CC BY-NC-SA	Anyone can use and adapt the work for non-commercial purposes only as long as they give credit to the creator and share the derivative work under identical terms	
			Attribution-NoDerivatives	CC BY-ND	Anyone can use and share the unadapted work for any purpose (also commercial) as long as they give credit to the creator	
			Attribution-NonCommercial-NoDerivatives	CC BY-NC-ND	Anyone can use and share the unadapted work for non-commercial purposes only as long as they credit the creator	

[Fig. 9] The Creative Commons licence spectrum
Derived from: visual by Shaddim, Wikimedia Commons; 3.3 Licence types, Creative Commons Certificate for Educators, Academic Librarians, and Open Culture; CC BY 4.0. CC buttons are trademarked by Creative Commons

g. CC licence versions
The number that follows the CC licences' names indicates their version. Compared to the previous ones, which were adapted to national legislations, version 4.0 is globally applicable. Creative Commons is presently addressing the issues raised by the fast-spreading use of generative artificial intelligence tools and will eventually release a new licence suite that considers AI integration. It is advisable to either use the latest version of the licence or substitute the number with "all".

h. What if someone does something with your CC-licensed work you disagree with?
By giving your work a CC licence, you allow all use which complies with this licence. But you can always disconnect your name from usages you disagree with by waiving the attribution requirement and asking that the licensee remove the attribution information. Additionally, remember that anyone modifying your CC-licensed work must indicate that the original material has been modified. While doing so, any changes made to your original material cannot be attributed to you.

"Creative Commons and open science for arts, design and music", by Brigitte Vézina, Creative Commons International, 8 February 2023, 8 March 2023, 5 April 2023

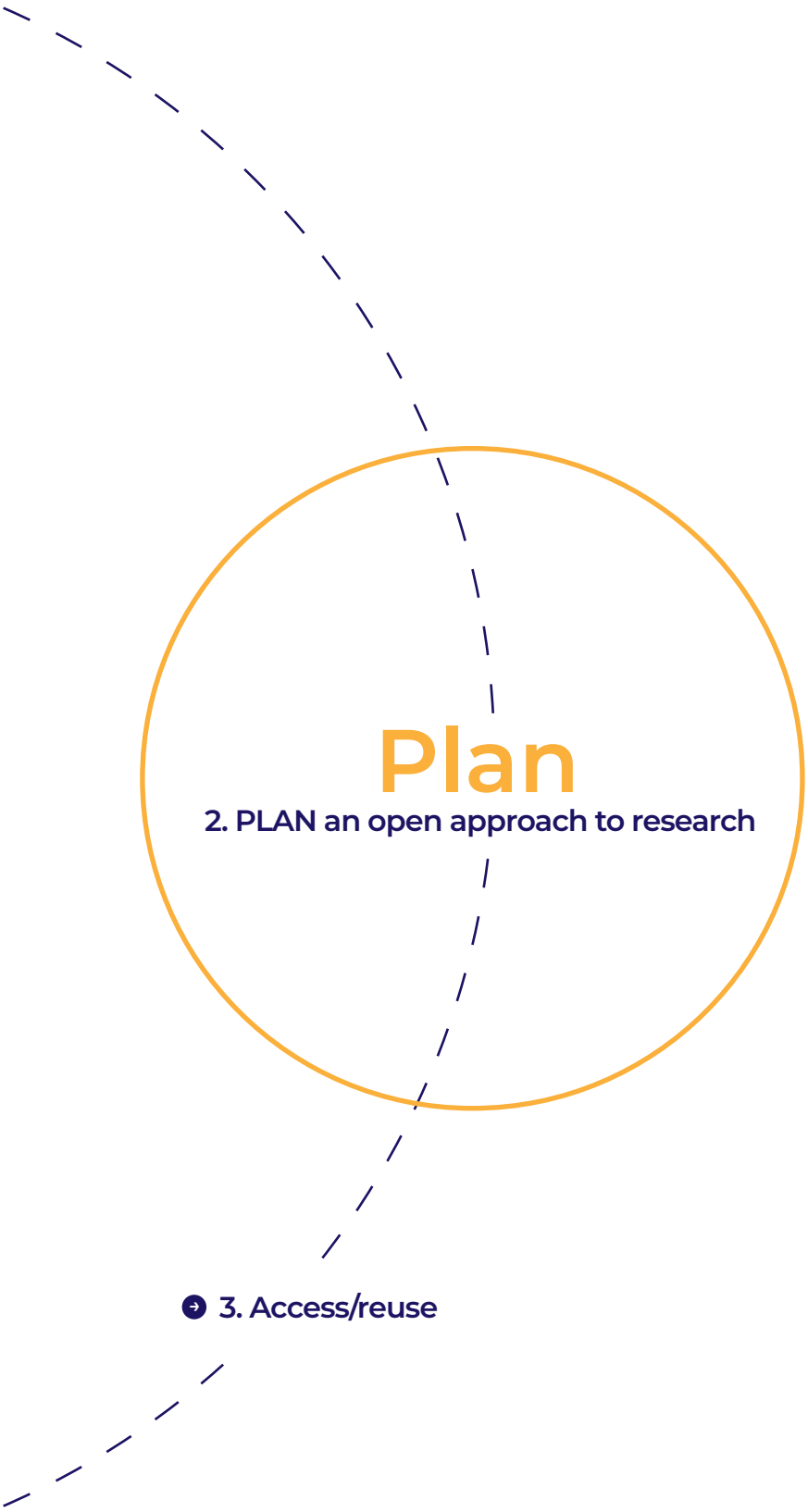
"Creative Commons: the challenges and opportunities of Creative Commons licences for GLAMs – galleries, libraries, archives and museums", by Brigitte Vézina, Creative Commons International, 3 November 2022

"Open: How to Open Your Content and How to Re-Use Open Content", Iolanda Pensa, SUPSI DACD, 9 October 2023

1.3. Recommendations for the licence notice

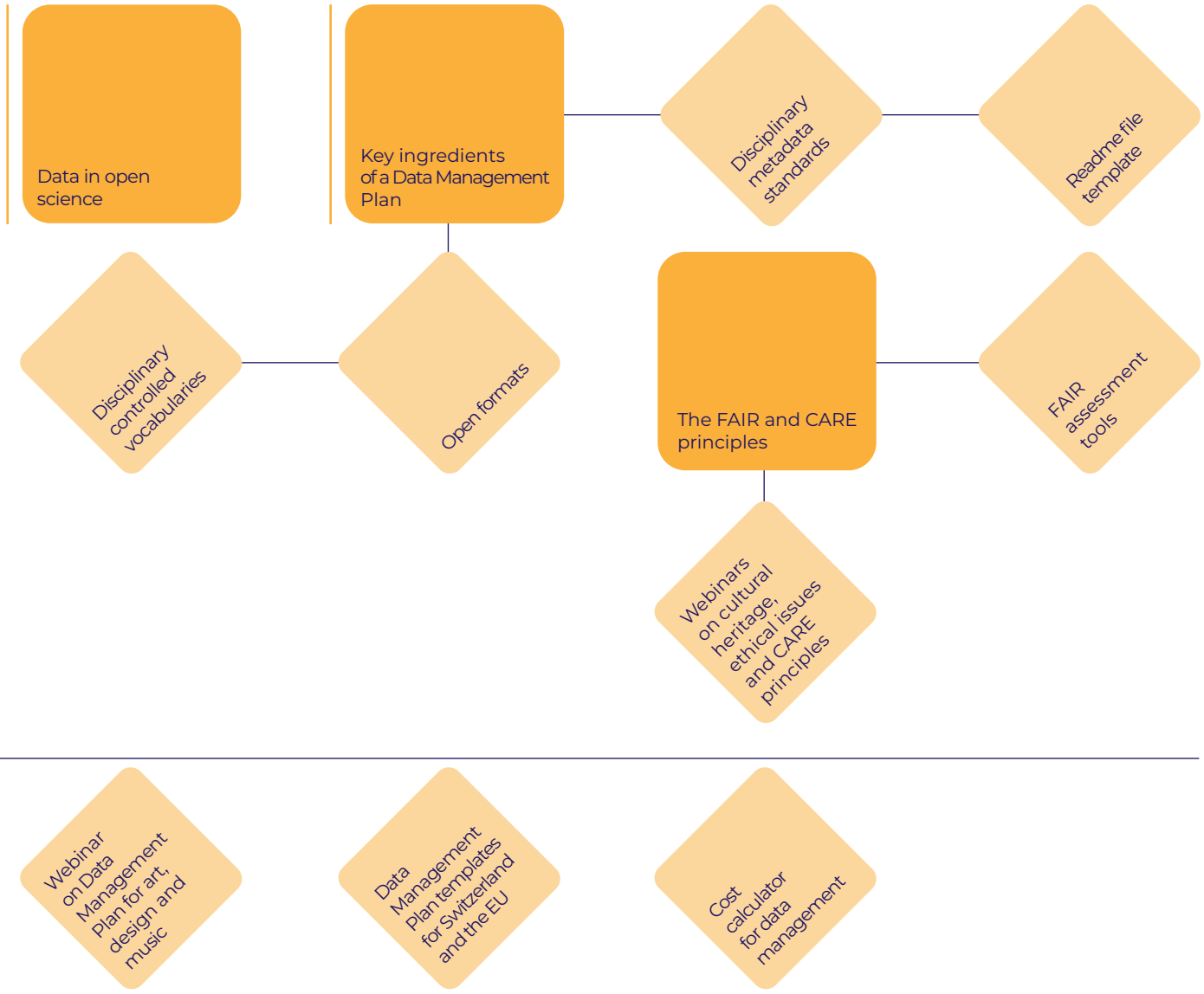
As you navigate these guidelines, you will learn more about the proper application of the Creative Commons licences. There are a few general recommendations to keep in mind:

- always attribute works even when not formally required, e.g. when the work is in CC0 or in the public domain. Citing sources and acknowledging the work of authors and institutions is a tenet of research ethics and integrity, and is important for valuing everyone's work.
- To facilitate reuse, always indicate the terms of use of your data, even when the content is not copyrighted or is in the public domain. In the latter cases, use the CC0 licence (preferably) or the public domain mark.
- Include licences correctly by linking the licence text and embedding the licence metadata that provides information about the licence itself and the attribution details in all documents and websites you produce.



What is a Data Management Plan and why should I develop one?

How do I develop my Data Management Plan?


Data in open science
Key ingredients of a Data Management Plan
Disciplinary metadata standards
Readme file template
Disciplinary controlled vocabularies
Open formats
The FAIR and CARE principles
FAIR assessment tools
Webinars on cultural heritage, ethical issues and CARE principles
Webinar on Data Management Plan for art, design and music
Data Management Plan templates for Switzerland and the EU
Cost calculator for data management
Learn: Subtopic
Tools

2. PLAN an open approach to research

You have to plan for your research with sharing and the afterlife in mind. The Data Management Plan is your blueprint.

Slides by Erzsébet Tóth-Czifra on "What is data in the Arts and Humanities?", an introduction to the DESIR "Shaping new approaches to data management in arts and humanities" Winter School, Lisbon 2019

Parthenos training on how to "Manage, improve and open up your research and data"

"Data Management Plan: specifics of data in the arts and humanities", by Deborah Thorpe, research data steward, University College Cork, 31 May 2023

2.1. What is a Data Management Plan and why you should create one

A Data Management Plan (DMP, at times also called a Research Data Plan) is a formal document that succinctly outlines the lifecycle of your data, clarifying the principles and the means you plan to adopt to collect, manage, store and potentially share your data during and after a research project. It is usually short and written in plain language for broad accessibility. It is a dynamic, living document, adjusted as needed throughout your research.

A Data Management Plan involves extra work, but its benefits outweigh the inconvenience:

- it is often a requirement of academic and research institutions, publishers and funding institutions;
- it establishes clear workflows and guidelines surrounding data management: such as determining necessary authorisations, choosing file formats, organising folders and setting file naming conventions, all the decisions that you should take early on;
- it allows you to identify and plan for the resources, tools and expertise needed for data management;
- it maintains the data underlying publications, allowing for transparency and validation of results;
- it allows anybody to understand, discover and reuse your research data at any time, ideally making it future-proof: this is important for new team members who may join the project at a later stage, for researchers who may generate new projects building on your work and for yourself when revisiting data;
- it can support the dissemination and valorisation of your research results;
- in the long run, it reduces the administration burden on yourself;
- it ensures the longevity of your research, as data remains relevant long after publications have become outdated.

2.2. Key ingredients of a Data Management Plan

First, let us have a look at some basic terms related to data management.

2.2.1. Research data

In the context of data management, all materials and assets that scholars collect, generate and use during all stages of their research cycle are referred to as data. These include, among others, archival notes, timelines, spreadsheets with a listing of historical events, photos, annotated bibliographies, video recordings of interviews, their transcriptions and translations, and research websites. If you develop or customise software code, algorithms and protocols to answer your research questions, these are also considered research data (otherwise simply tools).

Publications are not typically counted as data in a STEM research Data Management Plan, only the data included in them are. However, in the humanities, publications per se are often very important research inputs. For example, they might be used as an argument for your research. In such cases, it is useful to record them as data.

To be openly accessible, your data and datasets (i.e. structured collections of data) should be digitised, ideally including your handwritten archival notes. When this is not possible (e.g. a performance), its digital description will suffice (e.g. a recording accompanied by a textual description of it).

2.2.2. Metadata, Readme file and controlled vocabulary

a. Metadata
For your research outputs to be openly accessible, you need to develop documentation that enables others (and your future self) to discover, use and make sense of your data. Metadata plays a crucial role in this; it is essentially data about data. In the context of data management, metadata entails structured information, which describes characteristics of data such as content, quality, format, temporal and spatial coverage and legal status. Most repositories require a minimum set of metadata, and they may have a standard template for you to compile. If this is not the case and you have to do it yourself, you can consult examples such as the metadata required by Zenodo, a general-purpose open repository developed in Europe and operated by CERN.

Metadata is not only meant for humans but also designed to be machine-readable too. Its quality influences how effectively your data can be found and potentially reused. It should be as rich, meaningful and standardised as possible. To this purpose, you should structure your metadata according to metadata standards and adopt a controlled vocabulary.

b. Metadata standards
Metadata standards provide specific data fields to be used in describing data. It is advisable to consult the directory for disciplinary metadata standards. If no suitable standard exists, use a generic metadata schema such as Dublin Core or the DataCite Metadata Schema.

c. Controlled vocabularies
Adopting a controlled vocabulary for your metadata ensures that the terms you use to describe your data are consistent and, if possible, in use by other scholars as well. Check whether some of the general topics and terms (persons, locations, concepts) that you focus on have already been assigned persistent identifiers or URIs (Uniform Resource Identifiers) in one of the ontologies that are relevant to your field. You can build upon existing controlled vocabularies if the terms or words that you need are not there.

Controlled vocabularies also provide a consistent way of dealing with uncertainty, which you often encounter in humanities research, e.g. by using words such as "circa" for uncertain dates and terms such as "anonymous" for uncertainty regarding authorship.

d. Batch metadata
It is advisable to collect batches of discovery metadata to form the basis of the repository object using a template for each data deposit. The template could be provided by your chosen repository: e.g. the Digital Repository of Ireland has its own Batch Metadata Template; the Dublin Core Metadata Generator is another useful resource. Ideally, you should populate this metadata in the template as you proceed with the project

The Library of Congress Subject Headings

The Getty Vocabularies for the visual arts

BARTOC, the Basel Register of Thesauri, Ontologies & Classifications

rather than doing so at the end of your project when you are pressed for time.

e. Readme file
Any logical cluster of data you collect or produce (like a collection of photographs or a spreadsheet) as well as your final paper has to be accompanied by the Readme file.

This file describes your data and contains metadata and information such as:

- the title of the dataset, creators, dates, keywords, funding sources;
- a description of what data each filename contains;
- methods for data collection/generation/curation;
- a list of all the column names used in a spreadsheet;
- explanations of abbreviations.

The Readme file should be stored together with your data, thereby becoming part of your documentation. The Guide to writing "readme" style metadata (with template) can support you: tailor it to suit your needs.

2.2.3. Persistent identifiers and PID Graphs

A persistent identifier (PID) is a long-lasting reference to a digital object ensuring that the digital object will be findable in the future even if its associated URL changes over time. Digital objects include your identity as a content creator, publications or other research outputs, organisations and funding bodies.

PIDs and the metadata associated with them are both visible to machines and humans and help them describe the type of resource, where to find it, and how to reuse it. PIDs enable the continuous linking of articles with the underlying data, software and funding information across the research lifecycle to support research reproducibility and maintain the footprint for each output over all its versions.

a. ORCID ID
In academia, the Open Researcher and Contributor Identifier (ORCID) is the most widely used ID. Once you register on ORCID and have your ID, all information (CV, grants, publications, projects and institutions you are involved in...) you enter into your profile becomes visible without you having to copy them to different platforms and sheets. Adding your ORCID ID to your publications and datasets, email signature, applications and other academic works immediately and semantically connect them. This information can be exchanged effectively across databases, countries and academic disciplines. It is the standard requirement when submitting a research article or grant application, or depositing research data.

Your ORCID ID follows you no matter if you change your name or move to a different organisation, discipline or country. You do not need to hold an academic position to create and keep it: participating in research, scholarship or innovation is enough.

b. PID graphs
One of the most powerful aspects of PIDs are PID graphs, which enable persistent and machine-readable linking of different entities, expressing relationships within the research landscape, such as linking publications with underlying datasets, source materials, software or other relevant digital outputs; linking a dataset to documentation describing how the dataset was collected; linking authors to their publications (via ORCID IDs) or research funders to the projects or outputs they are funding. These links can even capture all these connections simultaneously, resulting in a robust, interconnected network of research resources.

c. Overview of commonly used PIDs

Abbreviation	Description	Typical content type	Where to get it
ORCiD	Your ORCID ID is a unique, open digital identifier that distinguishes you from every other researcher with the same or a similar name as you.	Persons	From ORCID
DOI	A DOI (Digital Object Identifier) is a digital identifier for objects (whether digital, physical or abstract), which can be assigned by organisations in membership of one of the DOI Registration Agencies. The two best-known ones are CrossRef, for journal articles and some other scholarly publications, and DataCite for a wide range of data objects including physical samples. DOI has a system infrastructure to ensure a URL resolves to the correct location for that object.	Most typically for research articles and books, but also other digital content types	From publishers with CrossRef or DataCite membership From institutional libraries that have DataCite membership From data repositories
ARK	ARK (Archival Resource Key) is an identifier scheme conceived by the California Digital Library (CDL), aiming to identify objects in a persistent way and widely used by libraries, data centres, archives, museums, publishers and government agencies.	Archival resources, datasets at all levels of granularity (large collections vs. pieces of a single document)	From repositories. To implement an ARK system, contact the California Digital Library (CDL).
HDL	Handles are unique and persistent identifiers for Internet resources, with a central registry to resolve URLs to the current location. Each Handle identifies a single resource and the organisation which created or now maintains the resource. The Handle system also underpins the technical infrastructure of DOIs, which are a special type of Handles.	Data sets (finished or unfinished) and other digital scholarly objects	From repositories or to implement a handle system, directly from the Handle.Net Registry
Wikidata ID	Wikidata is used for the internal organisation of the Wikimedia projects' knowledge base as well as for their connection to other databases. Each Wikidata entity is identified by an entity ID, which is prefixed with Q (e.g. Q12345), properties are prefixed by P (e.g. P569) and lexemes are prefixed by L (e.g. L1).	Entities, properties, lexeme	Wikidata

The overview above does not include other PID types that are primarily used by the library and archival domain such as URNs, PURLs, VIAF IDs, or PIDs that are specifically designed for one repository such as arxiv ID or idHal.

FREYA – Connected Open Identifiers for Discovery, Access and Use of Research Resources offers a detailed guide with decision trees to select PIDs for different content types or organisations, with different budgets

A PID Forum where you can post PID-related questions

2.2.4. Open file formats

Open file formats are easily accessible and preservation-friendly formats without legal or technical restrictions, meaning that they do not require proprietary software, hardware or purchase of a commercial licence. These formats are compatible with both proprietary and free or open-source software, making them ideal for long-term preservation. Even if you work in proprietary environments, such as InDesign, Atlas.ti or MaxQDA, at the end of your workflow, it is advisable to convert the outcomes to open file formats, which can be easily shared and are generally more stable over time – an approach far easier than building a time machine!

The Preservation guide by OpenAIRE, a non-profit Partnership of 50 organisations to support European research through a permanent open scholarly communication infrastructure, sums up the preferable file formats in an overview chart. The chart is in line with the Library of Congress Recommended Formats Statements

The Dutch Data Archiving and Network Solution (DANS) lists preferred formats providing further information on each one (for instance, explaining in what cases a .jpg file is suitable for long-term preservation and when not)

The list of file formats for archiving by ETH, with instructions on how to prepare your files

2.3. Principles: be FAIR

The FAIR Guiding Principles for scientific data management and stewardship have been developed to foster access to scientific data in a context where its volume, complexity and creation speed are increasing and where data has to be readable by both humans and machines. Since 2016, the FAIR principles have become a standard reference in open science. Your approach to data management and your Data Management Plan should adhere to these principles as much as possible.

FAIR is an acronym that can be broken down as follows:

- Findable: use persistent identifiers (all your research outputs need a DOI!) and ensure using rich, accurate, relevant and consistent metadata organised according to standard metadata schemes. This will make your data discoverable online. Additionally, specify if and how data are linked to other datasets and publications.
- Accessible: use standard protocols (usually https or FTP) and deposit your data in indexable repositories (that is, discoverable by search engine crawlers). Your data should be as open as possible and as closed as necessary. If an authentication and authorisation process is needed to access your data, make sure to provide instructions on how to access it.
- Interoperable: use controlled vocabularies and metadata standards that can be queried and indexed by other information systems, and represent your data and metadata through a formal, accessible and broadly applicable language. The ideal solution is open formats, but if that is not feasible, use largely deployed proprietary formats.
- Reusable: document your data so that others can interpret it correctly, including contextual information about how the data has been gathered and processed; adopt licences that allow reuse and remix and clearly indicate permitted reuse and rights holder; indicate a contact person. Make sure this information is in plain text; your metadata should be accessible even when the data is not.

When you deposit your research outputs in an open repository, the latter will guide you through the process, ensuring your outputs align with the FAIR principles. Ultimately, your goal is to achieve a FAIR-compliant open-access publication of your work. → 6.

✳ FAIR Guiding Principles for scientific management and stewardship: this is the official FAIR website

An explanation of the FAIR principles by the SNSF, summarised in plain language and with an overview of your duties as a researcher

An essential guide to FAIR research by Library Carpentry, which provides learning tools to librarians and information-related communities

Check if your research data is FAIR:

- through a questionnaire with NFDI4Culture FAIR Check or the ARDC FAIR data self-assessment tool
- automatically through a web service with F-UJI

The Open Access Barometer highlights the level of compliance of the most commonly available publishing routes:

	Description	Level of accessibility	Is it FAIR?
Open Access	Content is accessible for free without restrictions or registration with an open licence (CC0, CC BY, CC BY-SA)	Immediate and unlimited open access	Yes
	Content is accessible for free without restrictions or registration with a licence which does not allow commercial use nor derivative works (CC BY-NC, CC BY-ND, CC BY-NC-SA, CC BY-NC-ND)	Immediate Access with limitations regarding reuse	Yes
Free access	Content is accessible online for free but without a standard open licence (e.g. Creative Commons), reuse conditions unspecified	Fake open access	No
	Content is accessible online after registration	Not fully open	Depending on whether licensing information is clear, depending on hosting circumstances
Delayed open access	Content is archived inside the institutional repository and made public after a maximum 6 months (embargo)	Not fully open	Yes
Closed Access	Content is archived inside the institutional repository with limited access	Closed access with clearly defined access conditions and authorization mechanisms	Yes
	Content is securely stored on institutional servers with limited access. FAIR data are present. Data is private and cannot be shared. Access conditions are not defined.	Not open	No

2.3.1. Take extra CARE

The CARE Principles for Indigenous Data Governance complement the FAIR principles by adding a layer of respect towards Indigenous people whenever your research makes use of their data and knowledge. CARE stands for Collective benefit, Authority of control, Responsibility and Ethics. As a researcher, it is essential to articulate how you intend to use data involving Indigenous people (as collectives and individuals) and their territories, having their rights and interests in mind and empowering them to self-determine how the data is being used.

Local Contexts, a project dedicated to advocating for the sovereignty of Indigenous data since 2010, has created tools to ground intellectual and cultural property rights related to data, cultural heritage and genetic resources within digital environments. These are: "notices", intended for institutions and researchers who commit to upholding Indigenous rights and promoting the visibility and recognition of their knowledge and heritage; and "labels", intended for Indigenous communities to indicate how their knowledge and heritage should be managed. Through these tools, Local Contexts aims to circumvent the limitations imposed by copyright laws, which emerged in colonial times and do not adequately protect indigenous (nor traditional) knowledge.
While the main concern that inspired the CARE principles was to prevent further exploitation of Indigenous people, consider looking at them more broadly. A CARE approach signifies an awareness of power dynamics and of your ethical responsibilities as a researcher towards people you get involved with in your work. It promotes respectful relationship-building processes and considers differences across cultures; for instance, in some countries, society, as a whole, matters more than communities.

"Local Contexts: supporting indigenous data sovereignty and cultural authority in collections and data", with Jane Anderson (co-director, Local Contexts) and Corrie Roe (outreach manager, Local Contexts); moderator Floriane Morin, curator at the Ethnographical museum of Geneva, 13 September 2023

"Open access to cultural heritage: ethical issues", by Brigitte Vézina, Creative Commons International, 26 June 2023

2.4. Develop your Data Management Plan

To cultivate the right mindset, consider the factors that make it easy for you to collect data, ensuring that your data has that kind of quality and accompanying information. Some questions that might guide your thinking are:

- which factors contributed to the discoverability of the data?
- How were you able to access the data?
- What made you trust the creators?
- Were limitations like incompleteness or uncertainties indicated? If so, how?
- How did your research methods affect data collection?
- Conversely, how did the data collection affect your research methodology?

2.4.1. Data Management Plan's structure: the basics

There are different ways of structuring a Data Management Plan. Your funding body or the institution you work for might require a specific format – such is the case for the SNSF and many Swiss universities. Let us take a quick look at the main areas covered by all DMPs. Begin by providing a synthetic description of your research project, its focus and its purpose. In this introductory part, consider summarising overarching information, e.g. general principles and policies that you are going to adopt.

a. Data collection and documentation

In this section, you should describe your datasets and for each one, specify:

- whether the data is being collected, observed, generated by you or reused. Include information about its content, source, the agreements needed and collected; the file formats (both raw and curated); and the estimated volume. Remember that in the realm of arts, design and music, publications might be considered research data as well; so are software, code, algorithms and protocols if you customise or develop them.
- The methodologies, standards and quality assurance processes that you intend to apply. You should explain how you will organise your data (naming conventions, versioning) and what kind of documentation you will produce to make your data understandable to humans and machines (Readme files, metadata standards, etc.).

Here are some tips to ensure the quality of your data:

- map and document your workflow from the point of collection to the final format dataset. This will help others (and yourself at a later stage) understand how the data came about and how you processed it.
- Standardise data capture, data entry and recording methods;
- Create and maintain well-organised folder structures and document the criteria you used.
- Choose meaningful but brief names for your files and folders from the onset and define naming criteria.
- Ensure your actions are reversible:
  - make your raw data "read-only";
  - save modified files with a new name, incorporating the version number (not final, final-final...).
- Be as specific as you can about the exact version of the software you used.
- apply some strategies to improve the accuracy of your data, like:
  - using the available data validation functions in your software (e.g. Excel allows you to specify permitted values for a cell or range of cells);
  - checking your transcripts, especially if you are using a transcription service.

You may find the KONDA catalogue of problems associated with research data focusing on material cultural objects and related data models useful.

b. Ethical and legal compliance

It is essential to seek advice within your university as each institution has different requirements.

The main questions you have to address are:

- how will you manage ethical issues? Be very clear on how you will handle sensitive personal information, e.g. you will need to get consent from participants for preservation and sharing and to protect the identity of participants with appropriate procedures. These procedures, too, need to be established at the beginning.
- How will you manage copyright and intellectual property rights issues? You have to provide details on what licences you intend to apply and whether there are any restrictions on the reuse of third-party data.
- How will you collaborate with volunteers? You have to provide details on what licences you will apply for and under which conditions volunteers will be involved; you have to plan a consent form, which includes rights management, attribution or anonymisation.
- How will you collaborate with artists and creative partners? You have to provide details on what licences you will apply and under which conditions artworks will be produced; you have to plan an agreement which includes rights management, attribution and eventually, a fee.
- How will you manage collaborations with institutions (GLAMs) involved in your research project? You should inform the institutions about your project and plan an agreement about how you will use their data, credit them within the project and communicate the research results.
- How will you manage community rights and CARE principles? You should inform relevant communities about your project, collect feedback from them and integrate them into your practices. Eventually, you can involve relevant institutions as partner organisations in your research to make sure you include their feedback.

c. Data storage and preservation

This part is also strongly institution-oriented, so it is prudent to check your university's storage policies, facilities and advice first. The purpose of this section is to detail for each dataset how you intend to manage

your data during the active research phase and later for long-term preservation:

- list the solutions that you adopt to store and back up data during the research, also specifying, if relevant, how you manage data security and personal data protection;
- indicate what criteria you use to decide what data to preserve, what data curation procedures you plan, and where and for how long you want to preserve them.

d. Data sharing and reuse

Sharing, in this context, is to be understood as publishing and disseminating:

- indicate which data(sets) you plan to publish, where you will publish them, and how you plan to ensure their discoverability;
- consider who could be interested in reusing your data and plan to store your data in repositories visible and accessible to those users (you can store data in more than one repository);
- highlight any legal and ethical restriction or contractual clause affecting accessibility.

For data that you have reused, provide a data availability statement that indicates where the data is located and how it can be accessed. The same applies to data that you have accessed but which you will not be sharing in a repository, like materials from an archival collection. Include this information in your reference list.

e. Roles and responsibilities

Who in your team is responsible for data management and sharing? If you have not provided this information yet, you can dedicate a section of your DMP to it. It is also useful to think about any kind of support and training that team members might need.

f. Budgeting

Management, publication, communication and long-term preservation of project outputs come with specific costs, thus it is advised to plan in advance. Consider asking yourself:

- Will you need storage for large volumes of data?
- If you communicate your results via a website, who is hosting it, for how long, and how much does it cost? How are you going to cover these expenses?

The required effort in terms of manpower and working hours is equally important:

- Can you estimate how much time is required for documentation, data cleaning and anonymisation to enable data sharing? Is there any available personnel for this purpose?
- Does your team need capacity building, including open science?
- Additionally, think about the post-project funding period: is there a contact person who remains responsible for a given service or for running a website, or an editorial team around the outputs of the project? If so, how will they be compensated or incentivised? How much institutional staff (e.g. repository managers) can take over from such sustainability efforts?

✳ The presentation "Planning to meet the costs of managing research data to be FAIR" by Whyte, Davidson, O'Connor, & Montesanti (2021) guides you through the cost estimation of DMPs

EPFL Library developed a Cost Calculator for Data Management

2.4.2. Recommendations

- Establish your sharing rights as soon as possible for both the data that you reuse (e.g. while at the archive, or otherwise accessing third-party materials) as well as the data that you produce (e.g. while carrying out an interview).
- Systematically ask yourself whether there are any sensitivities in the data (personal data or otherwise protected data) and your modus operandi to handle them.
- Ask for authorisation to use third-party materials as early as possible. In case you plan to use content from different sources, contact them to inform them about your research and ask for an authorisation or a partnership agreement.
- Capture the information needed to understand the context and the processes leading to the creation of your datasets – that is, how your data has been "cooked". This will enable their accessibility and reusability in the long term.
- Use persistent identifiers wherever possible, particularly, do not forget to mention your ORCID ID (not just your name & email) and include DOIs for your research outputs.
- Be aware that reconstructing FAIR-relevant documentation of finished data sets is virtually impossible.

A few more tips:

- Avoid the extensive use of discipline-specific jargon: your DMP should be easily understood by everyone;
- Provide clarification for any acronyms used;
- Do not leave sections or questions blank;
- The active involvement of all the project partners is key to a successful implementation of the DMP;
- In the early versions of your DMP, do not worry about uncertainties and decisions to be made later, just indicate them.

SNSF and Horizon Europe provide their own DMP templates and guidance → **2.5.**, but you can also build your own Data Management Plan with these tools: ARGOS or DMP Online

Forschungsdaten.info is a website dedicated to data management in German-speaking countries; resources dedicated to Switzerland are mainly made available in English

Example: see the DMP of the research project ''Mapping Self-Organization in the Arts'' (it does not include the budgeting section)

2.5. Data Management Plan as a funding requirement

2.5.1. In Switzerland

Since October 2017, the submission of a Data Management Plan (DMP) has been mandatory in most funding instruments. The SNSF's DMP is relatively short, typically spanning about 2-3 pages. Applicants to SNSF funding can request funding for the preparation of research data in view of its archiving in data repositories complying with the FAIR data principles and that do not serve any commercial purposes. This request can only be made at the time of the application submission.

Swiss National Science Foundation (SNSF)

- SNSF's page on Open Research Data [en, de, fr]
- SNSF's guidance on DMP, with links to its template [en, de, fr]
- SNSF's video support to DMP, broken down section by section
- The SNSF Template with examples by the Kathryn and Shelby Cullom Davis Library, Geneva Graduate Institute

National data support services in Switzerland:

- DaSCH (Swiss National Data & Service Center for the Humanities) is the coordinating institution and representative of Switzerland in DARIAH ERIC, the Digital Research Infrastructure for the Arts and Humanities, a European Research Infrastructure Consortium. It provides training and advice for research data management as well as a long-term repository and a generic virtual research environment for open research data in the humanities in Switzerland, with expertise in IIIF standards for images
- FORS is the Swiss centre of expertise in the social sciences, offering support regarding data collection and analysis, data management and a research data repository
- CLARIN-CH (Common Language Resources and Technology Infrastructure) is a research infrastructure that offers support for language data
- LaRS (Language Repository of Switzerland) is a national platform for the publication of linguistic research data. The infrastructure is responsible for data curation and preservation of language data

2.5.2. Horizon Europe

Horizon Europe mandates beneficiaries to make scientific publications freely available online, immediately upon publication and with no restrictions on use, by depositing them in a trusted repository. Horizon Europe also strongly encourages the dissemination of research data according to FAIR principles. The quality and appropriateness of open science practices are key criteria in the evaluation process of applications and are evaluated as part of the project's methodology. Horizon Europe also recognises and rewards the participation of citizens and end users.

A Data Management Plan is mandatory for any Horizon Europe project generating or reusing research data and should be submitted from the proposal stage. A full DMP should be ready by the signature of the grant agreement at the latest.

✳ Open Science Europe, the open-access publishing venue for European Commission-funded researchers across all disciplines

How to comply with Horizon Europe's mandate for Research Data Management, from the series of Guides for Researchers by OpenAire

Horizon Europe Data Management Plan Template

Where do I find content that I can reuse?

Workflow A

How do I reuse open content?

How do I work with GLAMs and their collections?

How do I reuse non-open content?


Selected repositories with open content and tools to find more
How to adapt and remix CC-licensed content
Reuse agreement template between GLAM and researchers
How to deal with all-rights-reserved content
How do CMOs work?
How to deal with social media content
Learn: Subtopic
Tools

3. ACCESS and (RE)USE third parties data

Most research projects start with data that you need to find and access. This section of the guidelines describes how to access and reuse them.

3.1. Open data and repositories for arts, design and music

Open data, including data licensed under an open licence or in the public domain, can be freely accessed without researchers or their institutions having to pay for it. It is re-usable according to the distribution licence chosen by its author and/or the publisher.

You can start your search for open-access and free resources in open repositories, that are non-commercial and allow FAIR data publishing and reuse. The following sub-sections list a selection of resources dedicated to arts, design and music.

You can find more open repositories by browsing the databases of Re3data and OpenDOAR. Other generalist resources for open content related to the humanities are Wikimedia Commons, the media repository connected to Wikipedia, the Openverse, which indexes Creative Commons-licensed and public domain content from selected sources, the Internet Archive and Flickr Commons.

3.1.1. Repositories of research data

- OpenAire's Digital Humanities and Cultural Heritage community is a discovery environment, which builds an open scholarly graph of publications, datasets, software and other types of research products, all linked to each other and to funding, projects and organisations. OpenAire is also one of the sources used by Open Knowledge Maps, an AI-based visual interface that groups the most relevant open documents related to your query by topic based on their metadata.
- The Swiss National Data and Service Center offers valuable resources for the Humanities (DaSCH).
- The Digital Library in the TextGrid Repository is a repository for texts and manuscripts (images and transcriptions).
- Archivegrid describes source materials held in archives, libraries, museums and historical societies, bringing together information about historical documents, personal papers, family histories and more.

3.1.2. Repositories of research data

Repositories for artworks (in general)

- GLAMs on Wikimedia Commons; Wikipedia:GLAM
- Europeana
- Archives Portal Europe
- WorldCat
- VIAF
- Digital Repository Ireland
- Datasets – Digital Humanities 201
- Collection Catalogues – Rijksmuseum
- Open Access at the National Gallery of Art, Washington (US)
- Gallica

Repositories for images

- Getty Provenance Index
- PHAROS
- Open Content Program | Getty Projects
- Public Art Archive

3.1.3. Repositories of design projects

- Thingiverse is an open repository for 3D printable designs, where all submissions are encouraged to be licensed under a Creative Commons licence.
- Build upon and contribute to public projects shared on Wikifactory.
- Arduino is an open-source software and hardware company specialising in microcontrollers. You are free to use Arduino's components for your project; however, note that the brand name is copyrighted and exclusive to official products, so you need permission to label your project with it.

3.1.4. Repositories of music

Catalogues (collections of databases):

- The musoW database brings together openly available music and musicology resources from across the Internet, serving as a catalogue of databases. You can browse it along different search criteria
- You can use the audio and video search of the ProQuest database

Databases, collections (a small selection of musoW resources):

- List of Public Domain Music
- Musopen for free sheets
- ChoralWiki, a Choral Public Domain Library
- Early Music Online

Open-upon-request music resources from proprietary providers:

- Deezer (API)
- Spotify datasets

A collaborative repository of CC-licensed audio samples: Freesound.

3.1.5. Repositories of software

- European list of a number of repositories: OSS Repositories | Joinup
- Possibly the most established directory: Free Software Directory

Repositories for specific operating systems:

- Debian: https://packages.debian.org/stable/
- Ubuntu: https://packages.ubuntu.com/jammy/

The Free Software Foundation Europe (FSFE) provides assistance, information and expertise on Free Software: you can contact them.

3.1.6. Open hardware

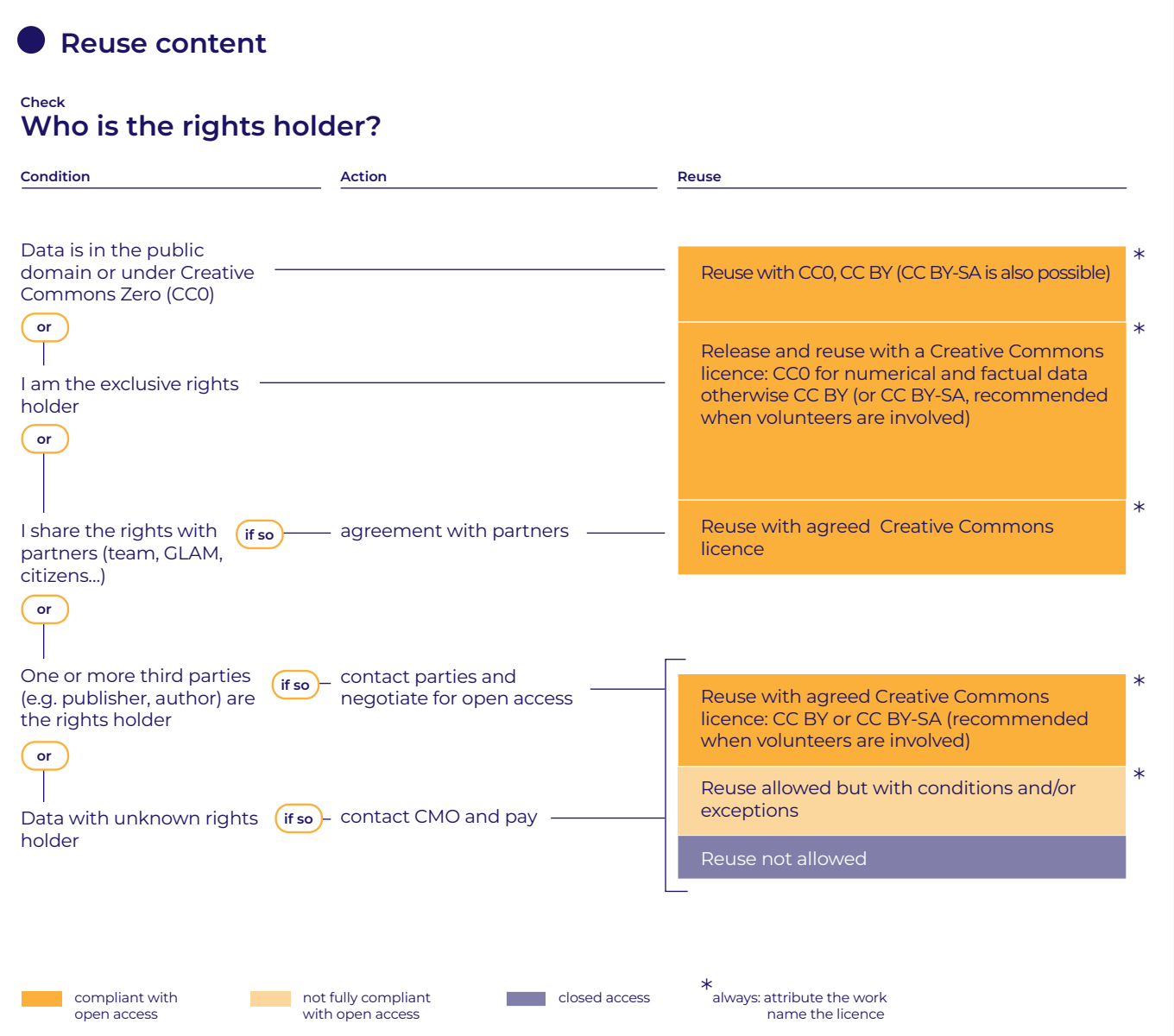
Projects using CERN open hardware licence are listed on a dedicated CERN webpage. On their Wiki homepage, you can learn about other open hardware licences and connected projects.

3.1.7. Open fonts

Open science requires all components to be freely accessible and shareable, including fonts. The most widely used open licence font is the SIL Open Font Licence (OFL). On their website, you can find selected resources for inspiration and download options. If you opt to use the Google Font library, which also includes open fonts, it is recommended to download the fonts and not use them directly from Google on your output (e.g. a website) to avoid Google tracking, ensuring greater privacy and compliance with open science principles.

3.2. Reuse Creative Commons-licensed works

The workflow below anticipates the most important steps you will need to take to reuse content.



[Fig. 10] Workflow A - Reuse content

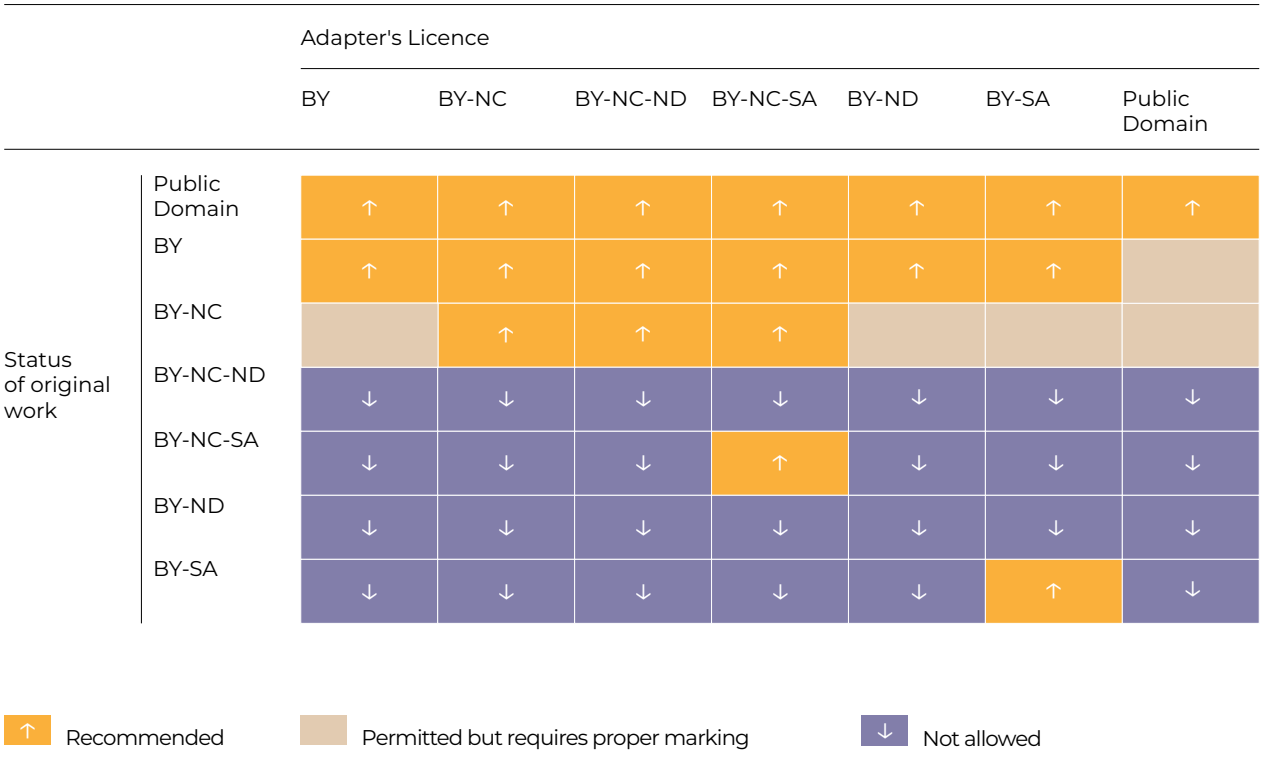
To reuse CC-licensed materials you must follow the licence conditions:

- if the work is licensed under one of the three Creative Commons licences that include the NC-NonCommercial restriction, you cannot use it for commercial purposes. Whether a use is commercial or not depends on the situation and intentions of the user.
- If the original work is licensed under an ND-NoDerivatives licence, you can make and use changes but only privately, as sharing your adaptation with others is not allowed.
- If the original work you want to use is licensed under an SA-ShareAlike licence, then you must license your adaptation under the same or a compatible licence.

Please refer to section **4.4.2.** to learn how to mark your research outputs with a CC licence notice, and to section **4.5.** to find out more about attribution and credits.

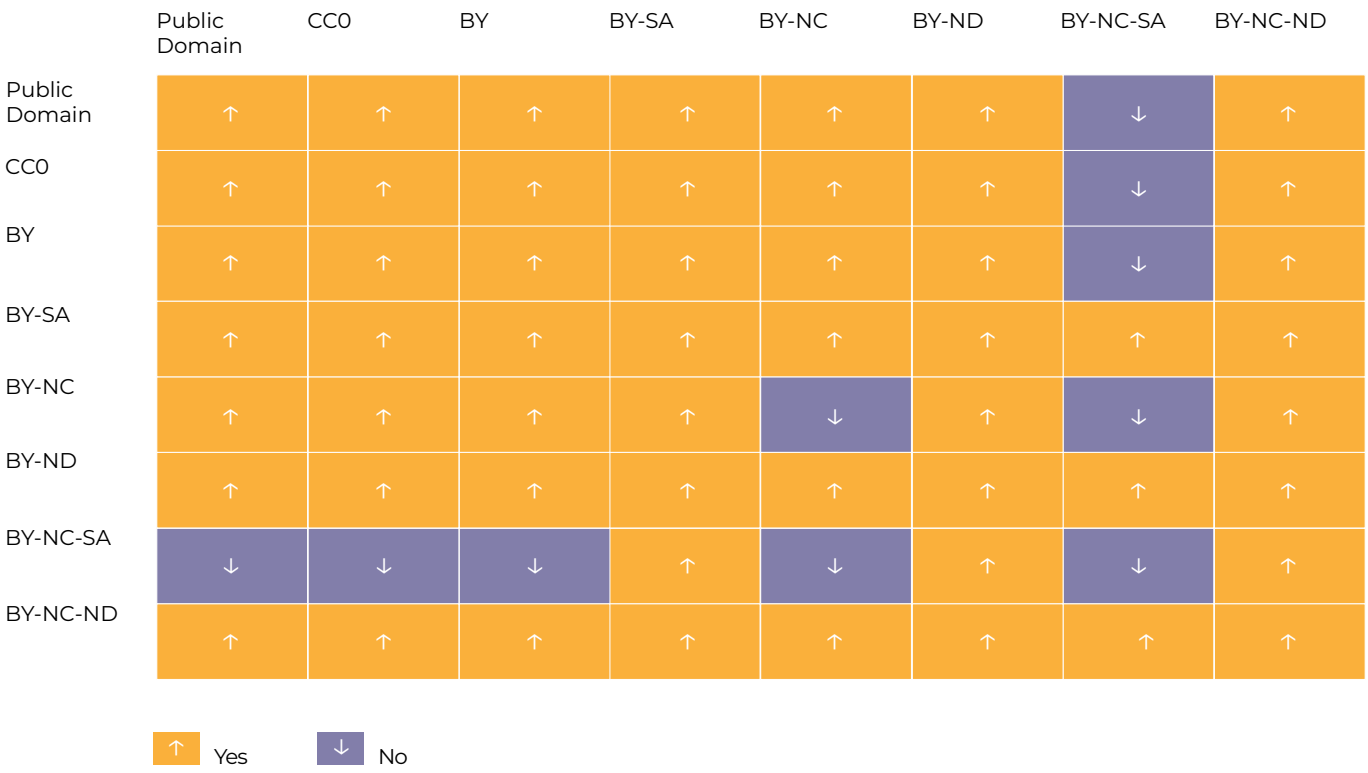
3.2.1. Adaptation and remix of CC-licensed works

In case of adaptation of content, you can use the CC Adapter's Licence. When choosing a licence for your new work, it is recommended to pick one of the licences corresponding to the orange boxes in the table below; purple indicates that the licence is not allowed, while beige is permitted but requires you to clearly mark the adaptation as involving multiple copyrights to comply with the licences from all rights holders.



[Fig. 11] The CC Adapter's Licence Chart
Derived from chart by Creative Commons, CC BY 4.0

If you remix differently licensed works, you must choose a compatible licence, as some items cannot be remixed depending on their respective licences. The following remix table helps you determine what licences can be used together; if the box where row (licence of original work 1) and column (licence of original work 2) intersect is orange, then you can go ahead and mix the two licences.



[Fig. 12] The CC Licence Compatibility Chart
Derived from chart by Kennisland

3.2.2. CC licences attribution requirements

Once you have found and reused open third parties' material, it is crucial to always cite your sources properly. In doing so, you not only avoid plagiarism but promote scholarly transparency.

Attribution is required by all CC licences. Although it is not mandatory for CC0, it is always a good scientific practice to credit the author. A proper attribution follows the TASL rule and includes the following information:

T	Tile	Title of the work. If you are reusing an original work with no title, you can skip this. Starting with the CC licence suite 4.0 the title is not mandatory any more
A	Author	Licensor's name, who is usually the author of the work
S	Source	A link to or notice regarding where the work can be found, preferably the original source. Avoid shortened URLs
L	Licence	The specific Creative Commons licence you've chosen for your work, including the version of the licence. Make sure to link (or provide other directions that guide users) to the licence's legal code

If you lack some of the TASL information, include as much detail as possible in the attribution statement. In the case of derivative works, it is essential to indicate that your work is a modification or an adaptation of another work and provide attribution to the creator of the original work. Include a link to the work you modified and indicate its licence too. If a work has undergone multiple adaptations, be reasonable, i.e. make sure it is possible to track the original work and the last adaptation you relied on. This method preserves moral principles and makes your academic work more transparent, allowing people to see the creative and conceptual lineage of your work.

✳ | Recommended practices for attribution, a wiki page by Creative Commons, gives you indications and examples

3.3. Collaboration with GLAMs

GLAMs (acronym for galleries, libraries, archives and museums) are cultural institutions that collect and preserve cultural heritage materials in the public interest and are a primary resource of open digital content. The type of content shared by GLAMs includes works in the public domain, works under copyright whose authors gave permission to share, works of which GLAMs own the copyright and metadata produced by GLAMs.

Not all cultural institutions have a clear commitment to open access. Some institutions lack the knowledge or the resources to pursue open access. In other cases, local legislation can impose restrictions on open access, particularly in the commercial reuse of images of heritage. This may result in some confusion when it comes to accessing and reusing their content. Establishing a good relationship with them is a way to facilitate your work and promote the principles of open access.

When working with GLAMs, it is good practice to:

- contact the cultural heritage institutions during the initial stage of your project in order to explain your plans and figure out the details of the transaction together;
- establish clear objectives and outline ways in which they want you to publish, store, license and attribute the output of the collaborative research project;
- determine and agree on the distributing responsibilities among all stakeholders;
- ensure that the mutual agreements between you and GLAMs and the data reuse declarations are included as a powerful component of your Data Management Plan.

The Heritage Data Reuse Charter by DARIAH-EU facilitates the collaboration between cultural heritage institutions and researchers by providing exchange protocols. The charter is a moral contract to which all stakeholders need to adhere. Its core principles are reciprocity, interoperability, citability, openness, stewardship and trustworthiness. The charter consists of a number of principles and mechanisms for improving the conditions for the use and reuse of cultural heritage data issued by cultural heritage institutions and studied and enriched by researchers

The Reuse agreement template between Cultural Heritage Institutions and researchers can help you and the GLAM you are collaborating with, clarify your mutual goals, specify access to data, provenance information, preferred citation standards and hosting responsibilities in order to reach a mutual reuse agreement, right from the project planning/application phase

Some GLAMs' data are uploaded on Wikipedia and Wikimedia Commons, Europeana, Flickr Commons, Openverse and the Internet Archive

3.4. Reuse content that is not openly available

In the fields of arts, design and music, the probability of researchers and practitioners having no other choice but (re)using content that is not openly available is high and the right to quote (see sections → **1.2.1.d** and → **1.2.2.d**) is not always an option. In this case, you need to identify all components that make up that content and ask each rights holder for permission to reuse. Ideally, you should consider convincing the rights holders to release their content under an open licence (CC0, CC BY, CC BY-SA → **1.2.3.f.**) If your attempt does not work, you have the following last resort options: choose more restrictive CC licences (NonCommercial, NoDerivative options from the Creative Licence suite) that, despite not being compliant with open access, can protect the rights holder from any unwanted use while allowing the data to be shared with more ease than copyrighted material without a CC licence. Eventually, with permission from the rights holder you can also keep the original full copyright of the third party's content. You will have to highlight any exceptions to the licence provisions of your output clearly. To learn about recommended licences based on the nature of the data and how to handle exceptions, please refer to section → **4.4.2.**

3.4.1. How do copyright collection societies work?

The copyright holder can appoint a collective rights management organisation (CMO) to license their work and collect fees.

The role of CMOs include:

- to represent right holders;
- to negotiate fees with users;
- to establish tariffs for different uses;
- to grant licences to users;
- to collect licence fees from users;
- to distribute fees to right-holders.

CMOs are your point of reference also when common copyright exceptions fail and when dealing with individual copyright owners is impossible or impracticable.

- Orphan works: if the right holders remain unknown or cannot be found despite appropriate research efforts, permission can be obtained from CMO if the orphan work is held in public or publicly accessible libraries, educational institutions, museums, collections and archives, or if it was produced, copied, or made available in Switzerland, or handed over to one of the abovementioned institutions (art. 22b of the Swiss Copyright Act)
- Extended Collective Licences: the licence allows exclusive rights for a large number of published works and can be applied even if right holders are not represented by the CMO. However, the licensed use must not impair the normal exploitation of the works and is limited to Switzerland (art. 43a of the Swiss Copyright Act)

CMOs operate in other countries also, although their legal status and powers may differ.

The collective rights management organisations operating in Switzerland are:

ProLitteris: for literature, photography and visual art

SSA (Société Suisse des Auteurs): for dramatic works, musicals and audio-visual works

SUISA: for musical and non-theatrical works

SUISSIMAGE: for audiovisual works

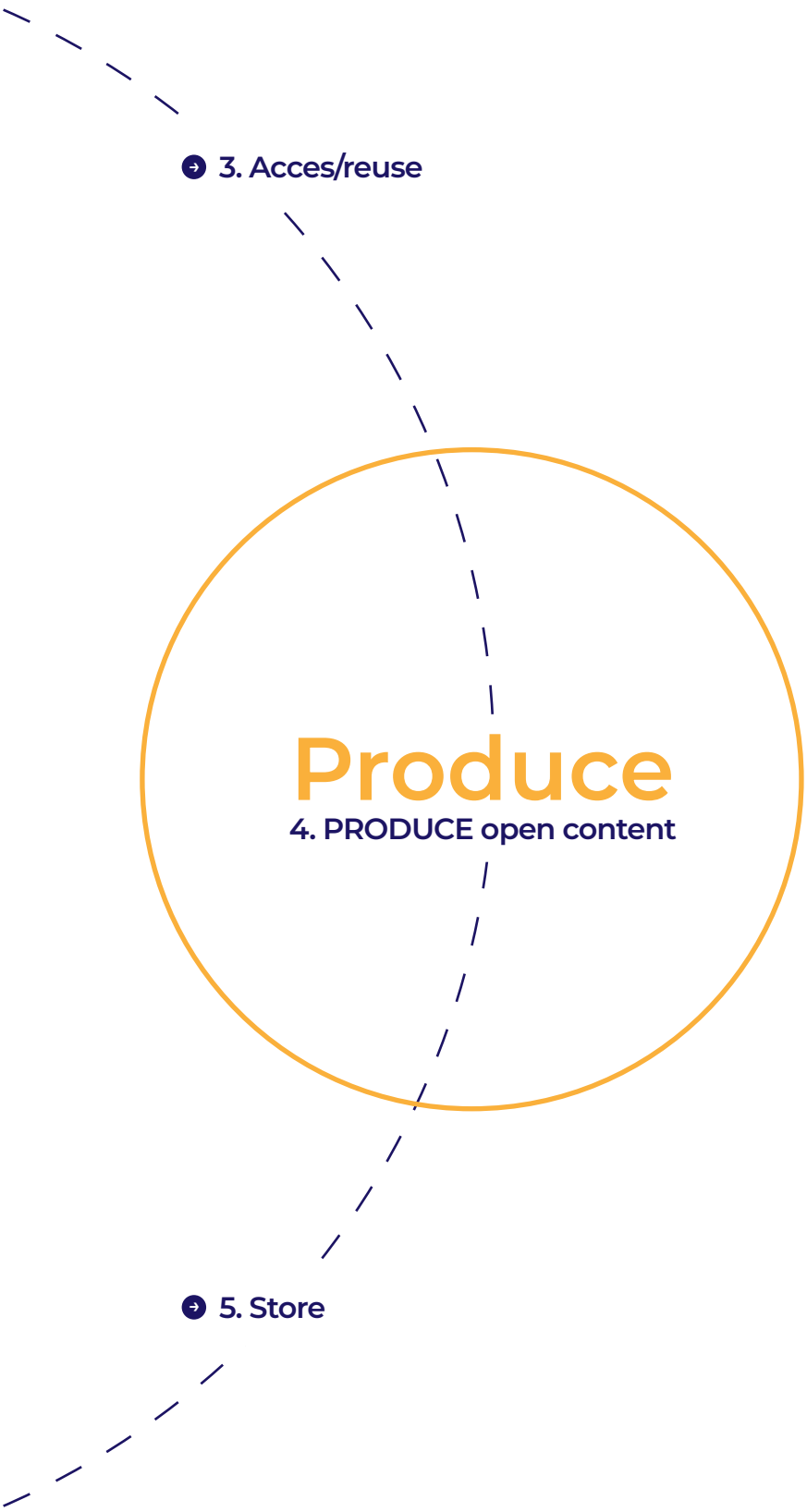
SWISSPERFORM: for related rights

"The challenges and opportunities of Swiss copyright laws related to cultural heritage and the role of ProLitteris", by Noa Barchetta, lawyer, 3 November 2022

A conversation about ProLitteris, with lawyer Noa Bacchetta and ProLitteris CEO/director general Philip Kübler, 19 April 2023

3.4.2. Reuse user-generated content from social media and online platforms

Social media and online platforms distribute huge amounts of content, including valuable data, such as Goodreads, Soundcloud, or Vimeo. These resources can be used pro-actively in a participatory project (more on this in the next chapter) or you can consider reusing what has been published and made available already. In this case, it is crucial to check both the policy of the platform the content has been published on and, if available, the copyright notice of the specific content.



How do I do research with others?

How can Artificial Intelligence support my research processes?

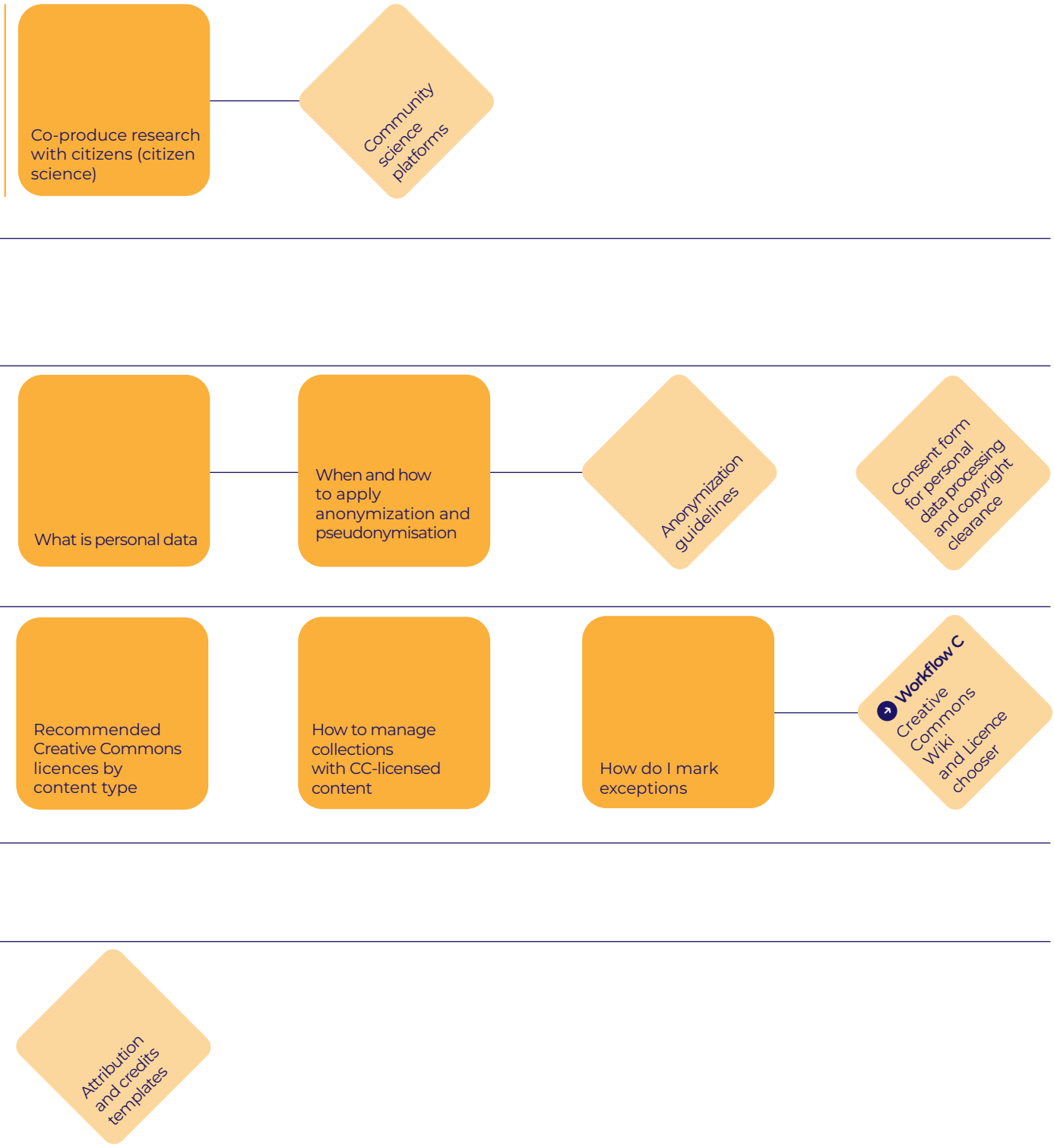
Workflow B

How do I carry out copyright clearance and obtain personal data processing consent?

How do I mark research outputs with a Creative Commons licence?

How do I deal with data that cannot be digitised?

How do I deal with attribution and credits?


Co-produce research with citizens (citizen science)
Community science platforms
What is personal data
When and how to apply anonymization and pseudonymisation
Anonymization guidelines
Consent form for personal data processing and copyright clearance
Recommended Creative Commons licences by content type
How to manage collections with CC-licensed content
How do I mark exceptions
Workflow C
Creative Commons Wiki and Licence chooser
Attribution and credits templates
Learn: Subtopic
Tools

4. PRODUCE open content

4.1. Doing research together

Collaboration is a critical component of scientific research. Working together with peers around the world is becoming easier, thanks to virtual research environments and other platforms and initiatives designed for collaborative writing, annotation and review, as well as for reference management and discovery. It is advisable to consult your librarian and browse the Social Sciences and Humanities (SSH) Marketplace to find tools best suited to your needs, including resources provided by the institution you are affiliated with. Collaboration can go beyond the scholarly realm, though, and engage society at large: let us take a closer look.

4.1.1. Engaging citizens in scientific research (citizen science)

Citizen science, or community science, entails research conducted with the active engagement of the general public, where volunteers contribute either through their intellectual effort or knowledge or their tools and resources. The term "citizens" does not imply a lack of competence or knowledge; on the contrary, it is meant to be a neutral term used to distinguish participants from the formal scientific investigators.
The definition of citizen science is quite broad and includes a variety of practices, which – according to the European Citizen Science Association (ECSA) – have two characteristics in common: citizens are actively engaged in research, in partnership or collaboration with scientists or professionals; and there is a genuine outcome, such as new scientific knowledge, conservation action or policy change.

[Fig. 13] Models of community engagement in science
Derived from F. Serrano Sanz, T. Holocher-Ertl, B. Kieslinger, F. Sanz García, C. G. Silva, "White Paper on Citizen Science for Europe", 2014, socientize; CC BY 4.0

Citizen science is a pillar of open science that produces reliable data and enriches research with unforeseen perspectives and knowledge. Citizen science is applied by institutions like NASA, to monitor the UN Sustainable Development Goals (SDGs), and also in arts, design and music research. Typically, citizen scientists are engaged in tasks like collecting and classifying data, from the local to the global scale, online as well as offline. For example, they are asked to collect memories in various formats related to a plastic exhibition, to help find out what songs the whole world knows, or to identify constellations in celestial maps from a planetarium's archival collection, including through tailored interactive tools on-site. But their engagement can go beyond this and affect the whole research process, from collectively defining objectives, to creatively identifying solutions (e.g. developing bottom-up renovation methodology based on the needs and capacities of residents), or contributing to the peer-review of your paper.

In addition to disseminating expertise with the wider audience, citizen science commits to (some levels of) shared authority, which may include interpretative and meaning-making power. It becomes a co-design process, which can start right at the foundation of the research project.

The following are some questions for you to consider:

- what levels of authority do you intend to share?
- What are the benefits for the citizen scientists? How are you going to reward their voluntary contribution? Quality of interactions, acknowledgement of contribution, curiosity satisfaction, community building can be part of it.
- Is it going to be a contribution to your research or co-authorship? What implications does co-authorship have in terms of shared duties and responsibilities? How is co-authorship going to affect the scientific process of validation and publication of outputs?
- What are the associated risks and how are you going to mitigate them? For instance, do you need to set up insurance coverage?
- How are you going to handle intellectual property rights? The licence we advise to apply is CC BY-SA.
- What kind of dissemination are you planning, beyond the academic realm?

In all cases, planning ahead, keeping all ethical and legal implications in mind, is paramount. You need to specify your research goals, clarify the scope of the citizens' engagement and set clear community guidelines that outline rights and responsibilities. Additionally, make sure you communicate properly throughout the project so that participants are aware of progress at all times: not only is this due, but also fosters motivation.

✳ Citizen Science Skilling for Library Staff, Researchers, and the Public, guidelines on how to manage a citizen science project by LIBER

Parthenos training module on citizen science in the (digital) arts and humanities

PPSR Core is a set of global, transdisciplinary data and metadata standards for use in citizen science projects; it is maintained by the Association for Advancing Participatory Sciences. You can find more resources there

SciStarter and Zooniverse are platforms dedicated to Citizen Science with millions of volunteers

Vera is a European citizen science hub dedicated to the humanities. It offers a tutorial and it also helps you find funding

EU Citizen.Science is a platform for sharing citizen science projects, resources, tools and training funded by the EU

Schweiz forscht is the Swiss platform for citizen science projects

ETH University has a website dedicated to citizen science with links to resources, including the ones it developed: Citizen Science Logger, a tool for crowdsourcing tasks (contribut-

ing data in forms of text (survey answers), images, video, audio, geolocation, etc.) and Citizen Science Project Builder, a web-based tool for the analysis of existing digital data (image analysis, pattern recognition, text transcription, mapping, etc.)

CitSci is a global citizen science support platform. It offers project managers and volunteer citizen scientists a suite of online project management and associated data management, analysis, visualisation and reporting features. While the focus has so far not been on arts, design and music, they are open to it and offer services to custom apps and integrations

Citizen Science: Theory and Practice is an online, open-access, peer-reviewed publication focused on citizen science and other participatory sciences

4.2. Artificial intelligence

Artificial intelligence has been around for some time now, but only starting in 2023, and quite abruptly, AI-based services have become popular amongst the general public This surge is largely attributed to generative AI chatbots like Open AI's ChatGPT, Microsoft's Copilot and Google's Gemini, or neural machine translation services like DeepL. The number of applications and their popularity are booming, while legal norming of their usage is lagging behind. The first major regulatory effort was made in 2024 by the EU through its AI ACT, which uses a risk-based approach to set some principles for the development and employment of AI, including transparency obligations.

AI affects academic research directly. It is a powerful resource that can support your work, but it also raises accuracy concerns, copyright infringement risks, as well as ethical issues, because AI reproduces (and might amplify) the biases of the processes and data it was trained with and because of access constraints. Overall, unless you use AI critically, the quality of your research might be affected negatively.

Here are some basic rules you can abide by to safeguard the scientific integrity of your work:

- understand how AI tools work and learn about their limitations: this is the first step to capitalise on their potential in a responsible way (computer scientist and artist Jaron Lanier uses a forest as a powerful visual metaphor).
- Keep up to date with national laws and institutional policies: the country where you work, the institution you are affiliated with and the resources you are planning to use to disseminate your work will all influence regulatory standards. Given the fast pace of developments in this field, norms might change over the course of your research project.
- Keep up to date with tools, as well as their versions and conditions. New or improved features will show up and might address privacy protection and copyright issues in a more considerate way.
- Protect sensitive data: GDPR and copyright laws also apply when using large language models (LLM), on which chatbots and overall, AI tools are based. What happens to your data when you feed it into them? Consider that tools might advance quicker than the policies you are required to respect, and that companies' promises might not be fully reliable until certified by independent evaluators.
- Mind the bias! AI tools are subject to the so-called "data poisoning," which happens when large quantities of biassed datasets are ingested into them. The attempt to compensate can be disastrous (as evidenced by Gemini's image generation controversy in February 2024).
- Be creative in the use of AI tools (e.g. for brainstorming) and do not trust their accuracy: what sources are the generated responses based on? It is best to always double-check.
- Learn how to effectively use them: depending on how you interact with these tools and train them, the quality of results varies significantly. You can start by providing clear, structured information, including a context.
- Document on the use you make of AI tools, also specifying if any content was AI-generated.

4.3. Use open formats

Open file formats ensure accessibility, reuse, derivative works and longevity of your outputs. In case you have to use proprietary formats, it is essential to retain the raw data and also convert them into open file formats → 2.2.4. and store both versions together. Conversion is advised even for proprietary formats that are widely used (like TIFF).

The Preservation digitization standards by the National Archives of Australia guide you in the digitisation of physical records of archival value

"Open design: the updatable life of physical artefacts", by Serena Cangiano, SUPSI, DACD, 13 December 2023

"Open data and open access in the area of the performing arts", Beat Estermann (Bern Academy of the Arts, HKB), Baptiste De Coulon (Swiss Archive of the Performing Arts, SAPA), and Hannah Steffen (Theater Winkelwiese in Zurich)

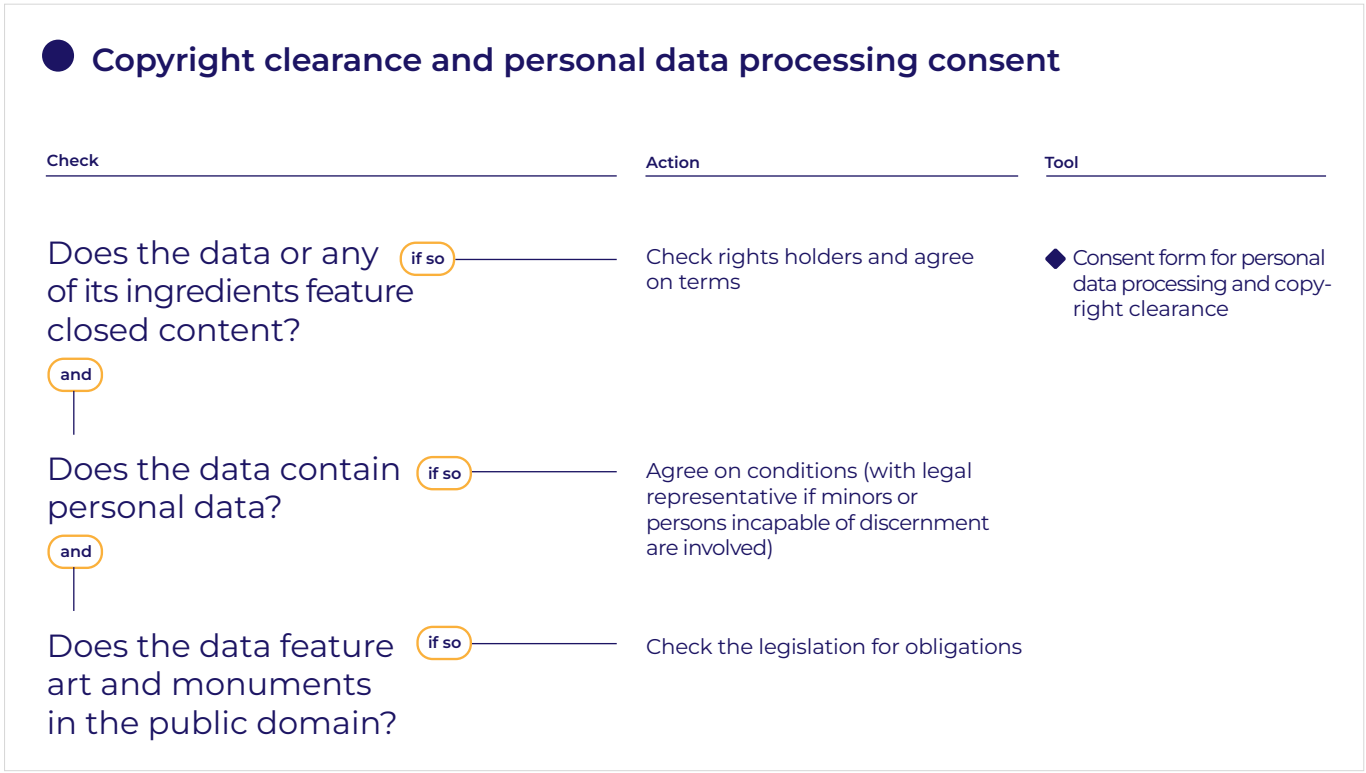
4.4. Prepare data, resources and research outputs for publication

4.4.1. Copyright clearance and personal data

In the digital era, scholars are facing a complex set of legal and ethical issues whenever they want to store, use, publish and share data. Committing to research integrity, which implies fairness, equality, rigour and accountability in all scholarly activities, can be challenging when it comes to balancing the open research culture with the ethical review procedures and legal requirements for data protection. In practical terms, the doctrine "as open as possible, as restricted as necessary" that guides open science necessitates not only pursuing licences that allow for the widest accessibility to your research resources and outputs but also respecting stakeholders' rights. If you are reusing third-party data, you have to make sure that you are legally authorised to do so and if you are collecting and processing personal data or otherwise confidential information (e.g. protected by intellectual property rights or related to security matters), an explicit authorisation is needed as well.

If you are reusing content that has been released under a Creative Commons licence, you only have to comply with the licence requirements without any further action (that's the beauty of it). The same goes for works in the public domain, although it is advised to check national laws, as in some countries (e.g. Italy), reproducing and disseminating cultural heritage is subjected to obligations even if they are not protected by copyright anymore. You may have to notify authorities and, in case of commercial use, seek authorisation and pay a fee.

In all other cases, when you are producing new content or reusing materials that are not openly accessible it is imperative to ensure that you have permission to share any research output before you do so, respecting intellectual property, privacy and confidentiality. Let us have a look at how to deal with each of these.



[Fig. 14] Workflow B - Copyright clearance and personal data processing consent

a. Copyright clearance

Whenever you produce or reuse content, you have to consider all rights holders involved. For example, if you take a photograph of a contemporary artwork in a museum, you will need permission from the museum (since you are entering its premises: only private use does not require an authorisation) and the artist. Or if you want to reproduce a concert programme, the copyright clearance needs to be carried out not only for the programme leaflet as such, but also for all its components, such as its layout design, fonts, illustrations and all other elements it is composed of, which might be subjected to intellectual property protection. If the programme leaflet includes a portrait of a musician, the photographer needs to authorise open access reuse, and the musician has to permit the disclosure and dissemination of personal data (more on this below).

If you have collaborated with a partner institution that shares ownership of the content you produced, it is good practice to have a written agreement specifying the conditions under which you are allowed to release that content. You might consider doing the same with your team members. In both cases, such an agreement is not mandatory and, technically, a verbal agreement can suffice, but having a written record prevents future conflicts.

The agreement should include the kind of CC licence under which the content is released to you and others.

b. Personal data

Under Swiss and European law, the privacy of any physical person must be protected, as mandated by the Federal Act on Data Protection (FADP) and the General Data Protection Regulation (GDPR) respectively. Privacy protection laws distinguish between, on the one hand, general personal data, which refers to any information relating to an identified or identifiable natural person such as name, address and date of birth, as well as technical data like an IP address; and, on the other hand, data that needs to be handled with special caution. The Swiss law calls the latter "sensitive personal data", that is "data relating to religious, philosophical, political or trade union-related views or activities, data relating to health, the private sphere or affiliation to a race or ethnicity, genetic data, biometric data that uniquely identifies a natural person, data relating to administrative and criminal proceedings or sanctions, data re-

lating to social assistance measures" (Art. 5; sexual orientation is not explicitly mentioned but is included in this definition). Similarly, GDPR makes a similar distinction but uses a different terminology and calls this sensitive information "special categories of personal data" (Art. 9). The word "sensitive" might generate some confusion as it is used in different manners depending on the context. It defines a specific category of data under Swiss law, but in many other contexts, including in some of the links listed below, its use is generic and indicates all data that must be protected against unwanted disclosure, either personal or otherwise confidential.

The key takeaway is simple: under Swiss and European law, whenever you are dealing with personal information you must obtain consent to collect, process and disclose that information. The authorisation has to clarify what information you need and what for, a time frame for its use, and to indicate if any information needs protective provisions like anonymisation or pseudonymisation.

- Anonymisation is the process of removing personal identifiers that may lead to an individual being identified, even in an indirect way, by aggregating data.
- In pseudonymisation, personal data is processed in such a way that the data can no longer be attributed to an individual without the use of additional information that is kept separately and non-accessible.
- The time frame refers to the period of time during which the personal data can be stored, processed and accessed by you and/or others. Some data will have no limit, others will have specific time limits.

At times, you will be given the right to process and disclose only pseudonymised information. In these cases, you will have to store the related data that can identify the individuals involved in a secure way, mention the protective measures that you are applying in the agreement and document them in your Data Management Plan. This approach should specify conditions to access (e.g. only open upon request to researchers for legitimate reasons) and the contact details of the person who is in charge of the data. Some citizen scientists, on the contrary, might be very happy to make themselves identifiable. By adjusting the agreements based on the free and informed decision of your data subjects, you will make sure that your research is not only open as possible but also as restricted as needed.

Be mindful that you have to protect personal data from unwanted disclosure in the active phase of your research and destroy it once your project is closed – it is advised to do so even when not explicitly asked.

If you are working with children (specifically, under the age of 18 in Switzerland and 16 in the EU) or with people under legal guardianship (think of a person with dementia), their legal representative will have to sign the authorisation for them.

c. Confidential information

Caution is required when your research involves confidential data other than personal information, e.g. business-related data belonging to a company. Even in this case, you need a signed disclosure agreement, which defines the terms and conditions of access, processing and sharing.

d. Handle data scrupulously

Collect the consent forms respectfully, using the opportunity to advocate for open science and scientific literacy. It is your duty to anticipate any possible misuse that disclosing data might generate, also considering that the combined information you share (like a list of events) might potentially lead to the identification of individuals.

Preparing your data for publication is an impossible endeavour to accomplish ex-post. Therefore, ensure that you have defined all relevant strategies in the early stages of your research while setting up your Data Management Plan, and that you systematically get hold of the agreements and authorisations while collecting or producing your data.

The resources below guide you in the identification of data that needs special care and navigating the changes in the research workflow associated with them. They also support you in handling such data with tools and good practices to ensure the adherence to the legal and ethical code of conduct regarding open science.

The template in section **9.2.1.** is for you to personalise and adjust as needed for copyright clearance and personal data access and dissemination permission

The OpenAIRE "How to deal with sensitive data" guide gives an overview of what qualifies as sensitive data and how to prepare sensitive data for storage and sharing

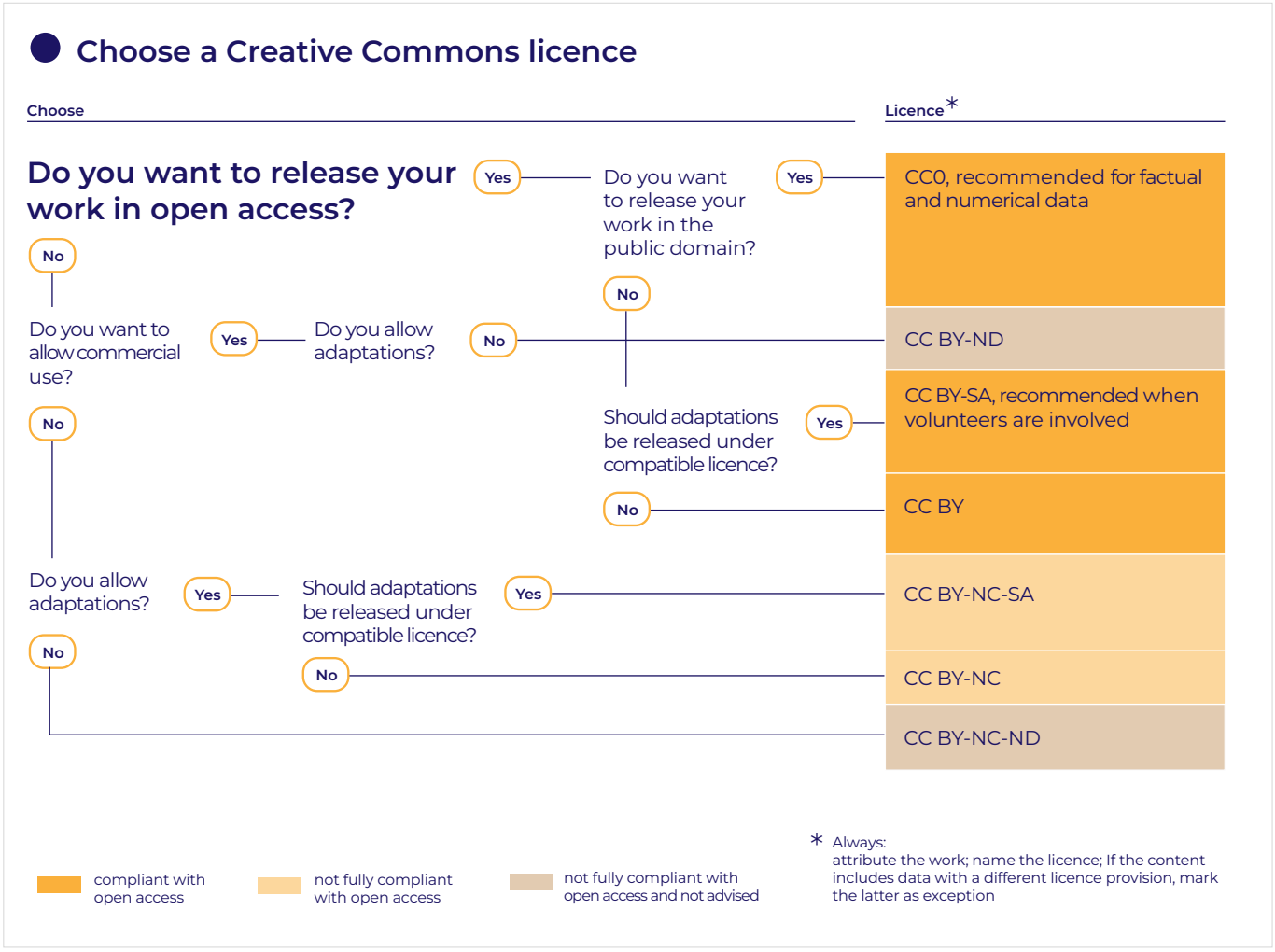
The "Protect" chapter of the CESSDA Data Management Expert Guide covers protocols for ethical review, processing personal data, anonymization and collecting informed consent. The guide had been written with Social Scientists in mind but is useful for anyone working with personal data

The DARIAH ELDAH Consent Form Wizard supports arts and humanities researchers in obtaining GDPR-compliant, valid consent for data processing

4.4.2. Mark your work with a licence

Once you have checked that you control the copyright of your work's components, the next step is to mark each of them with a Creative Commons licence. Creative Commons Licence Chooser simplifies this process by asking you just a few questions and then, it delivers the licence code, text and icon for your output.

Here is a recap of the available options that anticipates the questions you will be asked by the Licence Chooser; open access options are highlighted:



[Fig. 15] Workflow C - Choose a Creative Commons licence

Marking your work with a CC licence is easy. The Creative Commons Wiki has a dedicated page that offers instructions and examples for various kinds of media: datasets, images, videos and audio, websites, blogs and content-sharing platforms, presentations as well as offline documents.

Once you have assigned a licence to a content item, you cannot revoke it for as long as the material is protected by copyright.

a. Recommended Creative Commons licences by content type

Institutions, funders and repositories may have their own policies determining what open licence to apply to your research outputs. However, we recommend the following guidelines:

CC licence	Content type	Rationale
CC0	▸ Metadata ▸ Factual and numerical data and databases ▸ Digital reproductions of cultural heritage works and collections ▸ Internal documents and generic texts ▸ Institutional websites without original content	CC0 is the tool for non-copyrighted content. It does not add restrictions to content in the public domain or not covered by copyright. It produces content interoperable with Wikidata.
CC BY	Works signed by an author (e.g. articles, texts, photos, videos, audio, recordings of lectures, interviews)	CC BY is the licence supported in open science for articles and publications signed by researchers.
CC BY-SA	Outputs from collaborative projects (including citizen science) involving volunteers and partners	CC BY-SA is the most restrictive of the open licences. It requires content to remain free: this is a way of acknowledging the voluntary contribution of participants. It is the licence used by Wikipedia.
CC BY-NC	▸ Services and products developed by students in collaboration with companies ▸ Services and products developed in research projects which are to be commercialised	CC BY-NC is not compliant with the requirements of open access. It is a way to balance the right of students and researchers to produce open science with a company's right to exclusive commercial exploitation.

Watch out for the NoDerivative provision, as it prevents reuse of your work such as translations and further scholarly endeavours that require reprocessing of your data.

Additionally, note that compared to the

Public Domain mark, Creative Commons Zero (CC0) explicitly indicates the legal status of an object and its allowed reuse by other users. We advise you to apply it even when you reuse objects in the public domain.

b. Collections
Collections involve the assembly of separate and independent original works into a collective whole while keeping these organised as distinct separate objects. If you produce a collection reusing CC-licenced works, you must credit each one and indicate its licensing information. Since you are responsible for the selection and arrangement of the various original works in the collection, you are the copyright holder of the collection as such and should assign a licence to it.
Watch out for restrictions! As a general rule, DARIAH-EU recommends using the least restrictive licence applicable to your content. However, if anything in your collection has a Creative Commons licence with a ShareAlike, NonCommercial or NoDerivative provision, then you must also license the collection under the same CC licence or mark exceptions clearly.

c. What if my work includes third-party material that is not open
If your work includes some closed-access third-party material that is essential, you are permitted to use but cannot be made openly accessible, it does not mean that you are not allowed to release your work under an open licence. In this case, you can exclude the material from your licence provision, therefore respecting the rights of the original copyright holder. Make sure to mark exceptions clearly to avoid any misunderstandings.

Marking third-party content including exceptions to the licence provision of your work

List of CC licences available translations

4.4.3. How to deal with data that cannot be digitised

Digitisation is a prerequisite for easy knowledge sharing and for open science, but some items can simply not be translated into a digitised medium due to their fragility, size, or restrictions imposed by rights holders. In all these cases, you will need to find an alternative way to convey the content in a digitised format. The simplest one is a textual description but be creative as other approaches may serve your scientific needs more effectively.

4.5. Attribution and credits

Research is becoming an increasingly collaborative process. Thus, the role of each contributor should be clearly stated so that no contribution passes unacknowledged. Use persistent identifiers (like ORCID) whenever possible.

a. Credit yourself
Always specify how you want your work to be cited, particularly when using non-academic venues to promote your work and to engage with a wider audience **6.6.**

b. Credit your team
Each member of a research team carries out a specific task. The CRediT taxonomy helps you indicate roles and responsibilities correctly, ensuring they receive appropriate recognition for their contributions.

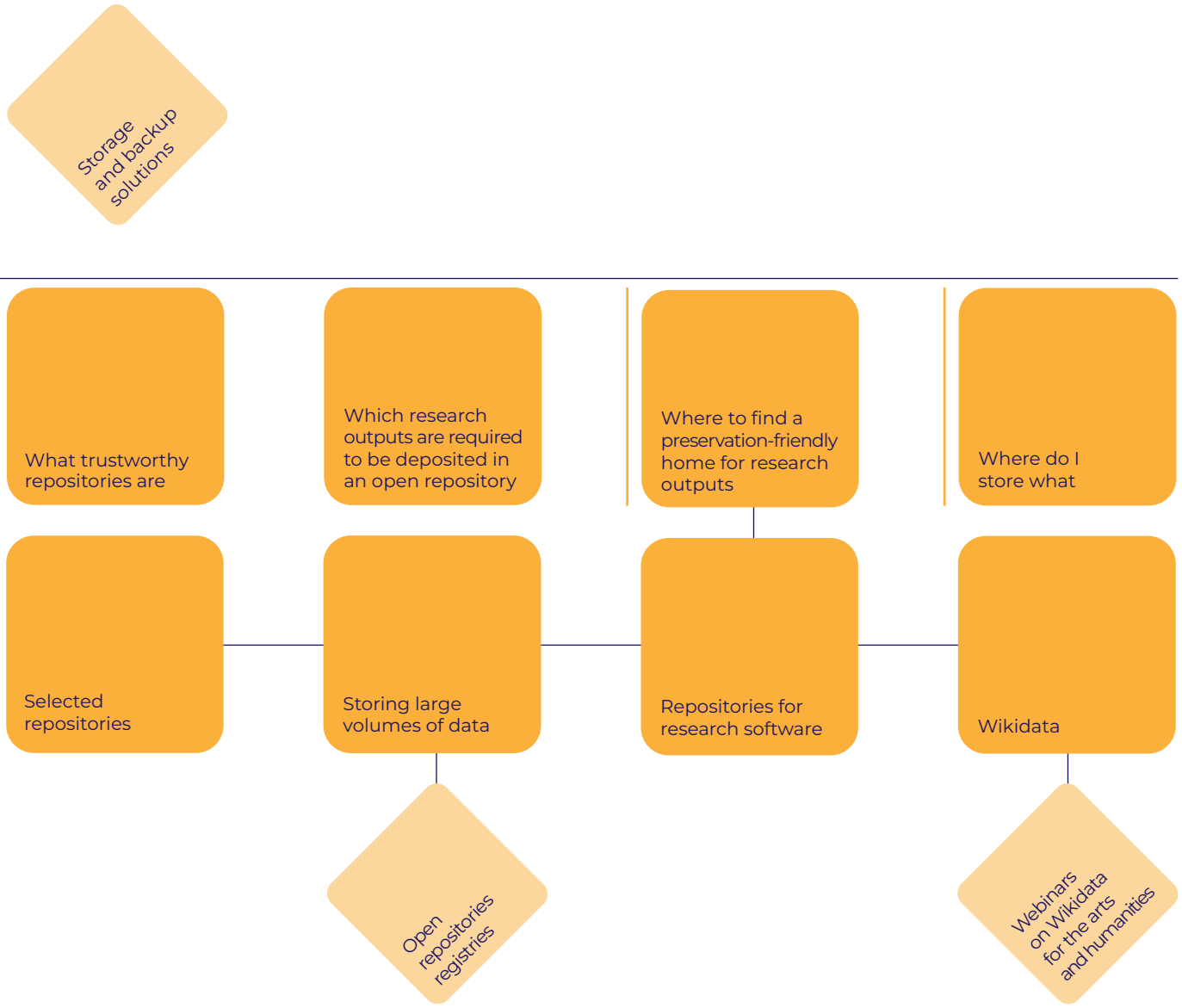
c. Credit external contributions
Beyond your team, collaboration can happen at many stages and in many forms, from citizen science to open peer review. How various contributions are to be credited is best agreed upon with parties, preferably in writing. This way you can avoid mistakes like attributing an authorship contribution to somebody who does not want it.

d. Credit your sources
Before releasing your research outputs, check that all of them are properly credited, so that attribution is visible and traceable. When using a digital resource, add the link and prefer formats that facilitate data linking (e.g. HTML is better than PDFs). Additionally, any URL should be accompanied by the date of last access. To see the Creative Commons licence attribution requirements, please refer to **3.2.2**.

✳ The University Library of the Technical University Munich offers various resources, including a citation guide in English and German

Where do I store my data during the active phase of my research project?

Where do I store my outputs once they are ready to be shared?


Storage and backup solutions
What trustworthy repositories are
Which research outputs are required to be deposited in an open repository
Where to find a preservation-friendly home for research outputs
Where do I store what
Selected repositories
Storing large volumes of data
Repositories for research software
Wikidata
Open repositories registries
Webinars on Wikidata for the arts and humanities
Learn: Subtopic
Tools

5. STORE your data

To start your research journey, check the support structures that are available at your institution, with your librarian serving as the first port of call. Your best case scenario is if your institution has solid data repository facilities and/or data stewards. Engage these resources from the project planning phase to identify solutions that are best suited for your research and compliant with the standards, specifications and protocols of open science. Dedicated staff can also assist you with understanding any specific data management requirements and associated costs. It is equally beneficial to consult your colleagues to learn about the established practices in your disciplines.

First, let us analyse the differences between your storage needs while you are actively working on your project and once your research outputs are ready to be shared, as they differ in terms of accessibility requirement, ease of collaboration and short vs long-term preservation.

5.1. Storage and backup during the project

During the project's lifetime, while the research process is still active and your outputs are still in the making, it is best to store resources in a shared space with authentication and authorisation protocols in place, allowing all authorised contributors to access, modify and version them. In most cases, research organisations and their IT support have cloud-based, networked drives that offer ample storage space and data security as well as automatic backup for most purposes. It could be proprietary services like Microsoft OneDrive, or Google Drive, or open-source ones such as NextCloud or ShareDocs. For the development of analysis scripts and research software, scholars usually rely on GitHub or GitLab, which allow version control, collaborative work and forking. Both are commercial (GitHub is owned by Microsoft), but Gitlab has an open attitude, or in other words, it is based on open-source software and is open to users' contribution, and is thus recommended. If you work with personal or confidential data, enquire with your institution's research support staff whether your intended storage solution meets your institution's data security policy. It is imperative to back up your data regularly to a separate physical location to prevent data loss.

5.1.1. In Switzerland

For the Swiss university community, Switch Drive is a secure alternative to commercial cloud storage services. Users can save, share and collaboratively edit files online. It runs entirely on the Switch Cloud, which is connected to the university network and has an Authentication and authorisation infrastructure (AAI) that protects access. Switch Drive is available to most university members in Switzerland. If this is your case, you have up to 100 GB of storage and your data is stored securely in Switzerland.

5.2. Storage once research outputs are ready to be shared

While some repositories are great resources for searching for data you want to reuse, when it comes to depositing your data, you have to rely on scholarly trustworthy ones.

5.2.1. What are trustworthy repositories and why are they relevant to you

Repositories designed for research ensure long-term preservation and FAIR sharing. They archive your outputs as well as maintain them, so that they remain accessible and usable over time even as hardware, software and file formats you used, for example, become obsolete.

Such repositories come with multiple benefits. They usually have their own discovery platforms and are harvested by other scholarly databases. They ensure long-term availability and findability of your work. They comply with institutional and funders' requirements. These repositories are thus the safest home for your data, enabling future research and verification.

Further benefits of using such repositories are:

- you control who has access to your outputs by using – if needed – the authentication and embargo features of the repository;
- you can add different versions of your outputs and clearly indicate the latest one;
- you can determine how your work has to be cited (which will have to be compliant with the repository citation standards, if there are any);
- the process of ingesting your resources and outputs in a repository gives you the opportunity to clean up your data.

5.2.2. Research outputs you have to deposit in an open repository

To comply with open science principles as well as with your institutional and funder's requirements, certain data has to be ingested in an open repository:

- data (and its metadata) that is needed to validate results presented in research publications;
- tools needed to validate results;
- your article, book or book chapter needs to be deposited in an open repository as well, either by you or your publisher: you will learn more about this in

6.

All of the above data needs to be accompanied by its metadata and the information needed to run your tools.

Depending on the characteristics of your data (e.g. format and size), not all open repositories might be suited to host your work. Once you have deposited your output, you cannot change it, but you can upload its new version.

5.2.3. Find a preservation-friendly home for your data

Be mindful that repositories can occasionally shut down. Long-term availability of your data is best granted by large infrastructures, funded solidly by not-for-profit entities and largely used by academic and research institutions. Your institution might rely on such an infrastructure. Other than institutional variety, repositories can be disciplinary and generic. Make sure that your chosen repository can accommodate the type and volume of your data, and meets quality standards.

a. Standards

If you rely on one of the repositories listed below, you do not need to enquire whether the repository is trustworthy. Otherwise, to ensure that your data will remain available in the future in a secure, sustainably maintained and curated environment, check if your repository has a certification, like a CoreTrustSeal certificate, a Nestor Seal for Trustworthy Digital Archives (verification based on the DIN 31644 standard) or an ISO 16363 certification.

b. Search

You can find research data repositories to best match the technical and legal requirements of your research by consulting the following manually curated databases, where you can browse by disciplines, standards compliance, content type and many other parameters:

- Re3data, the Registry of research data repositories;
- FAIRsharing which also provides information on standards and policies;
- OpenDOAR is another global directory of open-access repositories.

c. Selected repositories

Let us have a look at some FAIR-compliant, not-for-profit generic repositories possibly relevant to you (for Swiss infrastructure **5.2.3.d**). They all assign DOIs and allow versioning, that is uploading one or more revised versions of the output.

- Zenodo has been conceived as a catch-all repository for European research; it has no certification, but you can consider it reliable. It has a standing and solid user base, is operated by CERN and takes almost any dataset. Anybody can register and use it. The total file size limit per record is 50GB free of charge, while higher quotas (up to 200GB) can be negotiated.
- Dryad is an open-data publishing platform supported by a community of academic and research institutions, research funders, scholarly societies and publishers. It is dedicated to research data in all fields and exclusively accepts a Creative Commons Zero (CC0) licence. Individual files should not exceed 10GB, for each publication you can upload up to 300GB.
- Eudat is a European collaborative data infrastructure supported by over 20 research organisations, data and computing centres, and the European Commission. Its B2Share service is a repository that serves researchers, citizen scientists, institutions and communities based in Europe. Any number of files can be uploaded; there is a limit of 10 GB per file and 20 GB per record, and more can be allowed upon agreement.
- Harvard Dataverse is a free data repository open to all researchers from any discipline, both inside and outside of the Harvard community. It is based on software developed by Harvard University and used by other organisations worldwide. Researchers can upload files up to 2.5GB and store up to one Terabyte.
- Open Science Framework (OSF) is an online platform that enables researchers to plan, collect, analyse and share their work throughout the research lifecycle run by the not-for-profit American organisation Center-for-Open-Science (COS). OSF has its own long-term data repository with a limited storage capacity up to 5GB (50GB for public projects), although you can apply (and pay) for more or connect other repositories (e.g. Harvard Dataverse) to your project. OSF collaborates with the Internet Archive and with the privately owned Google Cloud to ensure data longevity.

Examples of subject-specific repositories are Dans, with a "data station" dedicated to social sciences and humanities, DARIAH-DE Publikator and TextGrid, serving text-based humanities disciplines and containing arts and music resources.

Avoid relying exclusively on commercial entities as much as possible. Some are widely used and for legitimate reasons. Figshare, for example, offers good findability,

excellent content presentation and DOIs. For papers, Academia.edu pushes its content aggressively. But despite potential communication benefits, when it comes to long-term preservation, this kind of resource cannot be serenely trusted.

d. In Switzerland

A selection of generic, discipline-specific and institutional repositories in line with SNSF's policy is listed on the Foundation's website. The ones listed above are all included.

Switzerland is developing its own infrastructure, complementing its participation in many EU initiatives. There are generic repositories like SWISSUbase, funded by the SNSF, and Olos, funded by swissuniversities and part of a broader initiative related to Data Life-Cycle Management. They are multidisciplinary and FAIR-compliant and are based on open-source software, grant long-term storage and support multilingualism. Specific to your field of research, the Swiss National Data and Service Center for the Humanities (DaSCH) is primarily funded by the SNSF. Notably, it does not assign a DOI but provides an ARK persistent identifier to objects. It is free of charge for national research projects or those with Swiss participation. For data volumes exceeding 500 GB, annual cost sharing by the project or its hosting institution may be required.

e. Storing large volumes of data

Repositories dedicated to long-term archiving usually have upper size limits, as we have just seen **5.2.3.c.** In some cases, institutional, national or thematic data centres offer storage and archiving services for projects that require large quantities of research data (typically terabytes), usually alongside supercomputing facilities. These offer a bigger data container than the average data record unit of a data repository.

A pertinent example from the arts and humanities domain is Huma-Num, designed for the French research community, in collaboration with CINES (National Computing Centre for Higher Education) and the National Archives. It is being considered for its qualities in the development of a European collaborative cloud for cultural heritage, one of the many projects at the European level. Huma-Num offers secure and long-term storage for data sets, mainly large ones (several hundred terabytes in total). The device uses magnetic disks and magnetic tapes to store data. Data deposits can be both "warm" or "cold," including digitised cultural heritage collections, photos, audio recordings, maps, videos and 3D models. More importantly, such Huma-Num "Boxes" can be easily connected to web-based publishing and web application systems such as Omeka or IIIF in order to enhance the discoverability, reusability and generic user-friendliness of the deposited data volumes.

f. Repositories for research software

Serving as an environment for experiments, visualisations, installations or research analysis, research software can be a valuable research output in its own right. Sharing it is worthwhile and mandatory if your software is needed to validate research findings. Currently, there are two major repositories in Europe that are committed to software archiving, preservation and citation: Zenodo and Software Heritage. The latter is a non-profit service used for archiving and referencing historical and contemporary software supported by UNESCO. It harvests all major software development platforms (including Gitlab and GitHub) to ensure long-term availability, traceability and citability of research software source codes.

Relevant Git repositories can easily be connected to the project's Zenodo collection to deposit software releases, together with the provision of appropriate metadata, thus providing contextual information about the software. Zenodo mints DOIs for each released version of the software and also creates a "concept DOI," which refers to all versions of a given software. This ensures a PID across all versions and specific deployments of source codes. You can also set up automated or semi-automated exports from Gitlab to Zenodo or from GitHub to Zenodo.

g. Wikidata

Wikidata is an open, collaboratively-edited, multilingual knowledge graph, that collects structured data for all Wikimedia projects and welcomes other usages too. It is growing fast, including in the academic realm. The data in Wikidata are published under the CC0 1.0 licence. It allows the accumulation, aggregation, digitalisation and automation of knowledge. Every entry on Wikidata has a persistent identifier and a label. Hosting structured data created, uploaded and integrated by communities,

Wikidata is a notable example of citizen science.
Its advantages include:

- impressive visibility and access;
- active communities of contributors;
- connected to the world and multilingual;
- content available for any reuse;
- contributing to filling the knowledge gaps;
- infrastructure for images, data, sources, audio, content, documents, maps;
- sustainability.

For more information on Wikidata and its use in arts, design and music, please refer to: "Wikidata: arts and humanities", by Daniel Mietchen, data scientist and Wikimedia expert, FIZ Karlsruhe and Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), 3 May 2023

"Wikidata e la ricerca 2024 [Wikidata and research 2024]", Camillo Pellizzari, 9 April 2024, in Italian

"Using Wikidata for performing arts related data", Beat Estermann, Bern Academy of the Arts (HKB), 5 June 2024

5.2.4. Where to store what

Here is an overview chart reflecting the content type and its relative archive location:

Kind of output	Where to store
Dataset, articles	Institutional, disciplinary or generic research data repositories
Recordings	Research data repositories like Zenodo or subject-specific like TextGrid
Images, videos, audio, visualisations	Research data repositories Open repositories for the general public (Wikimedia Commons)
Software	Zenodo or Software Heritage
Articles, monographs, datasets, reports, posters, conference proceedings	Institutional repositories
Digital cultural heritage collections and their enrichments; structured data	Open repositories for researchers and the general public (Wikidata)
Netpublications, scholarly digital editions	Institutional website, backup on Internet Archive, single outputs in research data repositories

Are you looking for repositories for your preprint and post-print publications? You can find the most suitable one via the Registry of Open Access Repositories, which leads us to our next chapter!

Workflow D

What are the open access routes and how do they relate to the publishing lifecycle?

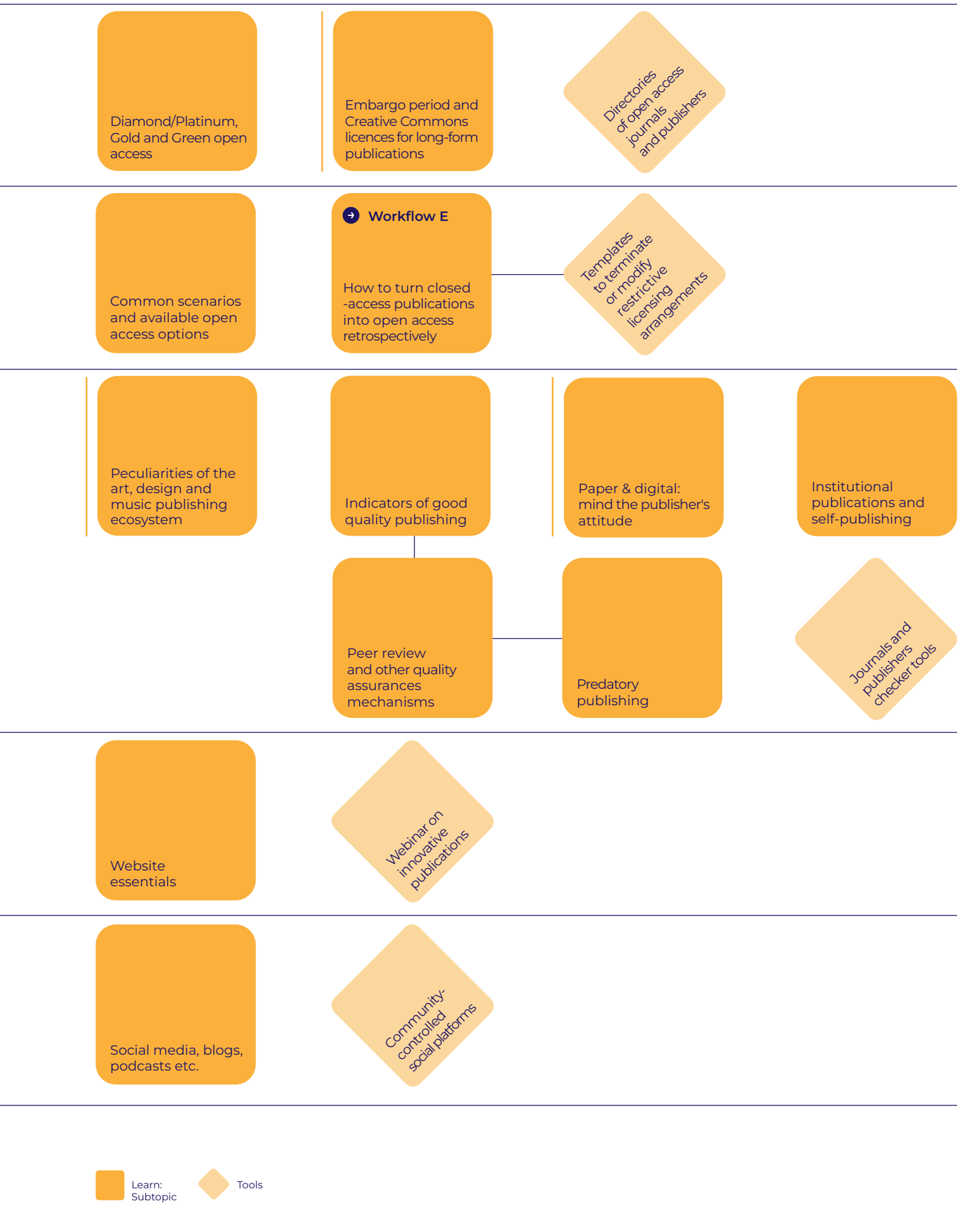
How do I negotiate for open access?

How do I identify my open access publication venue?

What models of innovative publications are compatible with open access?

How do I communicate my research?

What are overlay journals? What are open data journals?


Diamond/Platinum, Gold and Green open access
Embargo period and Creative Commons licences for long-form publications
Directories of open access journals and publishers
Common scenarios and available open access options
Workflow E
How to turn closed -access publications into open access retrospectively
Templates to terminate or modify restrictive licensing arrangements
Peculiarities of the art, design and music publishing ecosystem
Indicators of good quality publishing
Paper & digital: mind the publisher's attitude
Institutional publications and self-publishing
Peer review and other quality assurances mechanisms
Predatory publishing
Journals and publishers checker tools
Website essentials
Webinar on innovative publications
Social media, blogs, podcasts etc.
Community-controlled social platforms
Learn: Subtopic
Tools

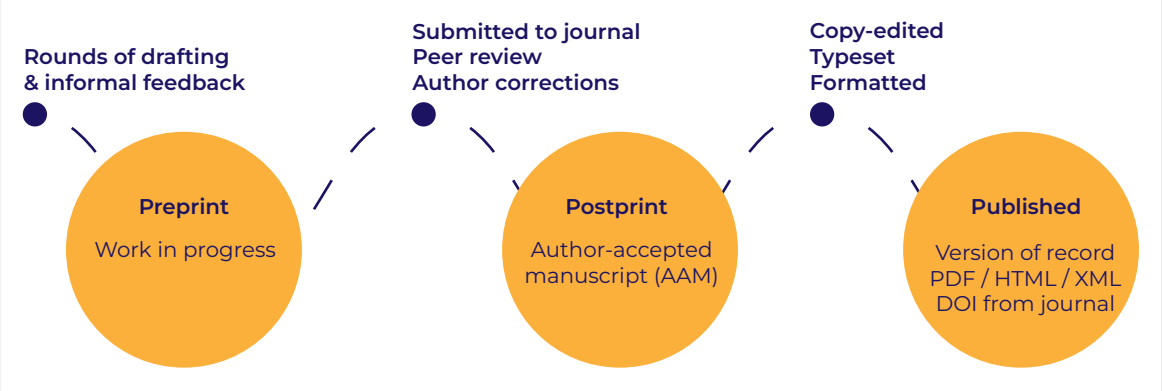
6. SHARE your research open access

An immediate, free and permanently available scientific publication is what you aim for: this is a core principle of open science, a requirement by academic institutions and funding bodies, and a critical objective that you should keep in mind no matter what solution you pursue. To this end, your research outputs (i.e. the manuscript, the underlying data and any software you developed to validate your results) need to be deposited in an open repository that ensures long-term preservation. It is advised to do so even if the journal or book has an open-access policy as it guarantees free and sustainable access to your work in case the publisher's dissemination policy changes in the future.

But let us proceed one step at a time and start with the publication lifecycle and how open access interlaces with it.

6.1. The publishing lifecycle and the open access routes

There are three main steps that make up the lifecycle of a text publication. The preprint or author's version is the first version of your manuscript that you submit for publication to a journal. Most journals allow authors to deposit the author's version in an open repository. Next stage involves the postprint or author-accepted manuscript (AAM), which is the revised version resulting from the peer-reviewing process but without the publisher's final layout. The AAM is what you would deposit via the so-called Green open access route. Several journals allow authors to deposit the AAM in a repository. And finally, there is the published version or version of record (VoR), representing the manuscript as it is published in the journal. Depending on the publishing contract you have signed, the publisher may have exclusive rights to the distribution of the VoR of your manuscript.



[Fig. 16] Typical publishing workflow for an academic journal article
Diagram derived from Thomas Shafeer, Wikimedia Commons, CC BY 4.0

There are three open access routes. The differences relate to the version of the manuscript which is disseminated in open access, who pays for it and the timing of the release. The costs relate to the so-called processing charges (often simply referred to as APCs for articles, BPC for books and BCPC for book chapters) a publisher might ask for to release a work in open access.

Let us now explore the three open-access routes and their characteristics. Additionally, two more options are listed that somehow look like open access but are not.

	Description	Cost	Licence	Open
Diamond OA	Full, immediate open access publishing, without processing charges ▸ version of record is freely available online ▸ community-driven, academic-led and/or -owned publishing initiatives ▸ publications are financed by external funds or advertisement ▸ also referred to as Platinum open access	No	CC BY CC BY-SA	Yes
Gold OA	Full, immediate open access, author or institution of affiliation pays article or book processing charges ▸ version of record is published on an open access journal ▸ access to the version of record is free of charge ▸ the publication is made available on the publisher's online platform access	Yes	CC licence	Yes
Green OA	Self-archiving in compliance with publisher's policy ▸ a version of the publication is made available on an open repository or on an institutional website ▸ often the author accepted manuscript (MM), some journals allow deposit of the version of record (VoR) ▸ embargo period may apply to book chapters and monographs ▸ access is free of charge ▸ no article or book processing charges (APC and BPC respectively) for the author	No	Author or publisher's choice	Yes
Hybrid OA	Immediate open access of a single article/chapter in a paywalled journal or book ▸ usually applies to subscription journals ▸ some publishers offer open access chapters for collected and edited books	Yes	CC licence for single item(s)	No
Bronze OA	Immediate or delayed free contents, without a clear open licence or reuse permission ▸ the author does not retain the copyright ▸ the publisher can withdraw access any time	Publisher's choice	No	No

[Fig. 17] Open-access and fake open-access publishing routes
Table derived from Open Access Colours, Padua Digital Library, University of Padua

Diamond and Gold open access are your best options. Green open access is acceptable. Avoid the Hybrid and Bronze models where possible.

6.1.1. Diamond/Platinum open access

A free-to-read, free-to-publish model is being actively pursued by CoalitionS, a group of national research funders, European and international organisations and charitable foundations (SNSF included) committed to full and immediate open access. Resultantly,

new scholarly publishing venues that are community-driven and academic-led are emerging. Currently, several Swiss universities are offering Diamond/Platinum open access publishing platforms for journals, such as the Hauptbibliothek Open Publishing Environment (HOPE) of the University of Zürich. The PLATO project, initiated by six Swiss universities and co-funded by the swissuniversities alliance, aims to develop a sustainable funding model that enables collaborative community-driven and high-quality open-access publishing in Switzerland.

6.1.2. Gold open access

A major lever in promoting open access and changing the business model underlying scholarly journal publishing has been the introduction of the so-called transformative agreements (or transitional agreements). These agreements are contracts negotiated between institutions (e.g. libraries, national and regional consortia) and publishers based on the principle that money formerly spent on subscriptions should be repurposed to support open-access publishing of the negotiating institutions' authors. If such an agreement is in place, the processing charges for publishing the version of the record are typically covered by your institution or funder and the version of the record can be openly shared. Many Swiss universities have made such agreements with big publishers like Taylor and Francis, De Gruyter or Springer Nature.

6.1.3. Green open access

Self-archiving is the minimum requirement for the SNSF and Horizon Europe. The open-access version that you self-archive on a repository must be the final agreed version of your manuscript before the publisher's layout and copy-editing, that is the author-accepted manuscript (postprint). This version must be clearly marked as distinct from the published version and link the latter, if you wish. The open-access version must be made available without an embargo period.

The largest, trusted catalogues of open-access publication venues are the Directory of Open Access Books (DOAB) and the Directory of Open Access Journals (DOAJ), which also specifies if article processing charges are to be paid and, if so, their amount

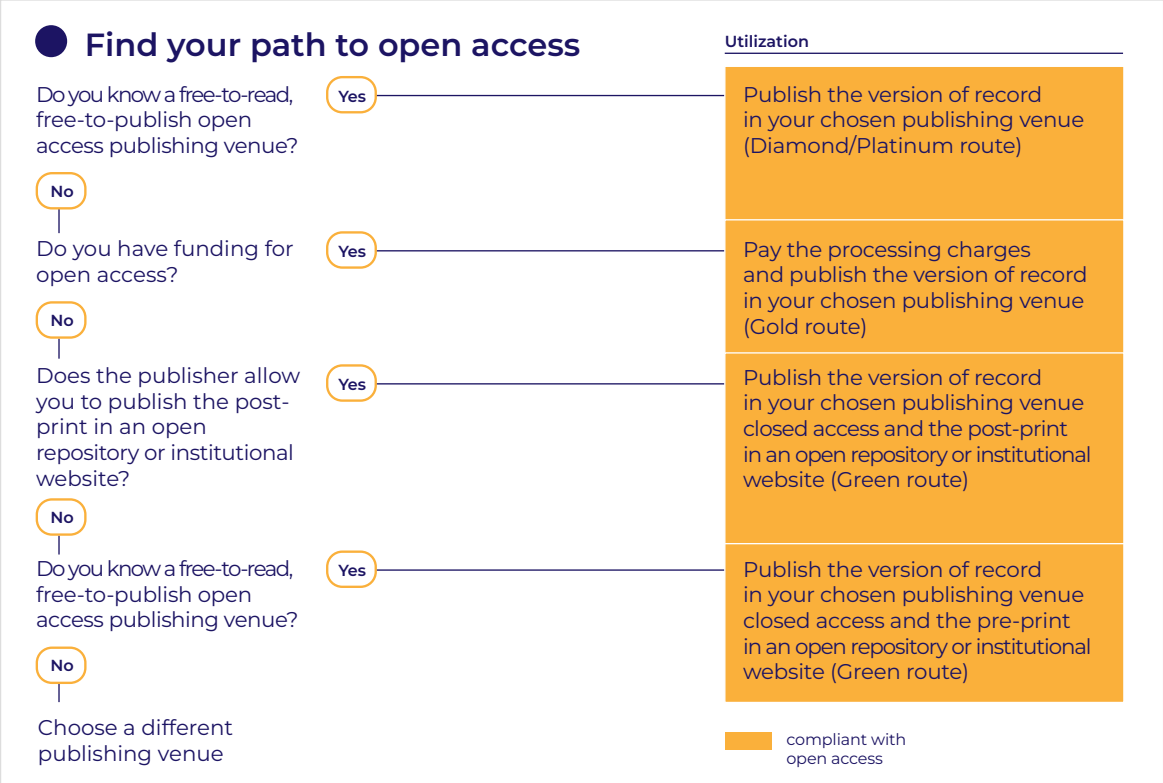
The Open Edition platform brings together electronic resources in the humanities and social sciences: it gives an overview of journals and book publishers mainly (but not exclusively) in French-speaking areas, but also lists blogs and events

To learn which journal allows for which version to be shared, including possible embargo periods, you can browse Open policy finder, which aggregates and presents publishers' and journals' open-access policies from around the world

6.1.4. Embargo period and Creative Commons licences for long-form publications

Compared to articles, open access is not such a well-established practice when it comes to long-form publications like monographs or edited collections. In these cases, the provisions of research institutions and funders committed to open science in Switzerland and the EU are therefore slightly different. For example, Horizon Europe does not tolerate any embargo period. Some other European funders admit 6 to 12 months. In Switzerland, for long-form publications and book chapters, the SNSF accepts up to 12 months provided the processing charges are not publicly funded.
While a CC BY or a CC BY-SA licence (i.e. licences fully compliant with open science) are to be preferred for long-form publications, too, funding programs usually accept stricter CC-licences. A waiver from open access requirements can be requested in case a long form-publication faces disproportionately high charges due to image rights.

6.2. Negotiating for open access



[Fig. 18] Workflow D - Find your path to open access
Derived from L. Matthias, J. Tennant, "How to make your research open access? For free and legally", 2018, figshare, CC BY 4.0

A critical advantage of open-access publishing is that the ownership of the work stays with the authors. Before submitting your manuscripts check the basics: are you allowed to post your AAM immediately upon publication with a CC licence? Be particularly careful before signing a contract with your publisher, when you have to agree on terms and conditions which usually cover details of ownership, copyright management and licensing of your work. Negotiate where needed. The requirements set by your funder and the institution you are affiliated with can present a strong argument in negotiations.

Keep all possible reuse scenarios in mind when evaluating your possible publishing avenues: signing the copyright over to the publisher as a condition for publication could prevent you from reusing your own work for teaching, republishing it elsewhere or otherwise sharing it in other scenarios. In general, be aware of the ownership status of your publications. As the creator, you are their copyright holder by default. Be aware that in some countries, such as Ireland or Austria, some of the usage rights of your work are transferred to your employer while copyright and attribution remain with the author.

Here is an overview of common scenarios:

Situation	Kind of open access	Accessibility	Where can you store it
The publication is available in print and digital formats. All content (including the graphic design) is released under a CC BY licence. This could be achieved by: a free-to-read, free-to-publish model	Diamond open access	Open	Uploaded anywhere on all open repositories

Situation	Kind of open access	Accessibility	Where can you store it
	(Green open access: possible but not your best option)		Uploaded anywhere on all open repositories
a pay-to-publish model	Immediate Gold open access		Uploaded anywhere on all open repositories
The publication is available in print and digital formats. The publisher uploads the publication on its website (after less than 12 months, in the case of a book/chapter) The publication is released under a licence, which does not allow commercial use nor derivative works (CC BY-NC, CC BY-ND, CC BY-NC-SA, CC BY-NC-ND).	Delayed Gold Open Access with embargos	Not open	Institutional website, other websites without commercial use, educational purposes, but no open repositories, no possibility to reprint
The publication is available in print and digital formats. The publisher uploads the publication with all rights reserved on its website (or after less than 12 months, in the case of a book/chapter). You need to register to download the publication.	Not really Green open access	Not open	Publishers' website
The publication is available in print and digital formats. Content is released under CC BY; the graphic design is not open. The publisher agrees on Green open access, i.e. the possibility of uploading a copy of the paper (preprint) to the institutional repository.	Green open access	Open	You can upload your work to your institutional repository. You can upload the content without the typesetting on an open repository like Zenodo.
The publisher owns all exclusive rights. You are allowed to upload a version of your book to your institutional repository after an embargo period of less than 12 months.	Delayed Green open access	Not open	Institutional Repository
The publisher owns all exclusive rights. You have the possibility of uploading a copy to the institutional repository after an embargo period (more than 12 months in the case of a book/chapter).	Not really Green Open Access	Not open	Institutional Repository
The publisher owns all exclusive rights. No possibility for you to upload a copy to the institutional repository.	Not accessible	Not open	Nowhere

CoalitionS has created a Pre-submission letter template, a Submission cover letter template and a User guide about when, how and why to use these templates

A model agreement contract with publishers for digital scholarship (US)

The Journal Checker Tool by CoalitionS lets you find out whether a journal complies with your funder's policy (if it is part of the same coalition)

The GOAL database records journals with an open access policy; it is dedicated primarily to practice-oriented journals based in Switzerland

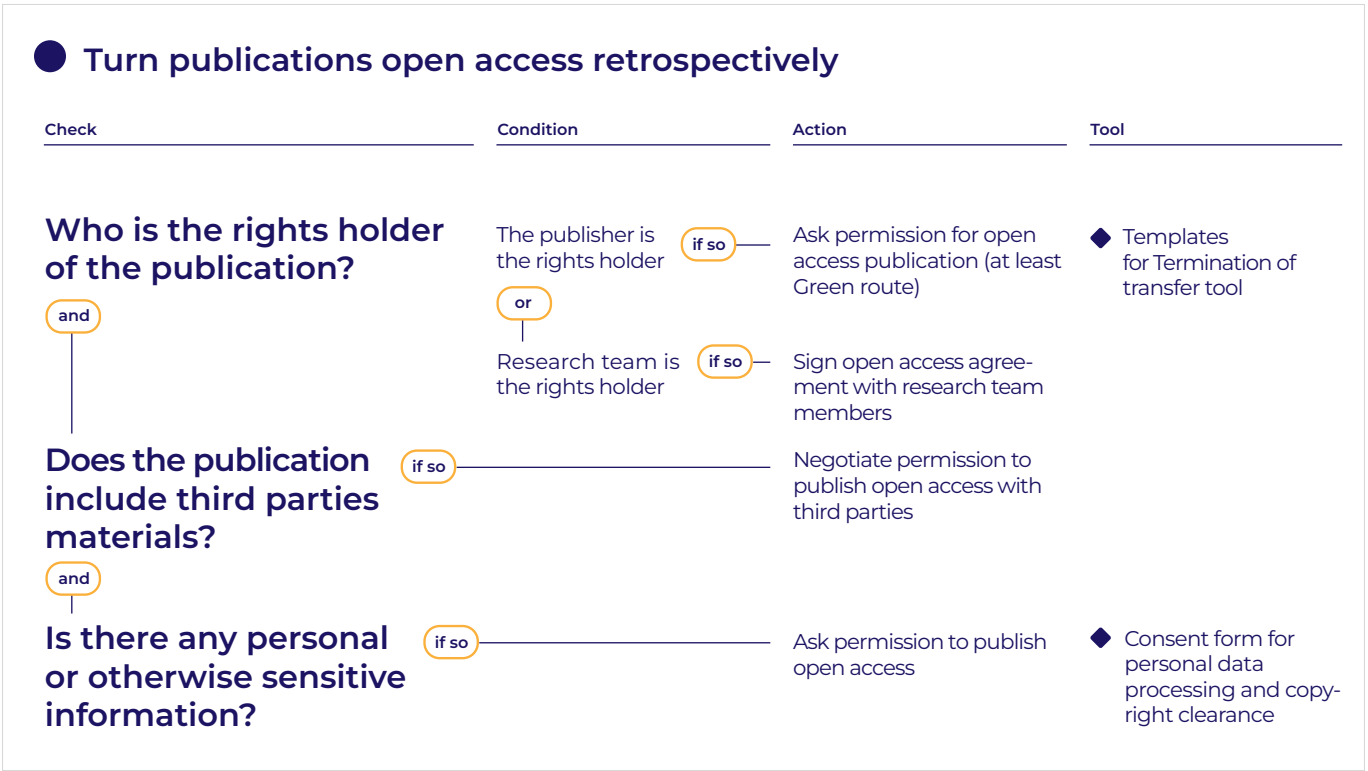
6.2.1. Turn closed-access publications into open-access retrospectively

You can also pursue open access retrospectively, for publications that you originally released without an open licence, as this possibility is becoming part of the service portfolio of more and more publishers (e.g. Routledge).

Before proceeding, check the conditions of licensing, copyright transfer and the termination of transfer provisions in your publishing contract. If you transferred the copyrights to the publisher, a new agreement between you and the publisher must be targeted. If you plan to go for the same publisher, you just need to sign a new contract which specifies licensing terms, fees involved, formats, which open licence and possible compromises. In the case of co-authorship, the decision has to be a collective one.

If the publication contains third-party materials, you need to obtain permission from all contributors to publish such resources under an open licence.

Acquiring an open licence often comes with a cost. If you do not have the resources for it, you can still pursue the Green open access (or self-archiving) route and legally deposit your postprint (author accepted manuscript), or at least the preprint and the underlying data without too much hassle.



[Fig. 19] Workflow E - Turn publications open access retrospectively

The Termination of Transfer tool or the SPARC Author Addendum are useful tools that help you to legally share your work and terminate or modify restrictive licensing arrangements you have made with publishers in the past

6.3. Choose your open-access publication venue

6.3.1. The special flavours of the arts, design and music publishing ecosystem

The fields of arts, design and music research are embedded in a peculiar ecology when it comes to publishing. Books and journals relevant to your field might be published by small entities, i.e. specialised publishers, non-profit organisations like associations, or local authorities (the cantons in Switzerland). Such publishers often lack the resources and/or the knowledge to pursue open access and might be concerned that it devalues their work, given the effort and extra value they put into their productions, at times not even asking for article/book processing charges. Publications in arts, design and music also might target audiences that go beyond the typical scholarly community to include, for example, practitioners. They may also be published in a variety of languages uncommon in other disciplines where English is well established. These peculiarities do not mean that you should surrender open science nor that you should renounce publishing your work through your preferred venue. There are ways for you to negotiate an open-access licence that publishers can welcome. In the worst-case scenario, consider self-archiving of selected outputs.

Negotiating could come with some compromises, like depositing in an open-access repository a version of your work that has low-resolution images or excludes some content. But even such compromises are preferable to entirely forfeiting the benefits of open science. Marking your work with a DOI will ensure all versions of your work (the published one and the one you deposited in an open repository) are clearly linked.

6.3.2. Indicators of good quality publishing

The more transparent a journal is regarding its editorial, peer review and pricing policy, the easier it is to build trust towards it. In the ideal case, the primary emphasis falls on the term "scholarly"; recognising the names of your peers on the editorial board or among the authors is usually a promising indicator.

Priority criteria include compliance with your institution's or funder's policies (e.g. relating to hybrid open access or embargo period), assignment of rich metadata and persistent identifiers (such as a DOI) to publications, and indexing by scholarly discovery services such as OpenAIRE Research Graph, Project MUSE and Google Scholar. The two latter aspects are indispensable for the discoverability and visibility of your research in the increasingly noisy scholarly communication landscape.

a. Peer review

Then comes the stage of peer review: does the publisher request it and how is it carried out? From the second half of the 20th century onwards, peer review (open or blind, single or double) gradually became a standard to guarantee quality control of scholarly publication venues. It is a practice that carries an enormous weight in terms of gatekeeping; shaping disciplines, publication patterns and power relations; and governing the (re)distribution of resources such as research grants, promotions, tenure and even larger institutional budgets. A good practice is to make the process transparent by disclosing the identity of the reviewers, publishing their reports and possibly opening up the process to the wider community.

b. Quality assurances in academic book publishing

In the case of academic books, other practices have taken hold parallel to peer review. An established one is the editorial review, other selection and quality assurance mechanisms might have been defined by the publisher. Peer review of books in itself exhibits a great diversity; it can happen at the stage of the book proposal, the manuscript or chapter level and may take place internally, among authors of an edited volume, externally, open or closed. The best

course of action is to check the publishers' or series editor's policy to find out if an open-access book publisher conducts peer reviews or has other quality assurance processes in place. Some transparency regarding such policies is brought about by the OPERAS Peer Review Information Service for Monographs (PRISM), which provides information to the Directory of Open Access Books (DOAB) from a growing number of publishers who have already implemented this service.

c. Predatory publishing
Exercise caution with standardised emails that invite you to publish previously unpublished works presented at conferences or blogs, especially in venues with a generic scope. This is often an indicator of predatory publishing. You have every right to be suspicious if the collection or the topic of a volume is not specified, or if you cannot find information on their editorial and pricing policies.

The OA Books Toolkit provides information around topics like selecting a publisher, funding, peer review, licensing, or dissemination and is a well-established tool for researchers who aren not sure about the legitimacy of a journal. It is curated by OAPEN, the biggest European network which aims at achieving a sustainable publication model and increased visibility for academic books in humanities and social sciences

Think.Check.Submit helps you identify trusted publishers through checklists

"The OA Mythbusters" series by the Open Access Book Network, a network specialised in open-access books

A guide to "Predatory and Questionable Publishing Practices: How to Recognise and Avoid Them"

6.3.3. Paper & digital: mind the publisher's attitude

Most publishers produce two editions of the same work: a paper and a digital version. What is included in these two versions depends on the publishers' attitudes towards open access:

- Enriched digital publication: the digital edition is approached as an opportunity to explore alternative forms of publishing and add extra multimedia content missing in the printed version. Due to its complexity, you are encouraged to get in touch with the publisher in advance in order to start planning the enriched digital publication from an early stage of your research project.
- Print and digital editions are the same.
- Impoverished digital publication: the open access digital publication lacks some of the content that is only available in the printed edition. For example, this is the case with digital versions featuring low-resolution images or no images at all due to copyright issues.

The three approaches comply with open access (and SNSF's) requirements as long as they provide immediate and free access to the research outputs according to the FAIR principles. The funding body might ask you to justify the discrepancies between the print and the digital version.

6.3.4. Creating a self-publication in open access

Articles and books can be self-published. You can create and share self-publications on PubPub, which also allows co-creation and collaborative editing. Zenodo can store self-publications too. If you are planning to set up a new journal yourself, dedicated to an emerging field of research, Open Journal Systems (OJS) offers all you need to manage your research-to-reader workflow; you can register the journal on DOAJ.

6.3.5. Institutional publications

Many universities, and in Switzerland most of them, have adopted an Open by Default (unless differently stated) policy, which demands that all content produced by the university be released in open access. This policy also applies to websites, publications, conference proceedings, brochures, magazines, official documents, videos, sound recordings and photographs.

a. Share your training material

Turning your teaching material into an Open Educational Resource (OER) is a way to contribute to open science and the advancement of the human right to access high-quality education. OER entails teaching and learning materials that anyone can freely reuse (and, in a co-creative spirit, improve) without having to ask for someone's permission. As an OER author, you can choose to retain some, if any, ownership rights. There are many OER platforms, look for the ones that suit you best. In UNESCO's "Guidelines on the development of open educational resources policies" you can find examples of platforms and good practices. In Switzerland, members of the institutions like ZHAW, FHNW, HEPL, PHSG and PHSZ have the right to upload and publish their training material on an OER repository hosted by Switch. Everyone can access the database and download the published materials. For other creators to publish materials, their institution must affiliate with the repository.

b. Theses and dissertations

In Switzerland, each university has its own policy regarding PhD theses and dissertations; hence, you need to check your university's open access policy. If you received funding from either public or private institutions, check their policies too.

Your university might ask you to choose from the following access rights:

- immediate open access: your thesis will be published immediately on your institutional repository after the internal review process has been completed;
- embargo: your thesis will be published on your institutional repository after the chosen embargo period.

In case your thesis involves a patent, its distribution can be delayed while the patent process is being completed. Consider depositing your thesis in an open archive as well, if your university's policy allows it.

"Il diritto d'autore nell'insegnamento e l'open access" [Copyright and open education resources], by Suzanna Marazza, competence centre CCDigitalLaw, USI, 15 March

6.4. Models of innovative publications: accommodating multimedia in open access

Netpublications, expandable papers, multimodal texts, living documents, enhanced or enriched publications, scholarly digital editions, multimedia productions, what they all have in common is that they are more than just text. More often than not, the output of a research project in the arts, design and music fields does not come in written form, but it can be represented as a video, recording, image, interactive visualisation of spatiotemporal data, 3d models, and much more. This is an asset of these disciplines, as well as a challenge since accommodating this kind of output, is a challenging task.

Despite ongoing technological progress, the infrastructure that is needed to manage your work according to the open science paradigm is still lacking. This delay is mainly due to the fact that the current infrastructure is based on text-only publications developed over two decades ago, with mostly STEM disciplines in mind. While enhancements are being planned, there is no standard way of fitting multimedia within this infrastructure, you have to experiment and possibly accept compromises. The overall experience of your work (its layout and interactivity features) is an aspect that might get altered. It is a matter of finding the right balance between your ambitions and available resources; eventually, the decision is yours.

a. Clarify your expectations and needs

First of all, ensure the clarity of your expectations: where and how would you ideally publish your work? Who would you want to access and reuse it? Will it be a collaborative project? What is the timeframe of your project? It is strongly recommended that you start exploring solutions with the infrastructure experts in your university (that is the data steward or the librarian) to find out if there is a virtual research environment (VRE) connected to your institution that meets your needs. VRE provides open-source tools and services that support scholars to collaborate, edit, analyse and publish their research. If you are planning on finding ways to enhance the digital version of your printed publication, get in touch with the publisher at an early stage.

b. Welcome compromises

A common solution is to have an impoverished version (e.g. only the text-based content) following conventional open-access routes and link its multimedia version or individual materials published elsewhere. This can be an enhanced version of your printed publication (e.g. an enriched eBook) or a project website hosted by your institutional infrastructure. Individual multimedia output can be stored on online repositories, alongside your data, while streaming platforms and social media are better suited for non-academic communication purposes.

c. Embrace redundancy

Different platforms serve different purposes; so, reuse your content, but ensure that you assign DOIs, and persistent identifiers → **2.2.3.** to avoid confusion, allow versioning, and clarify relationships amongst elements. Redundancy can happen at various stages, for example in publishing (e.g. through a data journal → **6.5.**) or in communicating to broader audiences and in archiving as well! For the latter, check → **6.4.1.** for strategies to make your website future safe.

d. Recommendations

While evaluating your options, do not forget the following parameters:

- visibility. This is achieved by listing your work in library catalogues and subject portals as well as by making it retrievable by scholarly search engines. For this purpose, you need a DOI. Your project website, for example, is invisible to scholarly communication services, unless it is hosted on an institutional platform (and also in this case less visible than a traditional publication in a research repository).
- Citability. Publications must be provided with persistent identifiers and be permanently retrievable. For this too, you need a DOI (and consider using more than one

based on the kind of differentiation you want for your outputs). Keep in mind that most scholarly and research information systems track DOIs, not persistent URLs (PURLs).
- Archiving. Think long-term. This implies preferring open formats, open-source software and open solutions to store your data.

The main takeaway is that whatever solution you come up with, it is critical that your multimedia work has a DOI.

Lastly, make sure that those who will evaluate your work have the means to appreciate your non-standard publishing mode. Apart from their specific competence, it is recommended that you provide them with a detailed explanation of your approach, the adopted solutions and their rationale.

For a hands-on perspective on the challenges of handling multimedia content in open science, also highlighting common mistakes, have a look at this webinar: "(Un)limited options – open access and multimedia publications", by Friederike Kramer, Universität der Künste Berlin, 19 January 2024

To reflect on options and check up-to-date resources and good practices:
- NFDI4Culture, a website curated by a consortium of German institutions dedicated to the humanities that also provides project-specific support
- Dariah Open, DARIAH's blog on scholarly practices in the arts and the humanities
- RIDE – A review journal for digital editions and resources: the reviews by expert peers offer a good opportunity to learn how to improve current practices not only to editions but to web publishing overall

Examples of innovative long-form scholarship:
- "Mid-Republican House From Gabii", by R. Opitz, N. Terrenato, M. Mogetta, 2016, University of Michigan Press
- "Online Chopin Variorum Edition", 2003-2017, Cambridge University Press - Mellon Foundation
- "Denis Diderot 'Rameau's Nephew' – 'Le Neveu de Rameau': A Multi-Media Bilingual Edition", M. Hobson (editor), K. E. Tunstall and C. Warman (translators), Pascal Duc (music editor), 2016, Open Book Publishers
- "As I Remember it: Teachings from the Life of a Sliammon Elder", by E. Paul, D. McKenzie, P. Raibmon, H. Johnson, 2014, UBC Press
- "Walk on the Beach: Things from the Sea, Volume 1", ed. by K. Overbey and M. M. Williams, 2016, Punctum Books

Example of a project developed in a Virtual Research Environment: "MARK16: a Virtual Research Environment supported by the SNSF", by C. Clivaz et al.

For more publishing innovations from arts and humanities fields, you can read:
- "OPERAS-P Deliverable D6.5: Report on the future of scholarly writing in SSH", by M. Maciej et al., 2021, version draft, Zenodo
- "Books Contain Multitudes: Exploring Experimental Publishing", by J. Adema, M. Mars and T. Steiner, 2021, COPIM

6.4.1. Website essentials

When planning to set up a website for your research project (or a netpublication or scholarly digital edition), consider the principles of long-term accessibility and discoverability by crawlers specialised in academic content. Hosting it on your institutional platform is your best choice. This will also make it easier for you to upload your website on the Internet Archive through its Archive-It program, which is only available to organisations. As an individual, you can upload single items, like webpages, texts or media. Pushing your website to Gitlab together with its documentation, and getting a DOI through Zenodo, will ensure that all the code used to design it will be accessible in the future, including for further developments.

Here are some general recommendations:

- use open formats as much as possible, particularly for your most important content;
- apply web standards and accessibility guidelines;
- use Creative Commons licences where possible;
- include a site map and use standard links (e.g. avoid relying on JavaScript) to facilitate the crawlers' job and archiving;
- your home page should ideally be easily accessible, and if you wish to include sophisticated animations and interactions, create a standard HTML alternative version of it;
- embed the metadata;
- avoid robots.txt exclusions unless you are not interested in archiving specific content;
- objects like video and audio should be embedded within your website as much as possible and not in third-party websites;
- maintain stable URLs and redirect from old URLs to new URLs when necessary;
- do not forget to use permanent identifiers such as your ORCID iD and DOIs.

✳ Guidelines for preservation-friendly websites by Princeton University Library, The Library of Congress and Nicholas Taylor, a former librarian at Stanford University

Web archiving services:

- Apart from the historic Internet Archive, which offers solutions to institutions and single-page archiving to individuals, check national services: the Web Archive Switzerland is a long-term preservation service for websites with strong ties to the country's culture. The initiative, by the Swiss National Library, is selective: you can nominate your project for consideration. Password-protected content and external links are not archived

ArchiveReady is a free online tool which evaluates if a website will be archived correctly by web archives such as the Internet Archive. It does so by checking characteristics like standards compliance and accessibility

Basic practical advice on how to communicate through your research website

6.5. Open data journals

This kind of publication offers you an opportunity to describe, document and contextualise your data and the techniques you applied. Established examples in the humanities are the Journal of Open Humanities Data and the Research Data Journal for the Humanities and Social Sciences, a Diamond open-access journal that also allows you to exhibit selected datasets like illustrations and other multimedia. A data journal can also be video-based, such as the Journal of Embodied Research.

6.6. Overlay journals

A straightforward way to pursue Diamond open access is through an overlay journal. These are journals that instead of producing their own content select the ones that are hosted elsewhere and are openly accessible. Typically, researchers can submit their preprint version as soon as they have deposited it in an open repository. The journal reviews it (usually in a single-blind or open peer review) and, if accepted, the article is published on the journal's website, possibly following modifications as asked. This practice allows you to receive a proper citation and a digital object identifier (DOI). Overlay journals have not been particularly popular in the realm of humanities, but new dedicated initiatives are being launched, amongst which Transformations, a Diamond open access overlay journal dedicated to the humanities, built by Dariah and hosted on the Episciences platform. Transformations ensure that data and metadata are open, standardised, structured, easily accessible and interoperable, featuring a unique, persistent identifier (DOI), long-term preservation and that authors retain their property.

Erzsébet Tóth-Czifra, "Born-digital journals built on top of scholarly powerhouses: 10+ 1"

6.7. Communicate!

There are several ways in which you can share your findings and engage your scientific community as well as the wider audience: ways that can foster the recognition your work deserves, help consolidate your profile as a researcher, and further celebrate your commitment to open science. By communicating to the public (through social media, a website, a blog, but also using physical spaces and direct communication opportunities), you contribute to bridging the gap between the scientific world and its technicalities on one side and public awareness and understanding on the other, thus supporting the democratisation of science.

An excellent example of how to make the most of your work is The Lothian Diary Project, a multidisciplinary project dedicated to the impact of the COVID-19 pandemic on Edinburgh and Lothian residents. Selected subsets of data originally deposited in the institutional repository have been made public in the Journal of Open Humanities Data. The project has its own website with links to various social media and where findings are properly listed, each provided with a persistent identifier. Findings include papers, a report to the Scottish Parliament, talks and discussions.

✳ Altmetric tracks mention of research outputs by monitoring social media, academic blogs and other platforms

6.7.1. How to deal with social media

Sharing your work on social media is often suggested in advocacy workshops especially targeting early career researchers. This practice is highlighted as a means to make a bigger research and societal impact, improve one's outreach and gain more recognition. Below are a few suggestions for you to take into consideration when sharing your work on social media.

a. Check the basics

- Are you the copyright holder of the materials to be shared? If not (because it is owned by your institution or another third party), does the licence allow open sharing?
- Are there any legal, GDPR-related and ethical barriers to open sharing? If so, can they be removed?

b. Use de-centralised and community-controlled platforms

In 2022, the change in ownership and curation policies of Twitter (now X) and the associated controversies showcased how much a critical mass of users, including scholarly communities, are exposed to such proprietary platforms. It also compelled societies to look for more transparent, community-controlled, fairer alternatives. The FediGov initiative raises awareness of these issues in an easily accessible manner and offers more sustainable alternatives to the most commonly used social media platforms: Mastodon instead of X, Pixelfed instead of Instagram, and Peertube instead of YouTube.

c. Linking instead of copying

The most sustainable way of sharing your work on social media is simply to link its persistent identifier or Wikidata ID/link instead of republishing. This allows you to keep versioning clear and even to track its citation and usage metrics.

d. What about academic social media platforms?

The popularity of platforms like ResearchGate and Academia.eu seem to be steady over the years, but these are proprietary platforms with all the ensuing issues. Consider using Scholia, a scholarly discovery service that creates visual scholarly profiles for topics, people, organisations, species and chemicals, using bibliographic and other information in Wikidata.

✳ The blog post "One more word about ResearchGate/Academia.edu and why using these platforms will never be equal to proper self-archiving" explains it all and gives you ideas for alternatives

6.7.2. Academic blogs

Solid evidence suggests that blogging about your research does not just make your work (ongoing work in many cases) easily accessible to audiences of different kinds but it also improves your academic writing. Hypotheses platform, managed by OpenEdition offers blog spaces freely for academics and brings them together in a catalogue broken down by language and topic.

Do not forget to (self-)archive and follow proper citation principles of sources as well as provide an indication of how to mention your own communication efforts (using persistent identifiers).

✳ How to build your online presence, a webpage curated by the Simon Fraser University

6.7.3. Academic podcasts

Often informal in tone and accessible in the language, podcasts are a great way to engage with a wider, non-specialist audience. Take good care of the quality of your recordings and editing, archive your podcasts in an open repository and make them citable. For example, the Open Science Talk is a publishing service featuring podcasts, it is provided by the University Library at the Arctic University of Norway but is also made available on the non-academic platform Soundcloud.

6.7.4. Other ways of making your work visible

Consider sharing your outputs on Wikimedia Commons, linked to Wikipedia and Wikidata, and/or Europeana, the discovery portal for European heritage. Humanities Commons is another option: it has its own repository and allows uploading to member organisations and their affiliates.

How do I fund open access?

How do I comply with funder's and institution's open access policies?

Funding rich media publications

Funding statement

Tool to check publisher's compliance with funders

Learn: Subtopic

Tools

7. FUND your research publication

7.1. How to fund open access

Open science implies a change in the traditional business model in publication. A fundamental difference to the traditional closed access (or paywalled) models is that open access costs of publication and dissemination are mostly moved from the demand/reader side to the supply/author side. This, however, does not mean that authors need to pay Article or Book Processing Charges from their pockets. These costs are increasingly covered either by funders of external research grants (such as the Swiss National Science Foundation) or by research-performing institutions. So, Horizon Europe-funded projects include open-access publication costs in their budget, while in Switzerland, universities and other research institutions carry out open science relying on transformative agreements and institutional open-access publication funds.

This, however, does not always fully cover the needs of scholars and practitioners. To mitigate gaps in the funding landscape, organisations like DARIAH are introducing dedicated open-access book publication grants. In many cases, scholars without institutional affiliation and project funding, or researchers coming from less-resourced countries can apply to the publisher for article and book/chapter processing charges' waivers too.

Overall, a system where the authors are charged the processing charges is not a sustainable solution, though. Starting in 2025, CoalitionS has committed to no longer provide financial support to transformative agreements. CoalitionS (and the revised Swiss open access strategy as well) is also supportive of legally grounding the so-called secondary publication right (i.e. the right to republish publicly funded research in an internet searchable open access venue), as is already being implemented by some countries in Europe.

A different funding model is therefore needed and emerging, one that is considered to be more sustainable: academic institutions and their libraries pay in a shared pot to collectively fund open access publishing venues that are important for their communities and where their authors publish free of charge (Diamond open access). This way, these institutions take back ownership of and control over the publishing infrastructure instead of simply paying publication prices defined by for-profit publishers. The Open Library of Humanities is probably the best-known example of this approach. Europe and Switzerland are committed to developing an ecosystem suitable for Diamond open access.

For up-to-date information about open-access funding options available to you or your research team, contact your institutional library or your national research funders (SNSF, DFG, NWO etc.). Pay attention to what can be funded at what point in your research lifecycle, as some costs can only be covered through the initial grant.

The OAPEN Open Access Books Toolkit monitors available funding for open-access publication of academic books across Europe

Funding opportunities in Europe

7.1.1. Open access funding opportunities in Switzerland

An information, funding, open access journal finder for Swiss scholars is available on the SNSF's website, where you can also learn about its pilot project using the ChronosHub platform. Through this platform, you can apply for processing charges for your publications, even after the project is concluded, provided that the journal is peer-reviewed and its scientific quality is acknowledged. Further, in collaboration with the SNSF, swissuniversities offer scientists and scholars practical and financial support for the open-access publication of their work. To ensure the implementation of open access, the Consortium of Swiss Academic Libraries (CSAL), which involves most Swiss academic institutions, has the mandate to negotiate licences with publishers, moving from a "pay-to-read" to a "pay-to-publish" model. Switzerland's revised open access strategy is committed to fostering more sustainable publishing routes which are community-driven, free-to-read and free-to-publish. Be sure to check if any Diamond open access publishing venue meets your needs. Finally, for information and guidance on Swiss cooperation and funding opportunities within the EU Framework Programme Horizon Europe and other initiatives, you can consult Euresearch.

7.1.2. Funding of rich media publications

If you want your research to appear as an enriched book or paper, or with a project website, conventional open-access funding routes might not be adequate. For example, in Switzerland under the SNSF funding, the costs of a website can be met through the funding grant of your research project. It is therefore important to clearly indicate the website as a necessary resource for your research at the stage of your application. Websites conceived for dissemination purposes only are not covered by such funding. Enriched e-publications are supported by SNSF's open-access funding tools as long as the long-term preservation of the digital objects is financed by additional funding. Such provisions may change over time as arts, design and music research is being better integrated into the open science infrastructure, following the acknowledgement of diverse disciplinary needs.

7.2. Comply with your funder's and institution's open access policies

The main requirements of funders and institutional open access policies are usually related to Creative Commons licences, embargo policy, request for a DOI and trusted repositories where you can upload your work.

You can make sure that you are compliant with your funder's and institutional open access mandate by visiting their website and checking their open access policy or browsing the ROARMAP, the Registry of Open Access Repository Mandates and Policies.

Open access policies usually outline two main ways to comply with them, either via publishing your works in an open-access journal or book series, or via self-archiving, that is, depositing a copy of your work in a trusted repository (for the different routes to open access publishing → 6.

To find out whether your chosen journal is compliant with your funder's or institution's mandates and to learn exactly which version of your paper they allow you to share via self-archiving, you can consult Open policy finder by the not-for-profit organization Jisc (UK) or the Journal Checker Tool developed by CoalitionS.

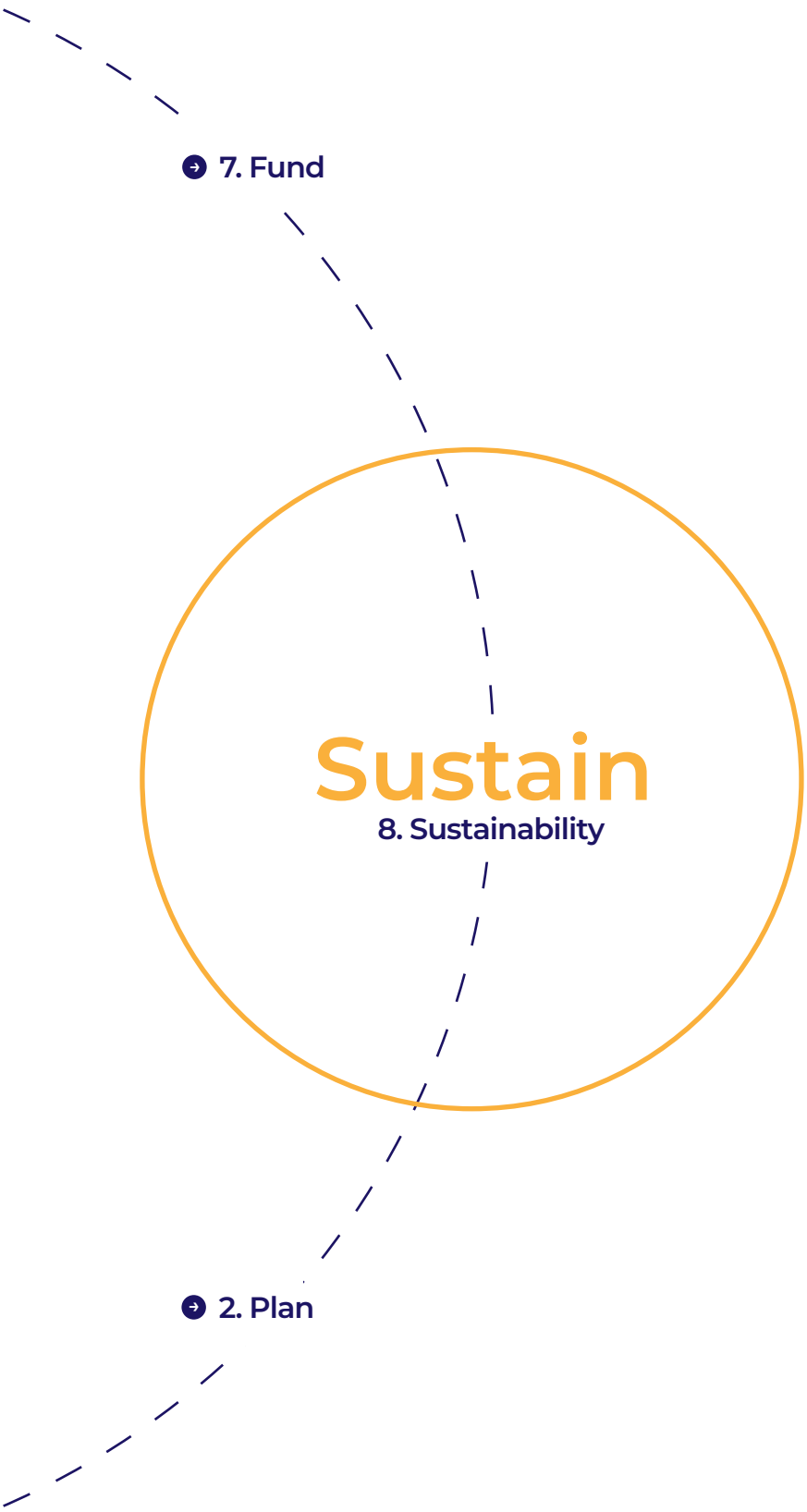
7.2.1. Funding statements

Adding a funder statement to your publication is often required and, even if not, it is good practice to have it. It usually includes a citation of your funding body, its funder ID (if one is available) and your grant number too. This way, it becomes easier to track your work and the impact of your funding not only on humans but also on machines such as bibliometric services.

Check if your funder has a specific template for such a statement. For examples and more details, you can consult the "How to cite funding research" guide by a British agency providing support for academic writing.

How can open science be sustainable for me?

How can the afterlife of my research projects be safeguarded?



Sustainability scenarios

Institutional good practices

Learn: Subtopic

Tools

8. Sustainability

This is our closing section, but open science is conceived as a recursive process. What will happen to your work once the research process is completed should be something you had in mind from the outset of your research journey (as captured in your Data Management Plan), with the aim of generating shared knowledge that can fuel further research – by you or other scholars.

8.1. Sustainable how?

Several recurring questions arise while discussing open science and how to make it affordable, especially for artists and practitioners.

a. Check your resources
Practising open science requires a considerable effort to familiarise with procedures and tools. It is therefore advised to plan properly for training and updates, identifying available resources (financial and in terms of manpower) in a timely manner. Such a struggle may happen only once, while your benefits will last. Learning how to manage your data will save you time and effort later, during the active phase of your research project and after, in case you need to reuse some content yourself. As for the information that you need to record systematically, consider getting your community involved.

b. Livelihood dilemma
For artists, designers and musicians, open access might seem conflicting with their commercial self-interests. Nevertheless, it is worth noting that the research data you are required to open have been generated through public funding. If you produce and use works that go beyond this, there are ways to protect your rights, such as using exceptions in the sharing provisions or sharing only a selection of your data in open access.

c. Dare to delete
Not everything you produce is meant to be preserved. Some data you are required to dispose of (personal data) and some may lack long-term value. So, what should you keep? There is no standard answer; on one hand, you have to balance multiple dimensions like the scientific value of your data and its potential for further research, its cultural value and the legal and contractual obligations imposed by the institutions that supported your research and, on the other hand, your publisher. Of course, data needs funding for storage, maintenance, refactoring or migrating ageing codebase. Eventually, storing large amounts of data has an environmental impact too: are you sure all your unedited super long interviews are worthy of long-term preservation?

8.2. Sustainability scenarios

The following scenarios, adapted from the King's College Digital Library project sustainability unit, help you think through possible paths to ensure the afterlife of your research project.

8.2.1. Scenarios

Scenario 1.
Your institution or one of the project partner institutes can guarantee the maintenance of your resources in their original format of deployment, including hosting, maintaining functionalities (such as search functionality or hyperlinks) and visual identity (with or without manpower dedicated to sustaining the output). In this case, you may set up a service level agreement with the hosting institution to clarify and agree on details of maintenance.

Scenario 2.
Your institution, one of the project partner institutes, or a third-party organisation can guarantee the maintenance of your resources via migration with compromises regarding their original format of deployment. This includes the possibility that your project output becomes part of a bigger collection hosted elsewhere.

Scenario 3.
"Boxing" and archiving the different components and layers of the project in trusted repositories and archives like text-based data, multimedia, photos and illustrations, software layers in a data repository, associated publications in a preprint repository and interfaces in web archiving services. Interlinking the different content types via persistent identifiers (see an example here under "Related identifiers") significantly improves their contextualisation and re-usability. Although this solution comes with a serious loss of functionality and aesthetics of the outputs, especially in the case of complex web artefacts, it still guarantees long-term and stable accessibility, citability and, if well documented, reusability of the hard-earned resources. In this case, exploring how your institutions or external data infrastructures (national, thematic, or global) can support the export, ingestion and archiving process is key.

8.2.2. Examples of each scenario from around DARIAH

The three scenarios are applicable to projects both big and small. The following are three notable examples:

Scenario 1.
The SSH Open Marketplace has been among the flagship outputs of the Social Sciences and Humanities Open Cloud Horizon 2020 project. By the time the project concluded in April 2022, the partners agreed on the commitments taken for the long-term maintenance of the Marketplace. In particular, DARIAH, CLARIN and CESSDA (all part of the European Research Infrastructure Consortium) signed a collaborative and binding agreement to give resources (hosting capacities, technical helpdesk, budgeting for manpower ensuring the population and social life of the service etc.) to maintain and further develop the SSH Open Marketplace after the end of the SSHOC project (If you are curious to learn more about it, check the SSHOC Exploitation plan and SSH Open Governance). Following the SSHOC project, the SSH Open Cluster serves as a framework to collaboratively develop thematic branches of the European Open Science Cloud.

Scenario 2.
The Standardisation Survival Kit has been among the flagship outputs of the PARTHENOS H2020 project. After its conclusion in 2019, DARIAH's Guidelines and Standards Working Group was in charge of maintaining and further populating the service. To complement the voluntary effort of the working group, in 2022, the Standardisation Survival Kit has been integrated into the SSH Open Marketplace as one of its key components.

Scenario 3.
Within the framework of the same PATHERNOS project, a set of Training Suites has been developed. Once the project concluded, the partners in charge of the development of the training materials exported them from the website and archived them on Zenodo in easy to reuse and re-adapt formats compatible with different teaching/learning contexts. The pages of the website have also been submitted to the Internet Archive.

Even if no external grant support is available, it is still possible to significantly strengthen the sustainability of research outputs. An example is provided by a case study describing the linguist Naomi Truan's strategy (and results).

8.3. Institutional good practices

Specialised institutions in the fields of art, design and music are facing similar challenges. Learning about their practices and experiences can be a useful source of inspiration.

King's Digital Lab

King's College is clearly among the most important enablers of digital scholarship in Europe. The volume and richness of the digital outputs and collections produced within the institution – be it research software, exhibitions, visualisations, cultural heritage data enrichment or multilingual publications – made the relevant departments well aware of the pressing sustainability needs and constraints. As a response, the Kings Digital Lab set up a strategy and put resources in place to document and save over 100 digital humanities projects. Understanding how they select, document, enrich, evaluate and store the different components can be useful.

Centre for Digital Humanities at Princeton

Similar to the practice of Data Management Planning, the Centre for Digital Humanities at Princeton sets up charters with project teams at an early stage to figure out role and responsibility distributions around keeping project outputs alive. In their approach to building capacity for sustaining DH projects and preserving access to data and software, they view projects as collaborative and process-based scholarship. Therefore, their focus is on implementing project management workflows and documentation tools that can be flexibly applied to projects of different scopes and sizes, and also allow for further refinement at a later stage. The sharing of these resources, together with their real-life use cases in digital humanities projects, is meant to benefit other scholarly communities and to sustain a broader conversation about sustainability issues. You can read more about their practices here.

J. Edmond and F. Morselli, "Sustainability of Digital Humanities Projects as a Publication and Documentation Challenge", 2020, Journal of Documentation

K. Fitzpatrick, "Planned Obsolescence: Publishing, Technology, and the Future of the Academy", 2011, New York: New York University Press

9. Checklists and templates

9.1. Checklists

9.1.1. Data Management Plan

This checklist includes the information that your Data Management Plan must include no matter what format you are required or choose to use.

Data documentation and organisation

- ☐ Data source: Specify if it is produced by you or reused.
- ☐ Data formats: Identify open standardised file formats, keep the raw version as well.
- ☐ Folder structure: Decide how you organise your folders.
- ☐ Naming conventions: Decide how you name your files.
- ☐ Metadata: Establish metadata standards and determine specific data fields or elements to be used in describing data for specific uses.
- ☐ Controlled vocabulary: Decide on a consistent vocabulary to describe your data.

Sensitive data

- ☐ Establish ways of dealing with ethical issues and codes of conduct.
- ☐ Decide how to handle sensitive data during and after the active phase of your research.
- ☐ Mark sensitive data as such.

Access

- ☐ Assign a DOI or PID.
- ☐ Add the right statement.
- ☐ Assign a Creative Commons licence and link it.
- ☐ Specify whether there are any reuse restrictions or embargoes on the data.
- ☐ Indicate which data(sets) you plan to publish and where.

Data storage

- ☐ Data size: estimate storage needs.
- ☐ Storage: decide how and where the data will be stored.
- ☐ Backup: decide how often and where the data will be backed up.
- ☐ Risk management: plan how the data will be recovered in the event of an incident.

Data preservation

- ☐ Decide where you will store your data for long-term access.
- ☐ Decide how you will prepare your data for long-term preservation.
- ☐ Decide how you will select the data to be preserved.

Responsibilities and resources

- ☐ Identify who is responsible for what regarding data management.
- ☐ Determine what resources you will require.
- ☐ Check if additional specialist expertise or equipment is required.

Budgeting

- ☐ Estimate storage costs for the active phase of your research.
- ☐ Estimate sharing costs, if any.
- ☐ Estimate storage costs for long-term preservation.
- ☐ Estimate the manpower needed to manage your data.

9.1.2. FAIR

Your dataset complies with the FAIR principles if you can answer YES to the following points.

- ☐ The data(set) has a persistent identifier.
- ☐ It is accompanied by metadata (and further documentation) that is sufficient to understand the data content and context.
- ☐ The metadata is based on a controlled vocabulary and metadata standards, and is accessible without restrictions (Creative Commons Zero licence).
- ☐ It is clear how to access the data.
- ☐ The data(set) has a user licence which clearly indicates the conditions for reuse and the licence is linked.
- ☐ If reuse restrictions apply, these are clearly marked as exceptions and access instructions.
- ☐ The data files are available in open formats (or at least in a well-supported proprietary format).
- ☐ The data belonging to the same project is interlinked.

9.1.3. Collaboration with GLAMs

For a successful collaboration with GLAMs, your best practice should include the following steps.

- ☐ I contacted the cultural heritage institution in the initial stages of my research project.
- ☐ I have identified the data I want to work on.
- ☐ I have clarified the project's goal.
- ☐ I have clarified the project’s outputs and agreed on:
    - ☐ publication format
    - ☐ licence
    - ☐ attribution
    - ☐ storage.
- ☐ We have agreed on distributing responsibilities.
- ☐ I have added details on mutual agreement between me and GLAMs and data reuse declarations in my Data Management Plan.

9.1.4. Produce open content

These are the steps towards producing open content.

- ☐ I have checked legal and ethical conditions for sharing, and have an agreement with all people and institutions involved.
- ☐ I have selected which resources are to be shared, checked sensitive information, applied data protective measures where needed, and indicated if some content cannot be openly shared in the documentation, explaining why and specifying conditions and ways to access it.

- ☐ I have described my resources in rich metadata and/or README files, including file structure, provenance information, contributors, circumstances of collection, limitations, licence and 'cite as' information.
- ☐ I have documented the software environment in which I've carried out the enrichment/analysis process.
- ☐ I have made my content available in open formats.
- ☐ I have made all metadata openly available.
- ☐ I have added the open licence to all content (except where differently noted).
- ☐ I have cited all sources and added attributions to all content.
- ☐ I have a data repository for my research outputs.
- ☐ I have added how I want my content to be cited/attributed.
- ☐ I have extracted open content and uploaded it to open repositories.
- ☐ I have selected an open-access publishing venue.
- ☐ I have interlinked my research outputs.

9.1.5. Select a repository

When selecting a repository for research data and output, think about the following aspects.

- ☐ The repository is owned and sustainably governed by a non-profit body.
- ☐ The repository has a robust PID and versioning policy implemented.
- ☐ The repository has an Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) endpoint or other mechanisms enabling discovery services to harvest their content.
- ☐ The repository has CoreTrustSeal certification.
- ☐ The repository allows the interlinking of different outputs belonging to the same project (through related PIDs or through other semantic web technologies). (This is a plus).
- ☐ I have a budget for the long-term preservation of my data to meet the repository's expenses, if any.

9.1.6. Select a publisher

Here is a list of key details you should watch out for when selecting a publisher.

- ☐ The publisher's website clearly indicates:
    - ☐ aims and scope of the journal;
    - ☐ editorial board, including institutional affiliations of all members;
    - ☐ licensing terms;
    - ☐ instructions for authors;
    - ☐ copyright terms for authors*;
    - ☐ author charges (state if the journal does not have any charges or include all fees that may be charged to the author)*
    - ☐ open access policy*;

    - ☐ peer review policy or another quality assurance mechanism*;
    - ☐ repository policy*;
    - ☐ contact details.
- ☐ The publisher's policy is compliant* with my funders' and institutional requirements: and in particular:
    - ☐ the publisher grants me the right to reuse a digital copy (possibly the final publication, i.e., the version of record);
    - ☐ the digital copy can be archived in an open repository and/or in my institutional repository;
    - ☐ I am allowed to retain the authors' copyrights;
    - ☐ I have agreed with the publisher on the licences of the printed publication and of the digital edition;
        - ☐ I can archive a digital version under a CC BY licence;
    - ☐ if I have to pay the processing charges, the fee is reasonable;
    - ☐ the publisher does not require an embargo period for the publication°.
- ☐ The publisher provides a PID for my output.
- ☐ The publisher provides rich metadata for my publication in which it is possible to refer to associated data and resources (this is a plus).
- ☐ The journal has a valid ISSN, registered and confirmed at the ISSN Portal, or: the book publisher has a valid ISBN, registered at the global ISBN portal (updated annually).

* This might not apply to small entities, like specialised publishers, non-profit organisations, or local authorities. In this case, negotiate with the publisher. Exceptions can be negotiated with your institution and funder as well, but they might be taken into consideration only if you have a strong legitimate reason not to comply with their policies.
° This might not apply for long-form publications; your funder and institutional policy may allow a 6- or 12-month embargo period.

9.1.7. Publishing innovations

This is a checklist for a peer-reviewed online multimedia publication stored on an institutional website and a repository of choice (compliant with Green open access), ideally produced in collaboration with a publisher.

- ☐ I have explored solutions with my data steward or librarian.
- ☐ I have checked the possibility of producing my innovative publication in collaboration with a publisher (for the peer review, the design and the editorial expertise).
- ☐ I have signed an agreement with the publisher that allows me to store my research on a public institutional repository (e.g. your own institutional website).
- ☐ All content produced by me has an open licence (CC0 for factual and numerical data, CC BY or CC BY-SA for content produced with citizens).
- ☐ Content that legitimately needs a different licence and restrictions is properly marked.
- ☐ I am allowed to use my multimedia content in ways other than with an eBook only (a website, which allows videos, links, audio and embedding of other websites).
- ☐ Access to all multimedia content is compliant with requests of third-party copyright owners.
- ☐ I have the possibility to aggregate content from different sources (as links or uploads) and agree with copyright owners on terms.
- ☐ I have the possibility to export selected content (only the open content!) and upload

it to open repositories.

- ☐ my innovative publication allows the separation of open content from content under copyright or other licences and allows the export of open content to open repositories.

- ☐ I have indicated my ORCID ID and assigned DOIs, including my multimedia content.

- ☐ I have stated how my innovative publication should be cited.

- ☐ My published research outputs, including my innovative publication, are interlinked.

- ☐ I can back up my innovative publication on a public archiving system for long-term preservation (e.g. my website to the Internet Archive) and a Git repository.

- ☐ I have identified a way to peer review my innovative publication.

9.1.8. How to turn your journal open access

The following checklist is loosely based on the requirements of DOAJ:

- ☐ Website - the journal website includes:
  - ☐ OA policy
  - ☐ licensing terms
  - ☐ copyright terms: information regarding whether the author retains the copyright is visible on the website
  - ☐ journal ISSN
  - ☐ peer review policy
  - ☐ editorial board (including institutional affiliations of all members)
  - ☐ aims and scope of the journal
  - ☐ instructions for authors
  - ☐ repository policy
  - ☐ author charges (state if the journal does not have any charges or include all fees that may be charged to the author)
  - ☐ contact details.

- ☐ Journal - the journal has:
  - ☐ a valid ISSN, fully registered and confirmed at the ISSN Portal.

- ☐ Article - each article displays information regarding:
  - ☐ DOI
  - ☐ licensing terms
  - ☐ how to cite
  - ☐ author's ORCID ID in the metadata.

9.2. Templates

In this section, you can find a template of a consent form addressing privacy and copyright clearance of both third-party material and jointly created content.

Additionally, templates developed by other institutions and mentioned elsewhere in the guidelines are also gathered here. Adapt them based on your needs.

9.2.1 Consent form for a material subjected to copyright protection and for the collection and use of personal data

Foreword

The purpose of this consent form

The following consent form is a practical tool to help you open your research and its data.

Its goal is to allow you to publish your output in open access with a compliant Creative Commons licence, either CC BY 4.0 or CC BY-SA 4.0, and open tool CC0.

The consent form covers two subject matters:
- privacy and data protection
- copyright clearance of third-party material and jointly created content

The consent form can be adapted and customised according to the specific needs of your research project.

The consent form directly addresses the participant, who is the person who provides you with their personal and sensitive data and the copyright holder. It is written in the "I" form to clarify what the participant is consenting to.

The consent form consists of 5 sections:
1. Open access:
- this section introduces the concept of open access and advocates for it
- it indicates and explains the CC licence used to release the research output
- you can also use this section independently from the consent form and, for example, add it to your email to a publisher or your co-authors

2. Introduction:
- this section illustrates the research project: it explains the goals of the projects, lists the outputs and deliverables, indicates funding bodies and eventual partners
- it identifies the roles and responsibilities of the stakeholders

3. Authorisation to collect, analyse, store and share personal data:
- This section identifies the personal and sensitive data you intend to collect
- it grants you permission to collect, analyse, store and share personal and sensitive data within the scope of your research project
- it provides the contact details of the Data Processor and/or Data Controller. The Data Processor is the person who collects, uses and stores the data, and who works according to the instructions and supervision of the Data Controller. At times, the two roles converge in one person

4. Use of Material Possibly Subject to Copyright Protection:
- this section is a request for copyright clearance
- it grants you permission to publish third-party material and jointly-created material

5. Conclusion and signature

How to use the consent form

Customise the form:

- depending on your needs, you can decide to use both sections 3 and 4 or only one of the two
- section 1 can also be used independently for purposes other than the consent form

Fill in the missing information:

- [The highlighted text] indicates instructions for you; delete it once you have adjusted the form to your purpose and before sharing it
- the bullet points indicate the parts that can be selected depending on your needs; pick the relevant option/s and delete the text that does not apply to your specific case

Provide context:

- When using the form, you are encouraged to provide further information about its goal and the open-access agenda verbally or in writing

Consent form

▸ Section 1: Open access

Open science is committed to making research results immediately available to all, for free and worldwide, fostering knowledge creation and sharing its benefits. Open access refers specifically to the right to access, copy, modify and reuse research outputs free of charge as soon as they have been published. It is a right that extends to all, the scientific community and the wider public. Making all research results as open and accessible as possible increases their impact, encourages collaboration and stimulates public engagement.

In Switzerland, open access is mandatory for all researchers whose work has been publicly funded. Accordingly, research results developed within the scope of the Research Project are released under the licence [pick one of the following options]

- ☐ Creative Commons Attribution 4.0, CC BY 4.0. This licence requires anyone to credit the creator and allows them to distribute, remix, adapt and build upon the material in any medium or format, including for commercial purposes.
- ☐ Creative Commons Attribution-ShareAlike 4.0, CC BY-SA 4.0. This licence requires anyone to credit the creator and allows them to distribute, remix, adapt and build upon the material in any medium or format, including for commercial purposes, provided they licence the modified material under identical terms.
- ☐ Creative Commons Zero 4.0, CC0. This licence allows anyone to distribute, remix, adapt and build upon the material in any medium or format, including for commercial purposes. Crediting the author is not mandatory but is good practice.

▸ Section 2: Introduction

This form defines how [adjust as needed by choosing one or both of the following options]

- ☐ my personal data

[and]

- ☐ the content I contribute that is possibly copyright-protected

can be used within the following open science Research Project: [add the title of your Research Project]

[briefly describe the Research Project: goals, output, funding body]

Roles and responsibilities
All personal data are collected, used and stored by [add the name of Data Processor]

- ☐ according to the instructions given by [add a name if the person collecting the data (Data Processor) is not equal to the one giving instructions (Data Controller), otherwise cut this line].

The Research Project is carried out by [add the name of the institutions involved].
This consent form is issued by [add the name of the Research Project Manager and University Institute].

▸ Section 3: Authorisation to collect, analyse, store and share Personal Data

I authorise [add the name of Data Processor] to collect the following personal data: [specify exactly which personal data are necessary for your project].

I provided the data during the Research Project. The data is stored and used exclusively for purposes strictly related and limited to this Research Project.

The research results developed within the scope of the Research Project may include personal data, including sensitive data. The following options require consent to collect, use, publish and distribute such results to a broad audience and unlimited time through the Creative Commons licence [choose between the following options, coherent with what you indicated in section 1.]

- ☐ Creative Commons Attribution 4.0, CC BY 4.0
- ☐ Creative Commons Attribution-ShareAlike 4.0, CC BY-SA 4.0
- ☐ Creative Commons Zero 4.0, CC0

- ☐ I consent to the collection, storage and use of my contact data [list in brackets what you need to collect, e.g. name and surname, email, phone number, ...] for the purpose of this Research Project. At the end of the Research project, my contact data will be deleted unless I request otherwise.
- ☐ I consent to the collection, use, storage, publication and distribution of my personal data, including sensitive data [specify what content you will be collecting, for instance, video recording, audio recording]

I want my data to be attributed as follows (e.g. my name); blank means I do not want my content to be attributed to me: .....

The consent options listed above relate exclusively to the Research Project's results and respect the scope and limitations indicated in this form. My contact data will be deleted as soon as the project ends.

For further information on the processing of my personal data, I am aware that I have the right to contact [add the name of the Data Processor or the Data Controller] at the following email address: [add email address]

Revocation of the consent to process personal data

I may revoke this release form by written notification to [add the name of the Data Processor or the Data Controller] [select one of the two options]

- ☐ at any time
- ☐ by [add date].

I understand that revoking this Release Form may have repercussions on the conduct of the Research Project.

▸ Section 4: Use of Material Possibly Subject to Copyright Protection

I hereby grant to [add the name of the university institute in charge or of the Research Project Manager] and to those entitled under them the right to use, modify and elaborate and to sublicense the following material provided by me and/or jointly created within the context of the Research Project, without any economic compensation:

[list the third-party content and/or the jointly created materials you request permission to use and publish].

- ☐ I agree to share and publish such material within the framework of the Research Project itself with the Creative Commons licence [choose between the following options, coherent with what you indicated in section 1]
  - ☐ Creative Commons Attribution 4.0, CC BY 4.0
  - ☐ Creative Commons Attribution-ShareAlike 4.0, CC BY-SA 4.0
  - ☐ CC0
- ☐ I acknowledge that I cannot withdraw this agreement.

▸ Section 5: Conclusion

The university institute and those entitled under it commit to [adjust as needed by choosing one or both of the following options]

- ☐ processing all personal data

[and]

- ☐ using the content I contribute

in accordance with the terms defined by this release form, paying particular attention to not harming me as a participant.

By signing this Release Form, I confirm my acceptance of the terms set and understand that this Release Form constitutes a complete agreement between me and the institution and/or the Research Project Manager in question regarding [adjust as needed by choosing one or both of the following options]

- ☐ the processing of all personal data

[and]

- ☐ the use of the content I contribute

in the context of the Research Project.

Research Project Manager
First and Last Name: .....
Name of the Institution .....
Email Address: .....

I, the Participant
First and Last Name: .....
Email Address: .....

Place and date: .....
Signature of the Research Project Manager:

.....

Place and date: .....
My signature:

.....

Note: Please keep a copy of this Release Form!

9.2.2 Compile your metadata and Readme file

- DataCite Metadata Schema
- Dublin Core; a Batch Metadata Template based on it, and a Dublin Core Metadata Generator
- Readme file template by Cornell Data Services

9.2.3 Data Management Plan

- The SNSF Data Management Plan provided by the Kathryn and Shelby Cullom Davis Library, Geneva Graduate Institute which also includes examples
- Horizon Europe Data Management Plan Template

9.2.4 Assign a Creative Commons licence

- Creative Commons-license chooser: fill out the template, get the chosen licence fully compiled

9.2.5 Collaborate with GLAMs

- Reuse agreement template between Cultural Heritage Institutions and researchers

9.2.6 Negotiate for open access with journals and publishers

- Pre-submission letter by CoalitionS
- Submission of cover letter template
- User guide about when, how and why to use these templates
- Change the publisher's agreement with the Termination of Transfer tool or the SPARC Author Addendum

About & credits

About the research project

The research project "Open Science in Arts, Design and Music" was supported by swissuniversities in the frame of the programme P-5 "Open Science | Phase A" submitted by 31.05.2021, primary action line "Alternative forms of publications".

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Sources

The content of the guidelines is based on:
- a series of case studies provided by partner institutions which document challenges in implementing open science in the fields of arts, design, and music;
- webinars and conversations which have been designed both as training opportunities as well as content source;
- extensive internet search.

The case studies, all project related activities and the full list of online sources with last access dates are available on the project's websites.

Licence and recommended citation

Websites

https://meta.wikimedia.org/wiki/OS-ADM
OSF Open Science Framework https://osf.io/fxuej
Zenodo community https://zenodo.org/communities/os-adm

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