

Open Documentation Hackathon June 2024

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low tech +
sustainability

LEARNING IN LOW-TECH TO PROMOTE SUSTAINABILITY



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Why document?

- **For you** to keep track of your work
 - **For others to reproduce** – understand - appropriate what you have produced
 - **For others to contribute**, give feedbacks and improve your documentation and your work.
- Your documentation is destined to be useful for you & others.



How to document openly?

Opening in practice and legally

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Opening in practice and legally

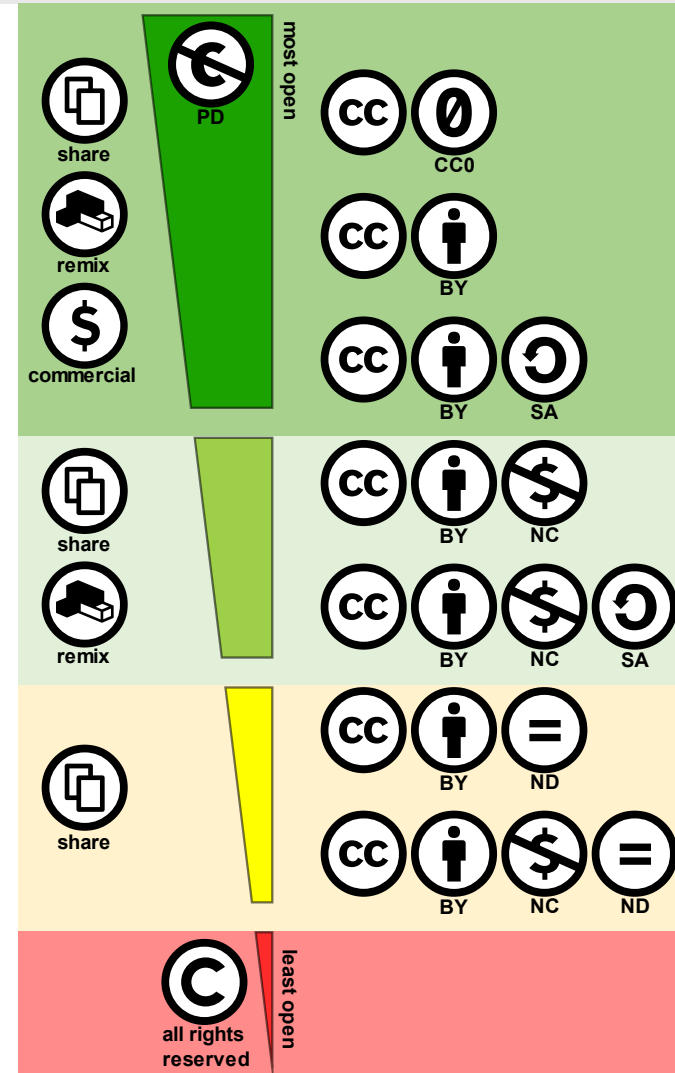
Online knowledge cannot be used as such, as it is protected by the copyright. Need for open licences:

- **Licences** enable authors to establish the conditions under which its work may be consulted, re-used and modified.
 - *Where a right is not granted by default by the licensor via the licence, it may be requested.*
 - *A licence may apply to any type of content (e.g. sound, text, images, multimedia, software).*

How to document openly?

Opening in practice and legally

- Open licences can vary from very open to very restrictive.
 - [Creative Commons](#)



[Choose a licence](#)

How to document openly?

How do I apply an open licence? You don't need to take any administrative action, just follow the steps below:

1. I choose my licence according to my needs.
2. I make sure that I have the right to use and distribute all the content of my presentation (images, etc.): if no licence is mentioned, the content is by default subject to copyright and I do not have the right to use it --> ask for an explicit agreement.
3. I indicate the chosen licence clearly and visibly, preferably in a machine-readable format. In a separate LICENCE file, for example on a file repository, but also
 - On the first page of my resource: I insert the logo of this licence
 - On the last page of my resource:
 - I insert the logo of this licence
 - I put the mention: "Except where otherwise stated, this resource and its contents (text and illustrations) are licensed under the *full name of the licence and abbreviation, for example "Attribution - Share Alike 4.0 International (CC BY-SA 4.0)"*. Please quote as: "*Title - Author(s) - Institution(s) – Date - Licence abbreviation*".
 - I insert a hypertext link to the full text of the licence.

How to document openly?

Scope-related documentation: not all the elements are mandatory!

Document depending on...

Target audience

- developers & contributors
- users
- makers
- educators
- ...

The purpose of engaging

- record
- reuse
- contributions
- ...

You can document as...

- A recipe / manual



- A technical report



- An experiment notebook



- A user guide



- A scientific article



- A journal article



- A story about the hardware



- An interview



- ...

How to document openly?

Open hardware metadata - *Process*-related documentation contents:

To study & modify

STUDYING

- Context & users
- Design rationale
- Data
- Educational resources
- Scientific publications
- Funding note

- Contact points
- Communication channels
- List of contributors
- Relation to other projects
- Standard compliance

MODIFYING

- Licensing terms
- Contribution guidelines
- Versioning history
- Development stage
- Required skills

How to document openly?

Open hardware metadata - *Product*-related documentation contents:
To make, distribute, use & repair/dispose

M
A
K
E

- Index of documentation
- BOM
- Architecture
- Assembly instructions
- Design files
- Modelling/production tools

- Testing instructions
- Health & safety notice
- Software & firmware (operation)
- Operation instructions
- Maintenance instructions
- Disposal instructions

DISTRIBUTE

USE

DISPOSE

Where to find open documentations?

- <https://wiki.lowtechlab.org/wiki/Accueil>: Low-Tech Lab association wiki
- <https://en.oho.wiki/wiki/Home> : Open Hardware Observatory (OHO)
- [https://www.appropedia.org/Welcome to Appropedia](https://www.appropedia.org/Welcome_to_Appropedia): wiki for Appropriate technologies
- <https://wikifab.org/wiki/Accueil#>: wikifab
- <https://www.thingiverse.com/>: Thingiverse
- <https://www.wikihouse.cc/>: wikihouse
- <https://openstructures.net/> : OpenStructures is an exploration on open modular construction where anyone designs for everyone on the basis of one shared grid.
- <https://www.instructables.com/>: Instructables
- <https://www.opensourceecology.org/>: Open Source Ecology
- <https://www.openhardware.io/>: open hardware

Activity: how will your projects be used?

Who is the target audience for your documentation?

- **Generate 2 – 3 Personas**
Personas should be unlike,
non-existing & representative



6 minutes, per project groups



Name
Age
Activity
Interest
Needs,
expectations

Activity: how will your projects be used?

Describe the use of your production in the form of short stories or drawings:

- Use your personas. Do they interact?
- Highlight the prospects for socio-ecological change (justice, sustainability, etc.), lifestyles

They should be desirable and inspiring: no dystopia

Every person in the group says a sentence.
As much as possible, everything that is said is true.
Take minutes to tell it to others!



10 minutes,
per project groups

Activity: how will your projects be used?

→ What forms of documentation and sharing seem appropriate to these people?

→ What content and contextual data would these people like to have access to?

30 minutes,
per project groups



After 20 minutes, a student from another group embodies one of his/her personas, and go to another group.

They discuss together:

- *the group presenting its documentation ideas,*
- *the personas sharing its interest in the project and telling if it is understandable*

Metadata related to open hardware

Checklist 1 of 2

CHECKLIST	#	Information item	Description	Check?
Process documentation (STUDY, MODIFY)	1	Context & users	For whom, in which context and under which conditions	
	2	Licensing terms*	Name of the license and link to its complete text, if possible with SPDX identifier, for every content (design files, documentation, software)	
	3	Development stage	Description of achieved, current and future development stage (for instance with technical readiness)	
	4	Versioning history	Versioning history of the project	
	5	Design rationale	What it actually does, what problem it solves	
	6	Contact points*	Contact (email address) and details (name, organisation)	
	7	Communication channels	Social medias and / or forum, chat	
	8	Contribution guidelines	Explicit indication on how to contribute to the project	
	9	List of contributors	List of persons contributing to the development	
	10	Relation to other OSH items*	Redesigns or use of existing parts from other OSH projects	
	11	List of required skills*	List of skills required either to study, modify, make or use the hardware (can be related to safety, but also to understanding)	
	12	Data	IOT & open data repositories	
	13	Educational resources	Open educational resources available	
	14	Scientific publications	List and links to publications related to the hardware	
	15	Requirements / standard compliance*	Set of requirements including for compliance with any standard	
	16	Funding note	Funding information about the project	

Metadata related to open hardware

Checklist 2 of 2

CHECKLIST	#	Information item	Description	Check?
Product documentation (MAKE, DISTRIBUTE, USE and DISPOSE)	1	Index of product documentation	Single page / document presenting the whole documentation architecture	
	2	BOM	A list or spreadsheet describing part numbers, putative suppliers, costs, and a short description	
	3	Architecture	Defines the overall structure, modules & interfaces	
	4	Assembly instructions	Instructions for going from your design files to the working physical hardware, including manufacturing process	
	5	Design files	CAD files available and viewable with no need for proprietary software	
	6	Modelling tool list	A list of required tools and associated settings for software used for development	
	7	Production tool list	A list of required tools and associated settings for physical (e.g. machine) tools for production.	
	8	Software & firmware for operation	List of any code or firmware required to operate your hardware	
	9	Health and safety notice, risk assessment	A summary of the most important risks and hazards associated with making, using, maintaining or disposing	
	10	Testing instructions and report	Instructions for testing and/or quality management.	
	11	Operation instructions	Indications on how to use the hardware	
	12	Maintenance	Indications on how to maintain the hardware	
	13	Disposal instructions	Indications on where or how the hardware can be repaired, and indicate how to dispose or recycle the hardware if it is beyond repair.	

Acknowledgements

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- It also includes lessons from TU Berlin lesson on open hardware developed by Robert Mies, Sacha Hodencq & Julieta Arancio in 2023.
- It uses CC0 resources from the [Open Science Training Handbook](#) of the european project FOSTER.

Except where otherwise noted, this work and its contents
(texts and illustrations) are licensed under the
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