# GOVERNANCE OF OPEN RESEARCH SOFTWARE PROJECTS
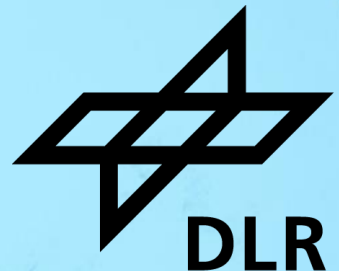
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DLR

# Governance for open research software projects

- What is governance?

- When and why may research software projects need governance?

- Ingredients for designing and implementing governance

- Governance implementation (example)

- Lessons learned

# Example project:
# The Citation File Format

- Format for `CITATION.cff` files that contain citation metadata for software

- **Subprojects** for developing the schema, documentation and tooling

- From community-based solo project

  to being supported by *GitHub* (20,000+ files), *Zenodo*, *Zotero* and others

- Originally "co-led" by me and one other contributor

- **citation-file-format.github.io**
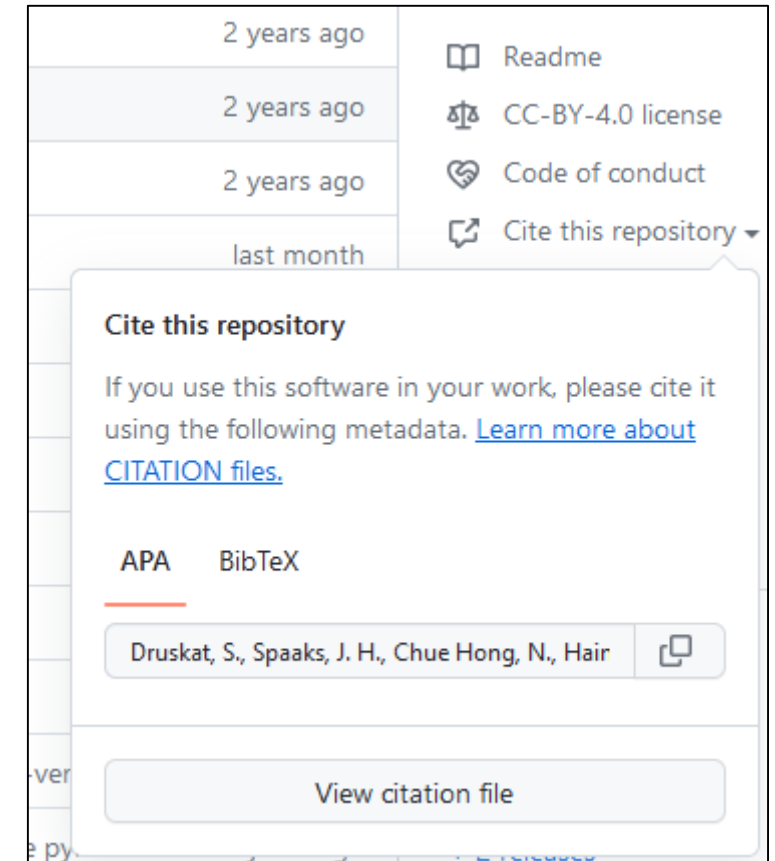
# What is governance?

"**Governance** is the <u>process</u> of making and enforcing <u>decisions</u> within an organization or society."

Source: Wikipedia contributors, "Governance — Wikipedia, the free encyclopedia." 2023.
<u>https://en.wikipedia.org/w/index.php?title=Governance&oldid=1164294730</u>

☞ *Rules, norms, power, communication* ☜

# Rules, norms, power, communication:
# When/why research software projects need governance

- **When:**
  - >1 individuals interact with the project
- **Why:**
  - Control over the mission, aims and scope
  - Clear responsibilities
  - Transparency and openness, managing expectations
  - Accessibility, community building, sustainability
  - …

# Risks of not having governance

- Lack of structure leads to informal power dynamics

- Illusion of equality

- Need for accountable organization

Cf. Jo Freeman, "The Tyranny of Structurelessness,"
jofreeman.com/joreen/tyranny.htm

Photo: Markus Spiske on Unsplash

# GOVERNANCE DESIGN

# How to design and implement governance?

1. Project **aims**

2. Project **scope**

3. Project **vision** / **mission**

4. Project **principles** and requirements

Code for Science & Society

Digital Infrastructure Incubator

www.codeforsociety.org/incubator/resources

# How to design and implement governance?
## Aims and scope as the baseline

### What are the **aims** of the project?

*The Citation File Format makes it easier for research software engineers and researchers to make their software citable, and for their users to cite it.*

### What is the **scope** of the project?

*The Citation File Format specifically focuses on **citation** metadata for **software**. It will adapt to a better understanding of relevant metadata for software citation, but does not aim to expand this scope.*

# How to design and implement governance?
## The mission or vision

**Who** are you working **with**, or hope to work with?

**What** are you doing?

**Who** are you doing it **for**?

**Why** are you doing it, what is the impact or change that you hope to make?

I'm working with [community, contributors] to [build something] so that [users, community members] can [do something different, achieve a goal].

Based on: Mozilla Foundation and contributors, "Mozilla Open Leadership Training Series". 2023. https://mozilla.github.io/open-leadership-training-series/articles/introduction-to-open-leadership/stating-your-project-vision

# How to design and implement governance?
# The mission or vision: Example

We're working with software citation enthusiasts, research software engineers and researchers to create a software citation metadata format and respective tooling, so that researchers and research software engineers can make software citable and cite it more easily.

# How to design and implement governance?
# The mission or vision: Governance roles

We're working with software citation enthusiasts, research software engineers and researchers to create a software citation metadata format and respective tooling, so that researchers and research software engineers can make software citable and cite it more easily.

# How to design and implement governance?
# Underlying principles and requirements

- Legal requirements (additional roles, decision processes)

- Political, social, ethical principles

- Political, social, ethical issues or problems

**Citation File Format**

- *Project of projects*

- *Control vs. autonomy and inclusivity*

- *Responsibility*

# Breakpoint:
# Ingredients for designing governance

**We now have**

1. A **baseline**

   - Project aims

   - Project scope

2. Governance **roles**

   - via mission statement

3. Governance **requirements**

   - based on principles and upstream requirements

**We want**

- A recipe or templates to get started

Photo: Dose Juice on Unsplash

# GOVERNANCE IMPLEMENTATION

Druskat: Governance; Second Accelerator Middle Layer Workshop, Helmholtz Zentrum Berlin, 2025-02-13

# How to design and implement governance? Governance models

- [communityrule.info](communityrule.info)

- Code for Science & Society Digital Infrastructure Incubator [Governance Bibliography](Governance Bibliography)

- Talk to other projects

- Adopt & adapt, mix & match



**CommunityRule** is a governance toolkit for great communities.
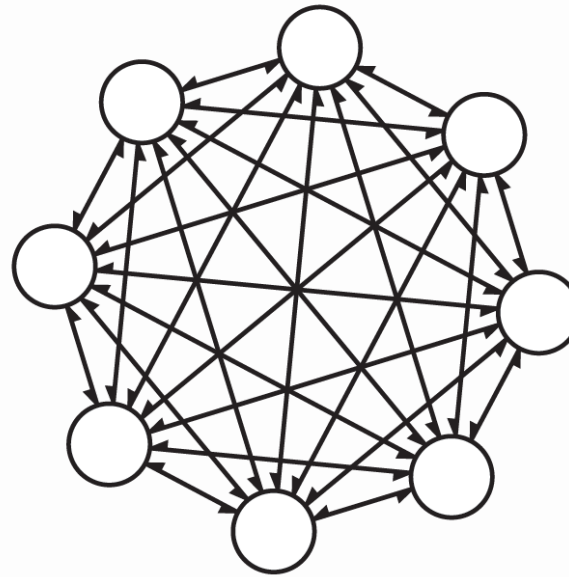
How does your community work?
Are you ready to make hard decisions?

From: Cassandra Dana, Drew Hornbein, Vincent Russell, Nathan Schneider: "Community Rules". 2021. https://communityrule.info. CC BY-SA Intl. 4.0



**Benevolent Dictator**
The Benevolent Dictator holds ultimate decision-making power, until the group is ready for a more inclusive structure.
Values | Membership | Autocracy | Delegation | Expiration | Executive | Lobbying

**Circles**
Units called Circles have the ability to decide and act on matters in their domains, which their members agree on through a Council.
Values | Membership | Council | Delegation | Lazy consensus

**Consensus**
Decisions that affect the group collectively should involve participation of all participants.
Values | Membership | Exclusion | Consensus | Deliberation | Do-Ocracy

**Do-ocracy**
Those who take initiative to do something in the group can decide how they do it.
Values | Membership | Autonomy | Do-ocracy | Lobbying

**Elected Board**
An elected board determines policies and organizes their implementation.
Values | Membership | Board | Representation | Majority Voting

**Jury**
Proposals are shaped and decided on by randomly selected juries.
Values | Membership | Legislature | Sortition | Petition | Policy Register

**Petition**
All participants can propose and vote on proposals for the group.
Values | Membership | Petition

**Self-Appointed Board**
A board that selects its own members determines policies and organizes their implementation.
Values | Membership | Board | Majority Voting

# Lessons learned & conclusion

- Formalizing governance is useful for projects of different sizes to
  - Increase transparency and openness
  - Manage expectations and responsibilities
  - Assert control over the project
  - Get to know the project better
  - React to changes & adapt

- No one-size-fits-all
  - Adaption can be hard work
  - Danger of developing against a worst case scenario

- Ask a friend
  - More experience in other spheres (e.g., open source)
  - Work with those who support the project

# Thanks!

Citation File Format:

- [citation-file-format.github.io](citation-file-format.github.io)

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# Governance implementation: Citation File Format

- **Roles**
  - Steering committee, subproject maintainers, contributors, users

- **Mixed model**
  - Steering committee for the project as a whole
  - Maximum autonomy for the maintainers of the subprojects

- **Steering committee**
  - Software citation experts + elected community representative(s)
    - Supportive of CFF, strategic development, outreach, consultancy, governance development, community building, Code of Conduct committee, final decider
    - Decides on adding and removing subprojects
    - Maintains the schema and website subprojects

- **Decision-making process**
  - To be decided: no simple formalization of lazy consensus, but lightweight

# Governance implementation: Documentation

- **Process:**
  - [Template](#)-based draft with extensive adaptions, continuous risk assessment
  - Preliminary adoption of existing Code of Conduct
  - Candidates for Steering Committee (SC) invited
  - Communication with subprojects
  - Inaugural SC to make decisions on details & decision processes, organize election

- **Planned outcomes:**
  - Refactoring of website to include governance documentation
    - Aims, scope, mission
    - Governance document
    - Code of Conduct
    - Contacts
  - New blog for outreach and better transparency
  - SC meetings, community meetings
  - Potentially new infrastructures for internal and external communication