



# THE SCICODES CONSORTIUM

coordinating research software registries and repositories

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## SOFTWARE REGISTRIES AND REPOSITORIES

Scientific disciplines using or developing computational methods often rely on dedicated code registries or repositories, functioning as virtual libraries housing software and metadata pertinent to the field.

These resources play a pivotal role in enhancing research by enhancing the discoverability of software, thereby supporting transparency, reproducibility, and fostering efficiency through software reuse. Additionally, these resources actively advocate for the formal citation of software in research articles, following the best practices proposed by the scientific community.

## THE SCICODES CONSORTIUM

The SciCodes Consortium is for editors and maintainers of academic discipline and institutional software registries and repositories. The Consortium enables its members to:

- share work methods, marketing ideas, and communication practices;
- demonstrate unique aspects of our respective services, discuss challenges and share solutions to common issues that arise in managing our resources;
- work cooperatively to speed adoption of the CodeMeta and CFF standards and better enable software citation, recognition, and dissemination;
- work towards a standardized protocol for interoperable, distributed search across any compliant software registry or repository.

## REFERENCES

1 Monteil, Alain, et al. "Nine best practices for research software registries and repositories: a concise guide." *arXiv preprint arXiv:2012.13117* (2020).

2 Garijo, Daniel, et al. "Nine best practices for research software registries and repositories." *PeerJ Computer Science* 8 (2022): e1023.

## BEST PRACTICES FOR REPOSITORIES AND REGISTRIES<sup>1,2</sup>

- Provide a public scope statement
- Provide guidance for users
- Provide guidance to software contributors
- Establish an authorship policy
- Share your metadata schema
- Stipulate conditions of use
- State a privacy policy
- Provide a retention policy
- Disclose your end-of-life policy

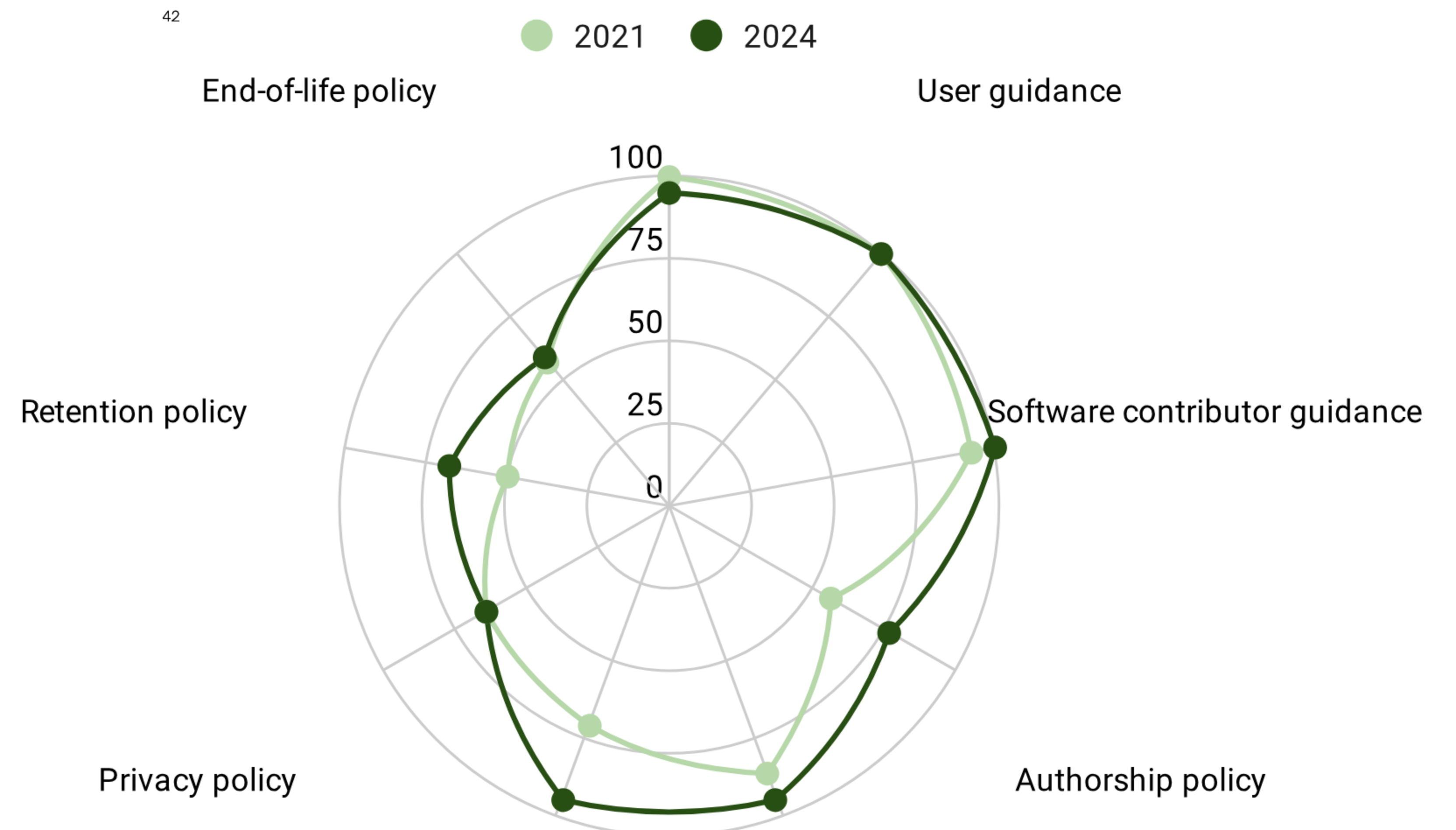
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2   "context": "https://doi.org/10.5063/schema/codemeta-2.0",
3   "type": "SoftwareSourceCode",
4   "license": "https://spdx.org/licenses/GPL-3.0*",
5   "codeRepository": "git+https://github.com/gen-pasteur/macsfinder.git",
6   "contentIntegration": "https://github.com/gen-pasteur/macsfinder/actions",
7   "dateCreated": "2013-11-04",
8   "datePublished": "2014-10-17",
9   "dateModified": "2023-12-18",
10  "downloadUrl": "https://pypi.org/project/MacSyFinder/",
11  "issueTracker": "https://github.com/gen-pasteur/macsfinder/issues",
12  "name": "MacSyFinder",
13  "version": "2.1.3",
14  "description": "Detection of macromolecular systems in bacterial protein datasets using systems modelling and similarity search.",
15  "applicationCategory": "Biology",
16  "developmentStatus": "active",
17  "referencePublication": "https://doi.org/10.24072/pcjournal.250",
18  "funder": {
19    "type": "Organization",
20    "name": "Institut Pasteur Paris"
21  },
22  "keywords": [
23    "bioinformatics",
24    "functional genomics",
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27  "programmingLanguage": [
28    "python"
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31    "Linux",
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34  ],
35  "softwareRequirements": [
36    "python >= 3.7",
37    "homer >= 3.1"
38  ],
39  "relatedLink": [
40    "https://pypi.org/project/MacSyFinder/",
41    "https://hub.docker.com/r/genpasteur/macsfinder"
42  ],
43  "author": [
44    {
45      "type": "Person",
46      "id": "https://orcid.org/0000-0002-0220-0482",
47      "givenName": "Bertrand",
48      "familyName": "Meron",
49      "email": "bmeron@pasteur.fr",
50      "affiliation": {
51        "type": "Organization",
52        "name": "Institut Pasteur, Université Paris Cité, Bioinformatics and Biostatistics HUB, Paris, France"
53      }
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55  ],
56  "contributor": [
57    {
58      "type": "Person",
59      "id": "https://github.com/fjossandon",
60      "givenName": "Francisco J.",
61      "familyName": "Jossandon",
62      "email": "fco.j.jossandon@gmail.com",
63      "affiliation": {
64        "type": "Organization",
65        "name": "Blome Makers Inc."
66      }
67    }
68  ]
69 }

```

An summarized example of a CodeMeta file describing the research software MacSyFinder.

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## ASSESSMENT; HAVE WE IMPROVED?

2021: SciCodes members assessed their resources' compliance with the best practices for registries and repositories

Scale is from 0 (best practice not implemented in any form) to 4 (best practice implemented and meets all recommended guidance)

14 resources participated in the assessment

2023/2024: SciCodes members repeated the assessment using the same scale

24 resources participated in the re-assessment

## SCORING METHOD

Implementation of each practice is given a score from 0-4.

Best practice scores are totaled for each resource.

Resource totals are added together to determine a grand total.

Grand total is divided by number of resources assessed to determine the collective average.



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