

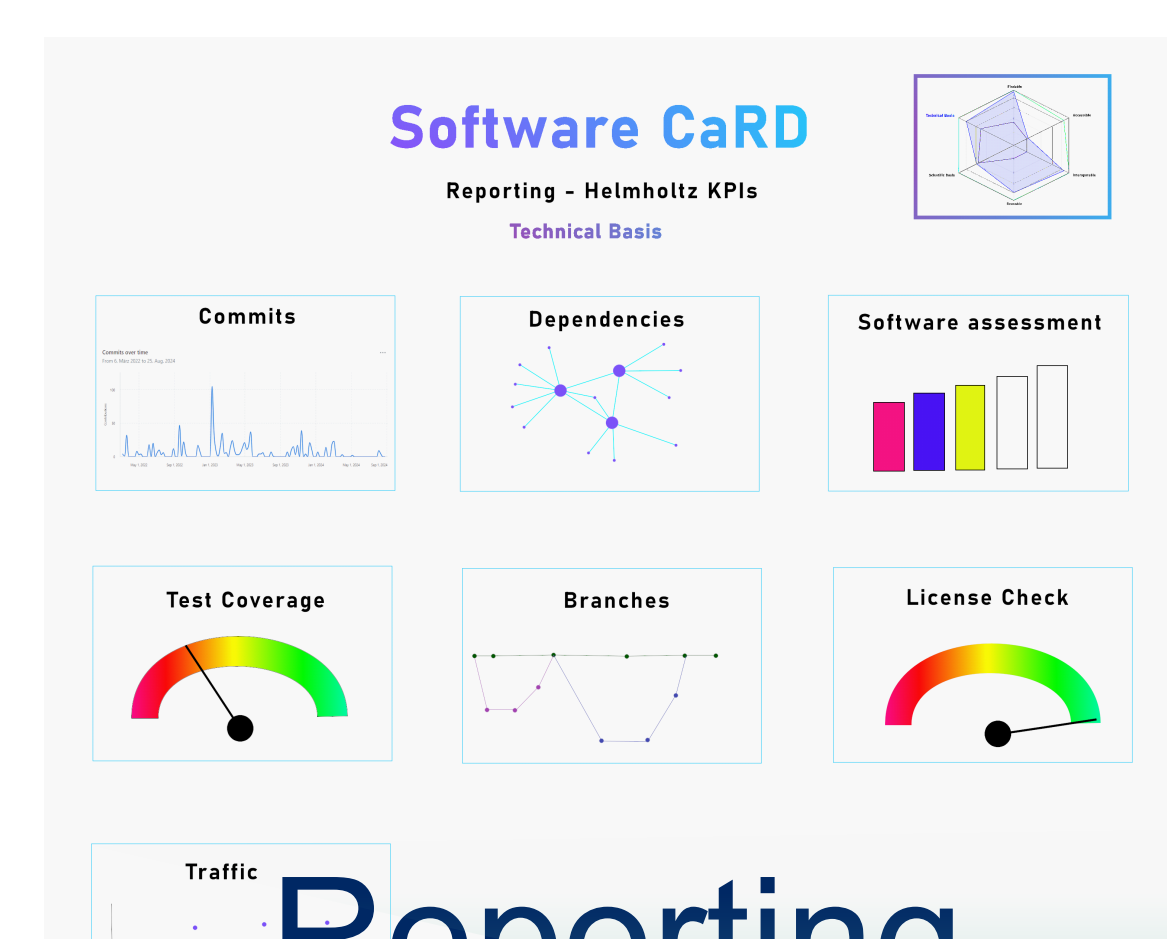
Software Curation and Reporting Dashboard (Software CaRD)

Michael Meinel¹ // Oliver Bertuch² // Sophie Kernchen¹ // Christian Meeßen³ // David Pape⁴

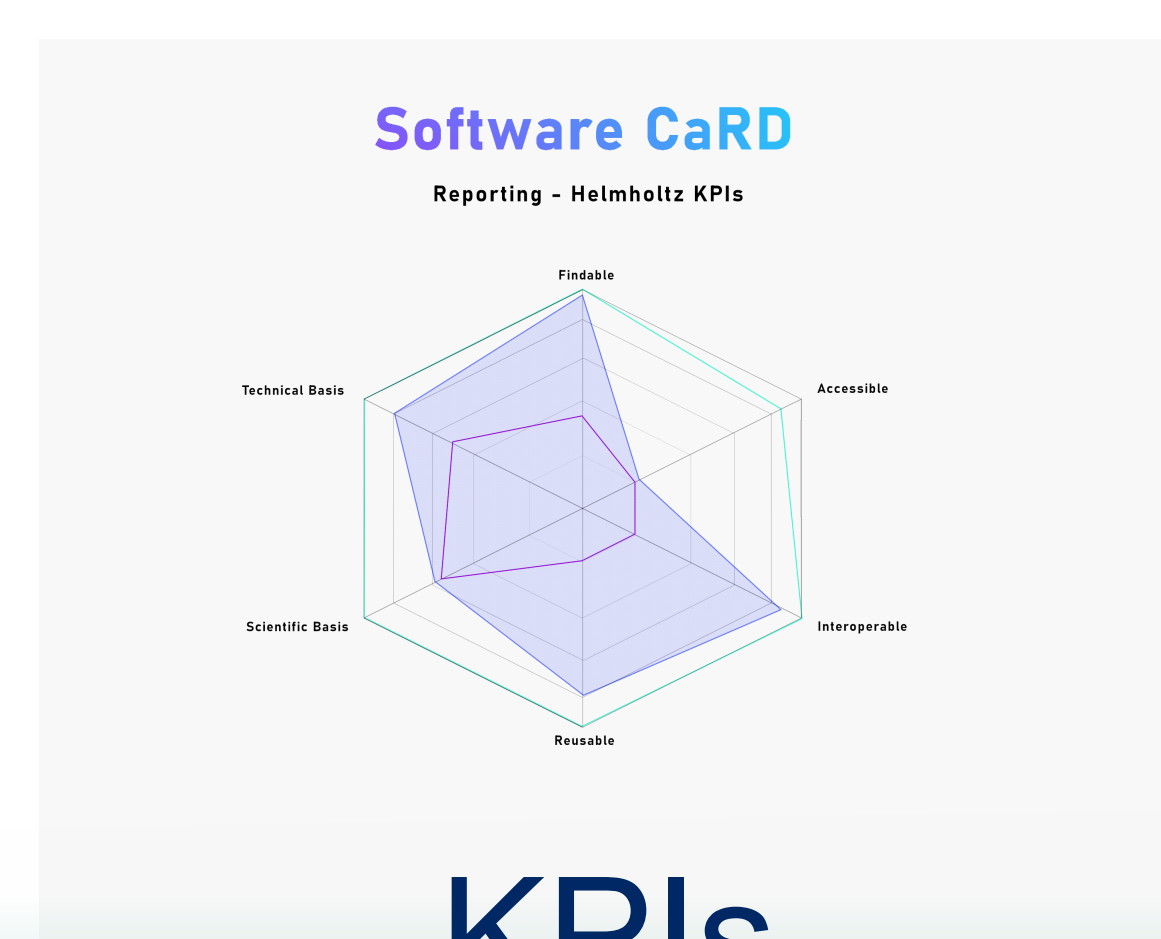
¹Deutsches Zentrum für Luft- und Raumfahrt e.V. // ²Forschungszentrum Jülich // ³Geoforschungszentrum Potsdam // ⁴Helmholtz-Zentrum Dresden-Rossendorf

About the project

In our project, we will create "Software CaRD" (Software Curation and Reporting Dashboard), an application that presents software publication metadata for curation. Preprocessed metadata from automated pipelines are made accessible in a structured graphical view. Issues and conflicts are highlighted to allow for easy resolution. Software CaRD also assesses metadata for compliance with configurable policies. For evaluation and reporting, relevant metadata from applicable sources is tracked and visualized.



Reporting

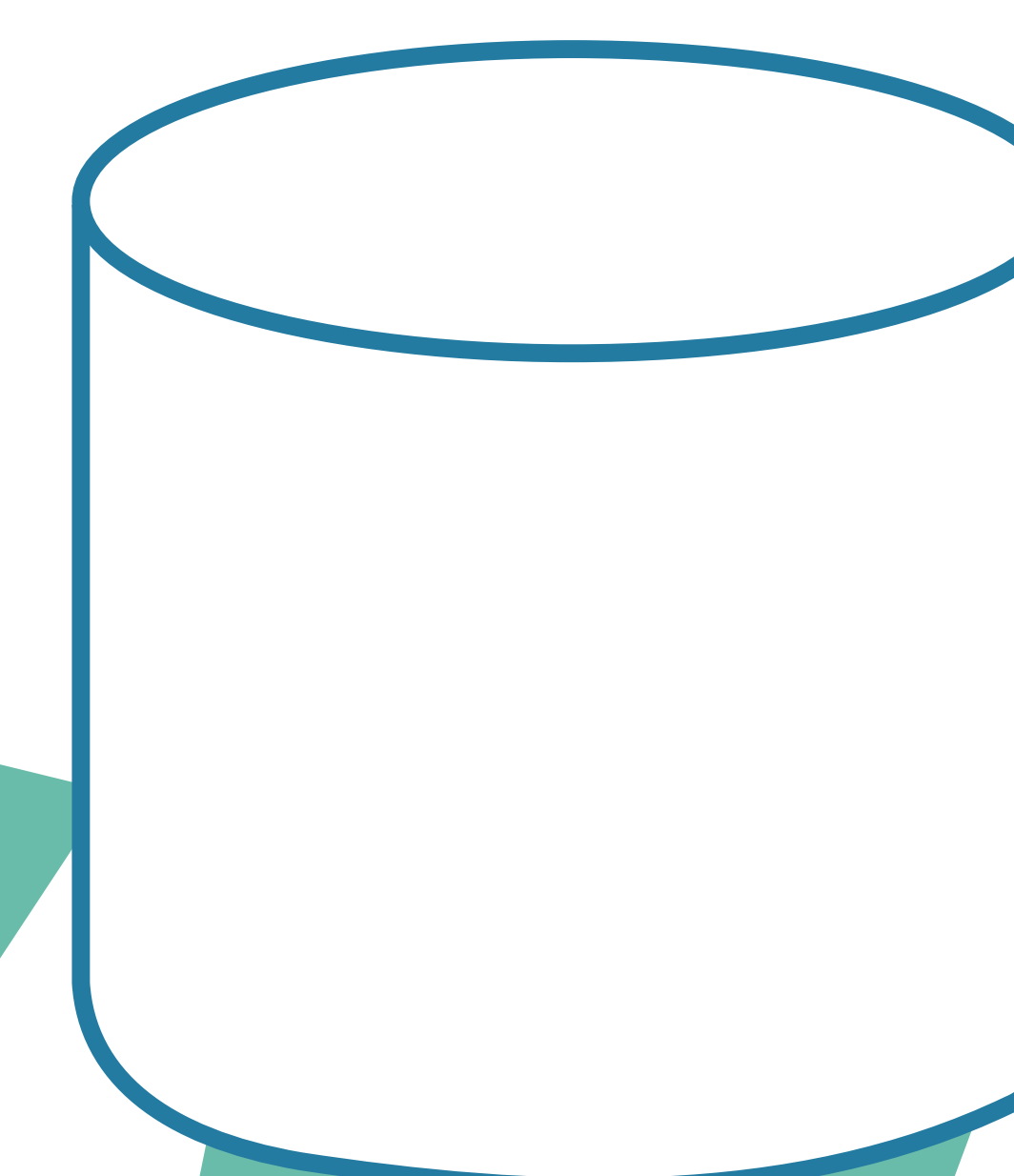


KPIs

Software CaRD Curation Dashboard

HERMES	Source	Metadata	Source
ORCID [id]	0000-0001-6372-3853	Harvester Location Timestamp	2024-08-01T17:34:22
Given name [givenName]	Michael	Harvester Location Timestamp	2024-08-01T17:34:22
Family name [familyName]	Michael	Harvester Location Timestamp	2024-08-01T17:34:22
E-Mail address [email]	michael.meinel@dlr.de	Harvester Location Timestamp	2024-08-01T17:34:22
	leido@me.com	Harvester Location Timestamp	2024-08-01T17:34:22
	michael_meinel@web.de	Harvester Location Timestamp	2024-08-01T17:34:22
Affiliation [affiliation]	German Aerospace Center (DLR e.V.)	Harvester Location Timestamp	2024-08-01T17:34:22

Metadata curation



Source code repository

Our primary source of information is the software source code repository. However, due to the flexible and extensible nature of the HERMES workflow which is used to collect metadata for Software CaRD, this can be extended.

We are also planning to provide further plugins that can query additional metadata stores or knowledge graphs.

Software CaRD report

The HERMES workflow produces a consistent dataset that contains all metadata and derived metrics.

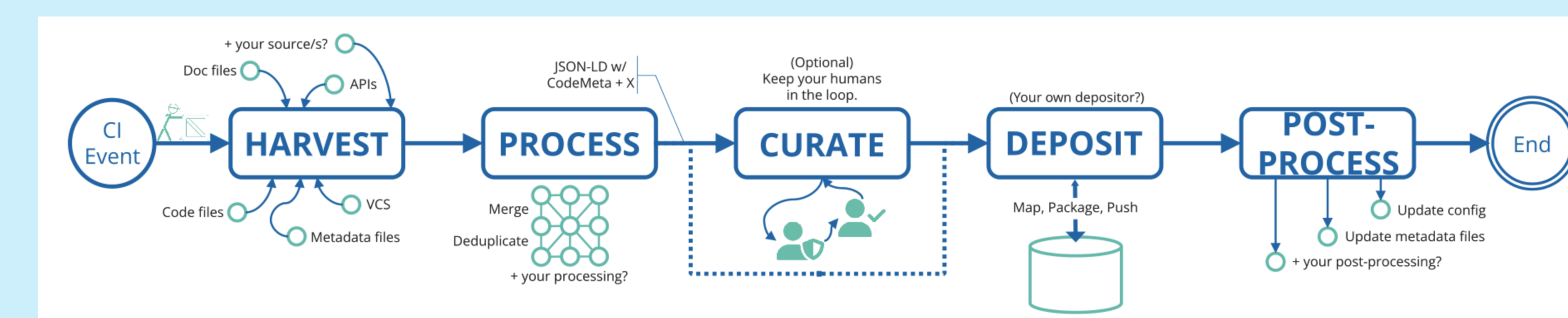
This data is stored in as well-defined knowledge graph using standardized JSON-LD vocabulary. Whenever possible, we rely on existing standards and reduce custom extensions to a bare minimum.

This dataset is then fed into the dashboard for inspection and curation.

```
{
  "@context": [...],
  "@type": "SoftwareSourceCode",
  "name": "hermes",
  "version": "0.8.1",
  "license": "https://spdx.org/licenses/Apache-2.0",
  "author": [
    {
      "@id": "https://orcid.org/0000-0001-6372-3853",
      "@type": "Person",
      "affiliation": {...},
      "familyName": "Meinel",
      "givenName": "Michael",
      "email": "michael.meinel@dlr.de"
    },
    ...
  ],
  "hasPart": [
    {
      "@type": "CreativeWork",
      "name": "README",
      "encoding": {
        "@type": "TextObject",
        "encodingFormat": "text/markdown",
        "url": "file:///./README.md"
      }
    },
    ...
  ]
}
```

The HERMES workflow

HERMES is an acronym for “HElmholtz Rich METadata Software publication”.



To streamline software publication, this project develops automated workflows to publish research software with rich metadata. Our tooling utilizes continuous integration solutions to retrieve, collate, and process existing metadata in source repositories, and publish them on publication repositories, including checks against existing metadata requirements. To accompany the tooling and enable researchers to easily reuse it, the project also provides comprehensive documentation and templates for widely used CI solutions.