Research Software Directory

what is it? why did we built it? what's in it for you?

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netherlands eScience center

National center for the development

and application of research software

(in the Netherlands)

Founded in 2011 by NWO and SURF

Science Park Amsterdam

How we work:

- We are a funder (in kind) of Dutch research projects
- Research Software development plays an essential role in our projects we fund
- We provide Research Software Engineers (RSEs) to these projects
- Together with the researchers, the RSEs translate research questions into software
- Broad impact and reuse of software is important to us
- Open science, open source, open data, open access, …

netherlands eScience center

~200 projects

(on many different topics)

Astronomy: fast radio bursts

In collaboration with ASTRON & UvA

nature

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Article | Published: 25 August 2021

Chromatic periodic activity down to 120 megahertz in a fast radio burst

Inés Pastor-Marazuela, Liam Connor, [...]Stefan J. Wijnholds

Nature **596**, 505–508 (2021) | Cite this article

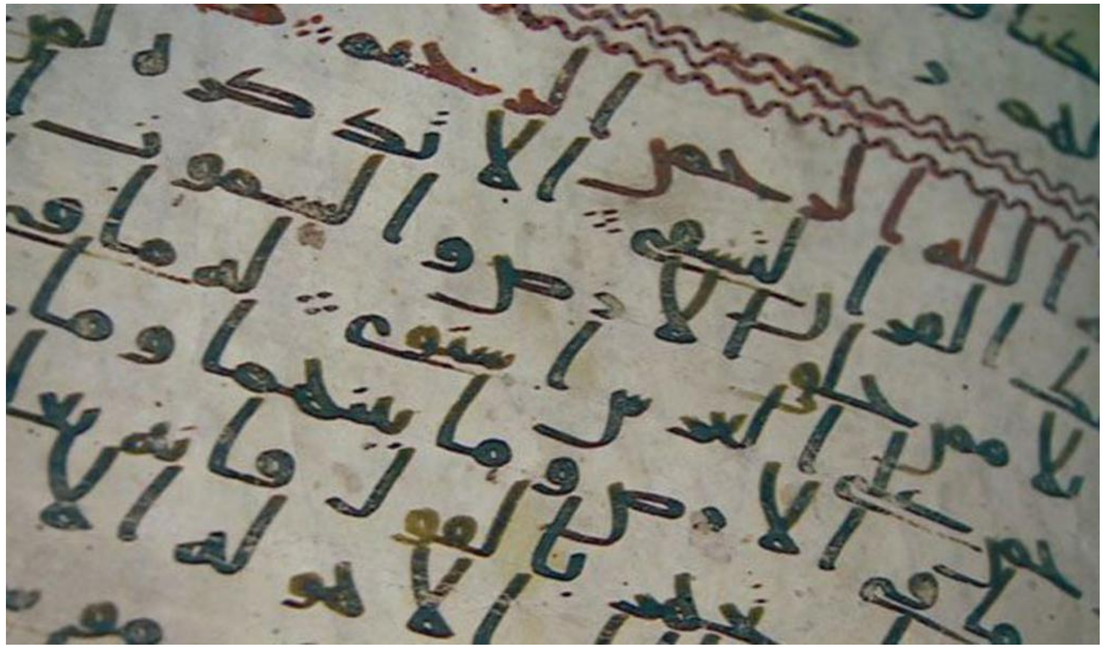
1349 Accesses | **161** Altmetric | Metrics

Abstract

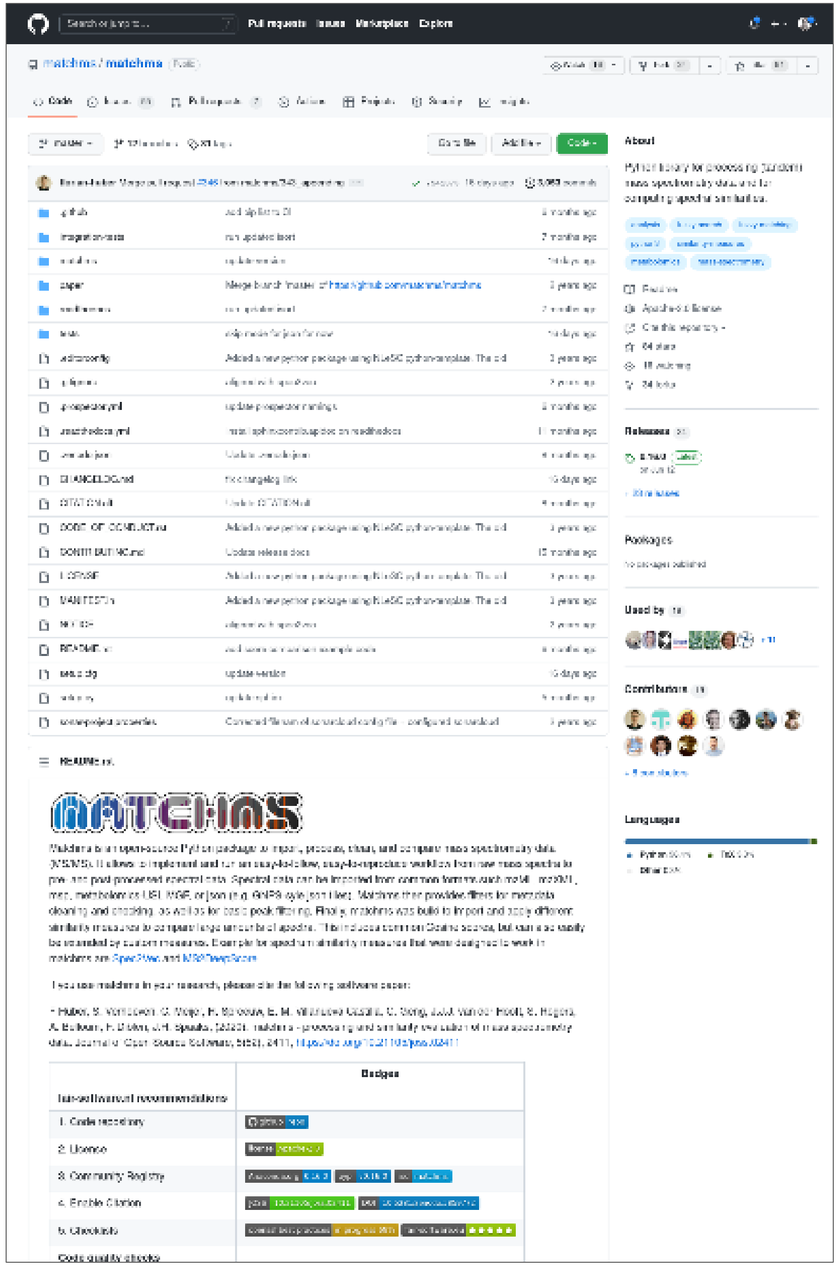
Fast radio bursts (FRBs) are extragalactic astrophysical transients[1] whose brightness requires emitters that are highly energetic yet compact enough to produce the short, millisecond-duration bursts. FRBs have thus far been detected at frequencies from 8 gigahertz (ref. [2]) down to 300 megahertz (ref. [3]), but lower-frequency emission has

Digital Humanities: Arabic-Islamic corpus

In collaboration with Utrecht University



The Why of the Research Software Directory



In 2011 very little credit was given to research software or the people developing it, and software was hardly shared or reused..

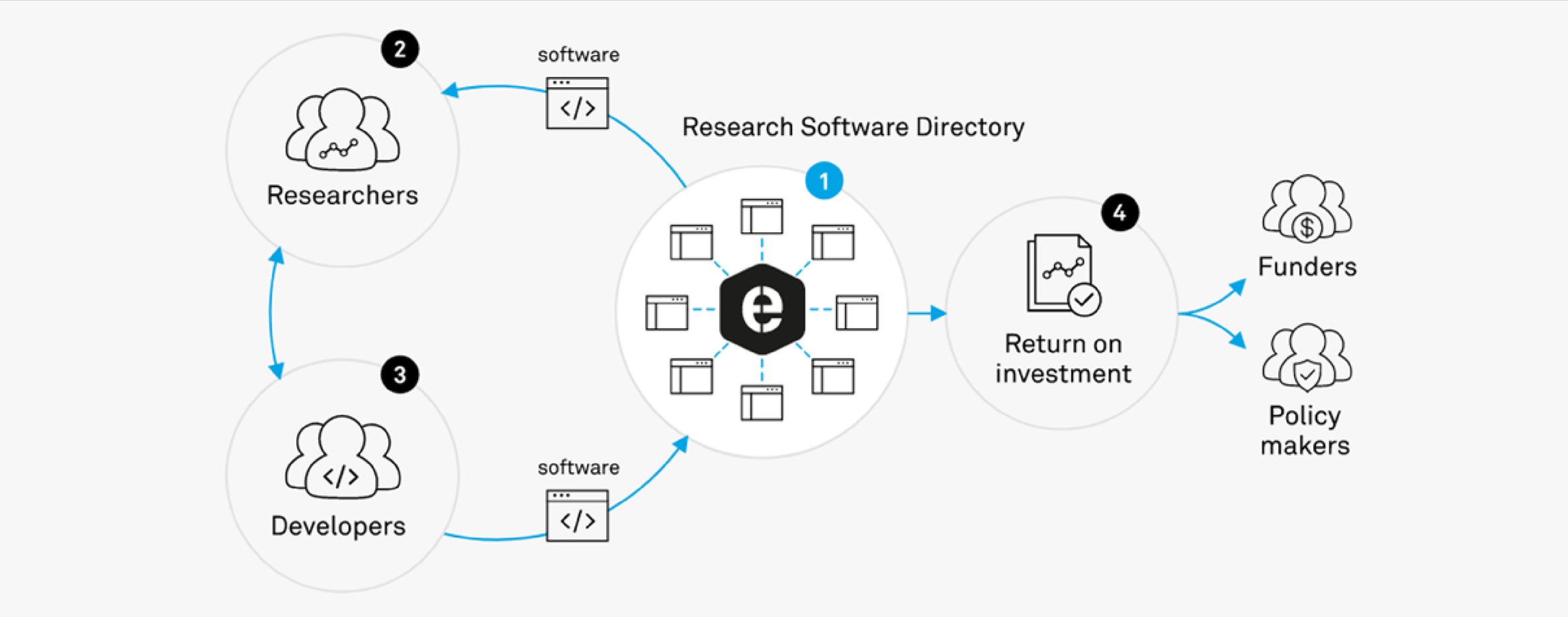
How do we show the impact our software has had on research to our funders?

How do we stimulate re-use and collaboration on research software?

How do we give RSEs credit for their work?

Research Software Directory
2017-now

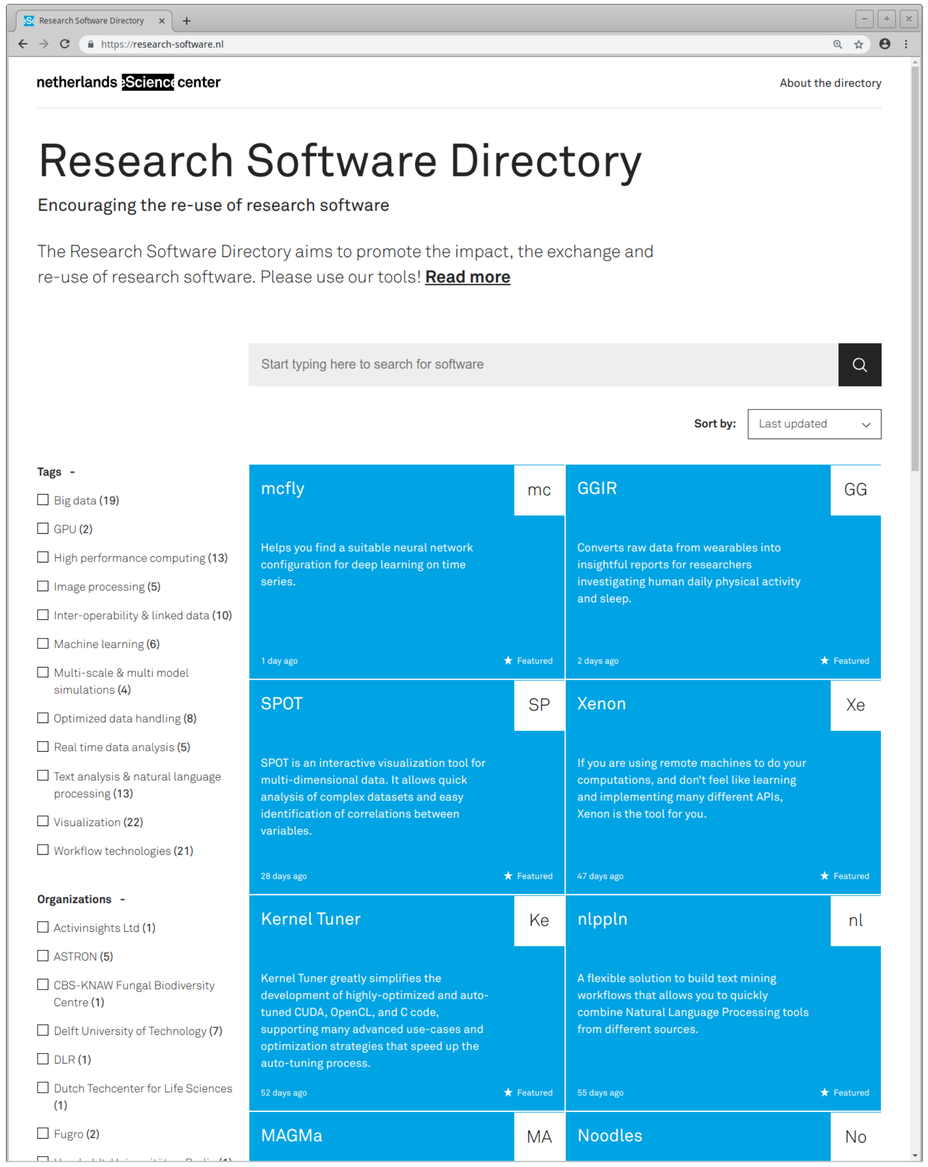
Research Software Directory: a CMS / CRIS for Research Software

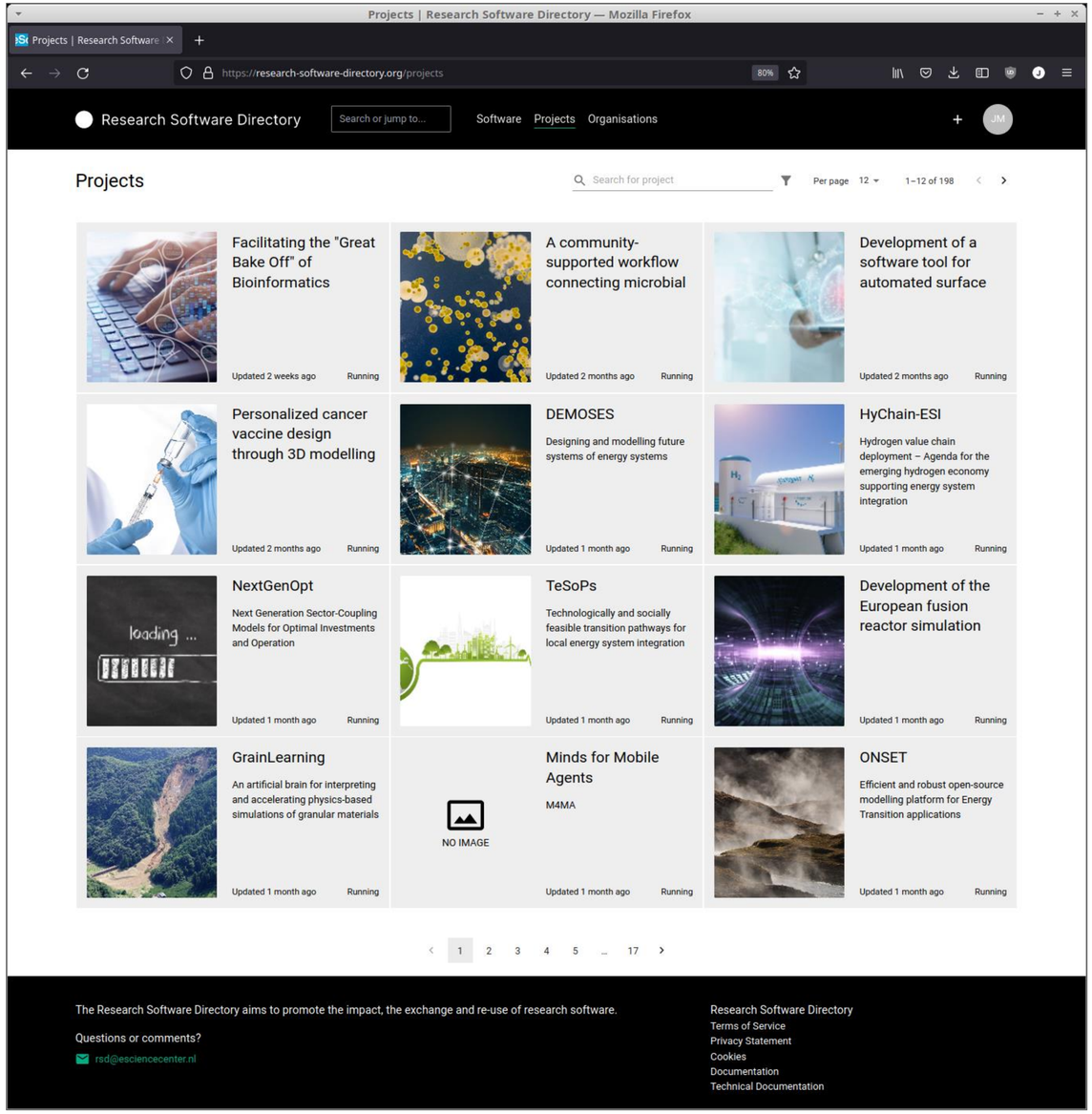


Target Groups:

- RSEs: showcase software, show impact, make software findable
- Researchers: find software, judge relevance, proper citation information
- Institutes, funders, policy makers: insight into impact of research software & RSEs

Research Software Directory (evolution from 2017 to 2022)

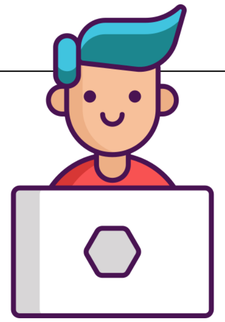




2017: self hosted, eScience Center only

2022: online service, joined development with HIFIS

Data sources, importing and harvesting



name
description
relevant IDs
testimonials
roles

create software &
project pages

GitLab

repository URL
commit activity
prog. languages
README.md
license

Research Software Directory

ROR

organization ID
proper name
website URL

contributor ID
proper name
affiliation

ORCID
Connecting Research and Researchers

GitHub

concept DOI
version DOIs
contributors
citation data
keywords
license

output DOI
metadata

zenodo

CFF

Crossref

DataCite
FIND, ACCESS, AND REUSE DATA

Generated webpages

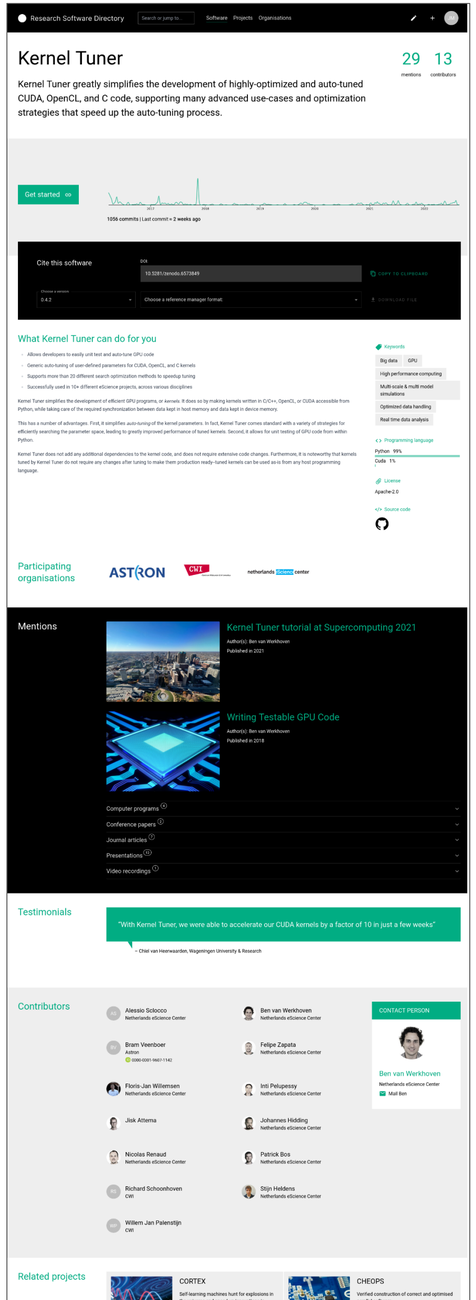
https://research-software-directory.org
https://helmholtz.software

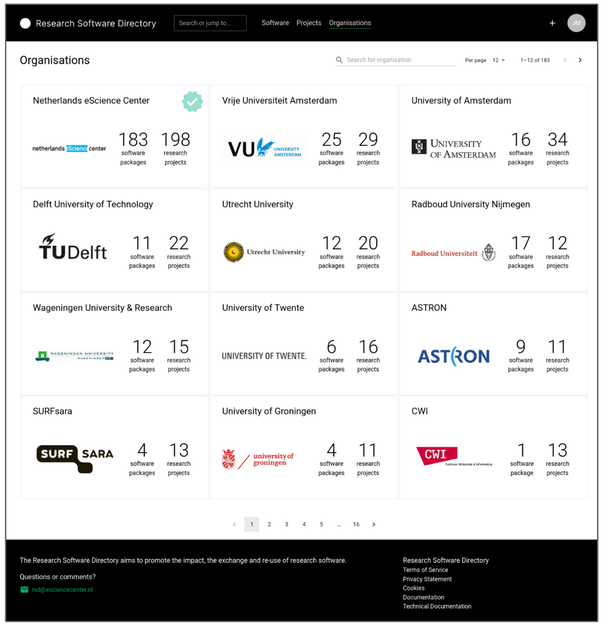
software pages

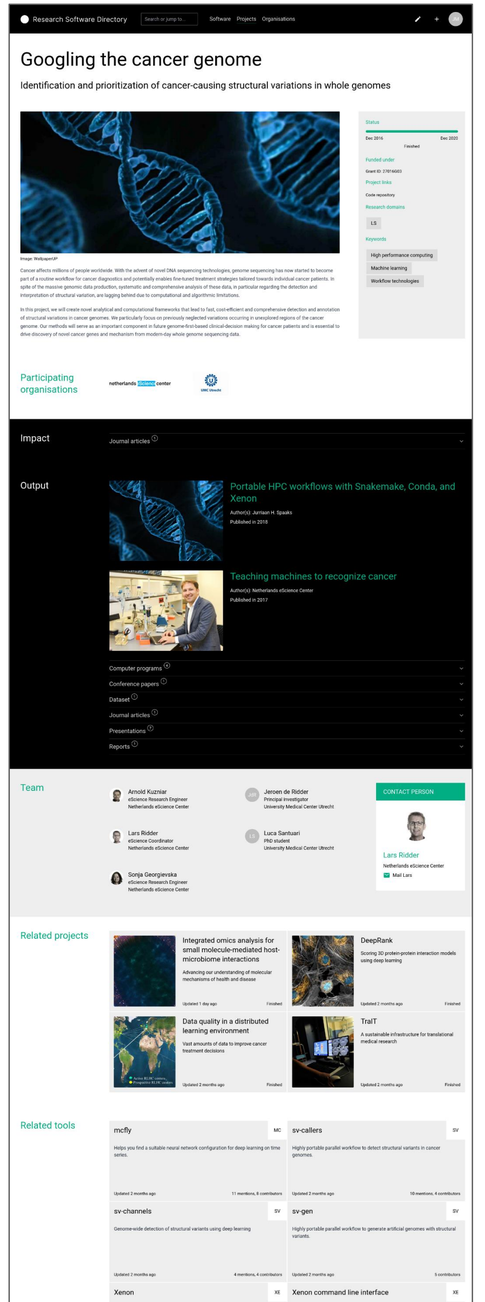
project pages

organization pages

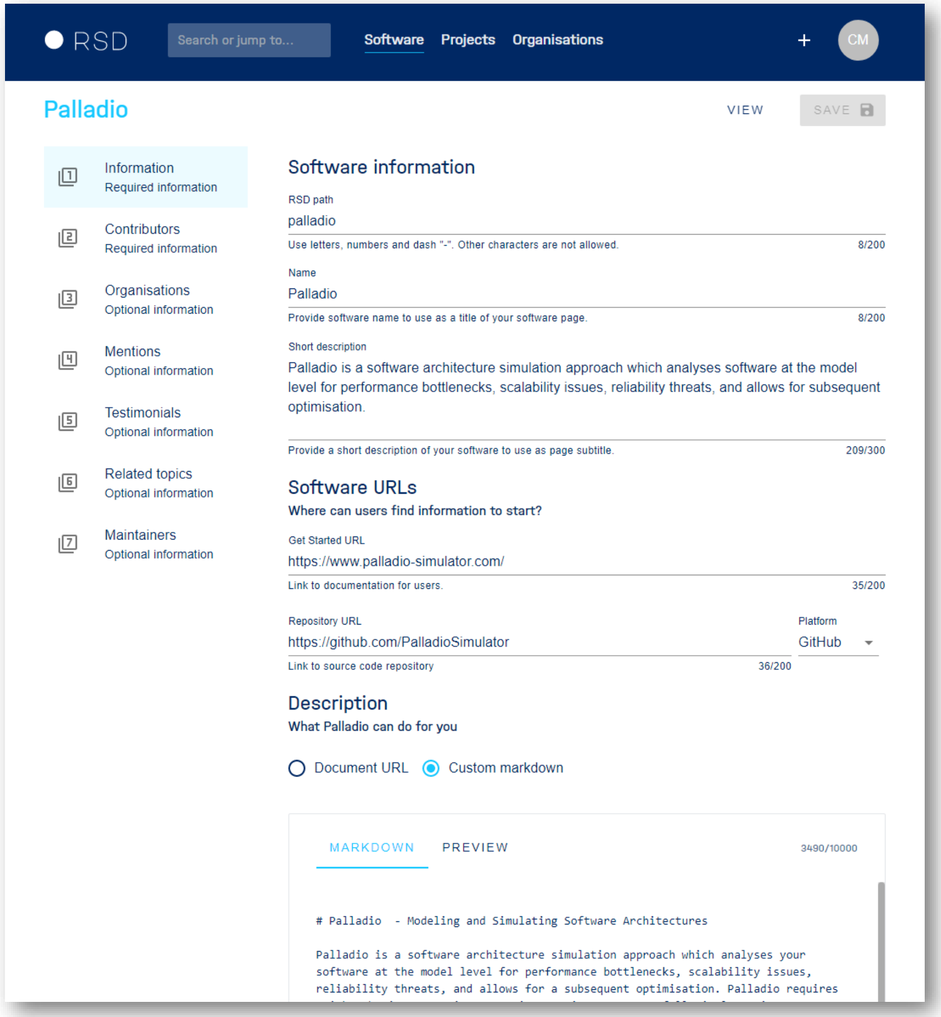
impact metrics (TODO)



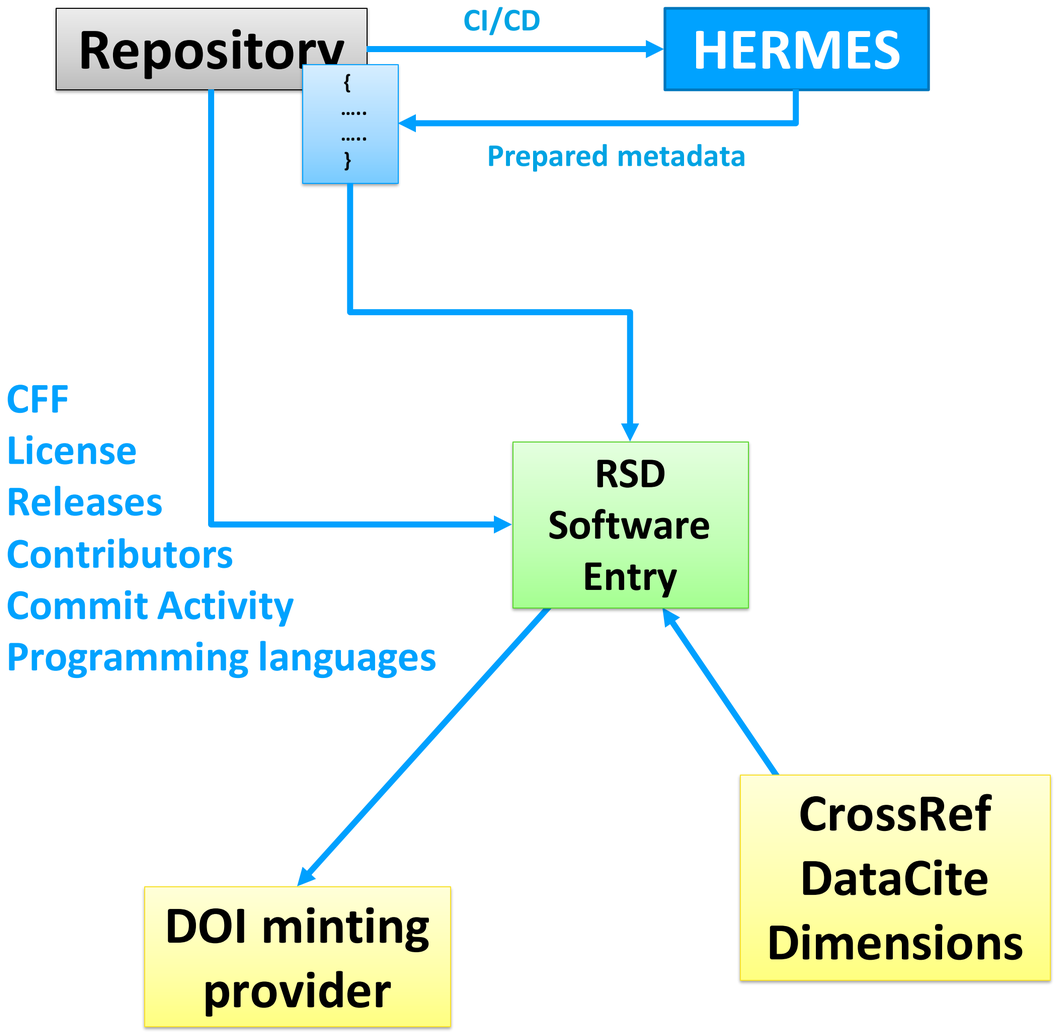




Data acquisition



- Currently
  - Webfrontend
  - Manual entry of most data
  - Partly auto-imports via DOI, ORCID, ROR



- Currently
  - Webfrontend
  - Manual entry of most data
  - Partly auto-imports via DOI, ORCID, ROR
- Vision
  - Use HERMES output as foundation
  - Aggregate metadata
  - Forward ready-to-use metadata to DOI providers
- After publication
  - Scrape citations
  - Create data foundation for impact analysis

- How do we nudge RSEs to making their Softwa FAIR?
- Software quality indicators?
- Based on
  - FAIR Aspects, e.g.
    - Code quality
    - Existence of tests
    - REUSE compatibility
    - License type (FOSS vs proprietary vs closed sourc
    - Documentation
  - Citations
  - Project activity

- Promote outstanding products on the front page
- Awards for best open source software?
- Helmholtz currently has Software Spotlights on https://hifis.net/spotlights

Exploit the full potential of the RSD in the future

- Provide services for RSEs
  - License consultation
  - Automated services that run every time (e.g. DOI forwarding)

- Potential for Institutes and Universities
  - Include RSD into process of publishing softwa
  - Publish only correctly licensed software
  - Have a catalogue of all published software