

Research Software – from ugly ducklings to beautiful swans

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B. Fritsch – DLR 13.09.2023

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HELMHOLTZ

Framing



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Increase awareness

- Helmholtz Task group Research Software:
 - Recommendations for the Implementation of Guidelines and Policies on Research Software Management at the Helmholtz Centers (<https://doi.org/10.2312/os.helmholtz.008> German, <https://doi.org/10.48440/os.helmholtz.040> English)
 - Model Policy on Sustainable Software at the Helmholtz Centers (<https://doi.org/10.2312/os.helmholtz.007> German, <https://doi.org/10.48440/os.helmholtz.041> English)
- Research Software policies in all centers by end of 2025



- Acknowledging research data and research SW as valuable products of research
- Helmholtz General Assembly (MV) 2021:
 - to collect not only publications but also research data and software in PoF Controlling
 - Starting with **simple entry indicator** (“Einstiegsindikator”) in January 2023
 - Taskgroup Indicators will develop new “**quality indicator**”, starting from 2025

Fig. 1: Current incentive structures do not reward academic software maintenance.

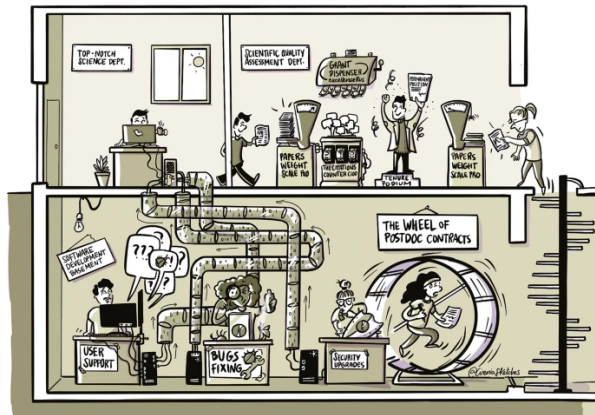


Figure from Merow, C. et al (2023)
<https://doi.org/10.1038/s41559-023-02008-w>

Quality measures/dimensions

reliable & sustainable scientific software has to be FAIR+ST

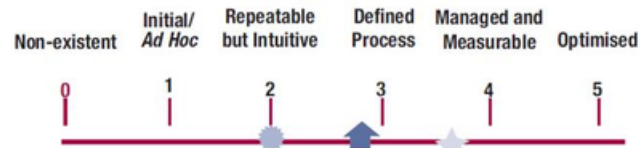
- Findable
- Accessible
- Interoperable
- Reusable

(see FAIR4RS DOI: <https://doi.org/10.15497/RDA00068>)

- Scientifically well-grounded
(based on scientific knowledge and practice)
- Technologically well-grounded
(based on software engineering knowledge and practice)

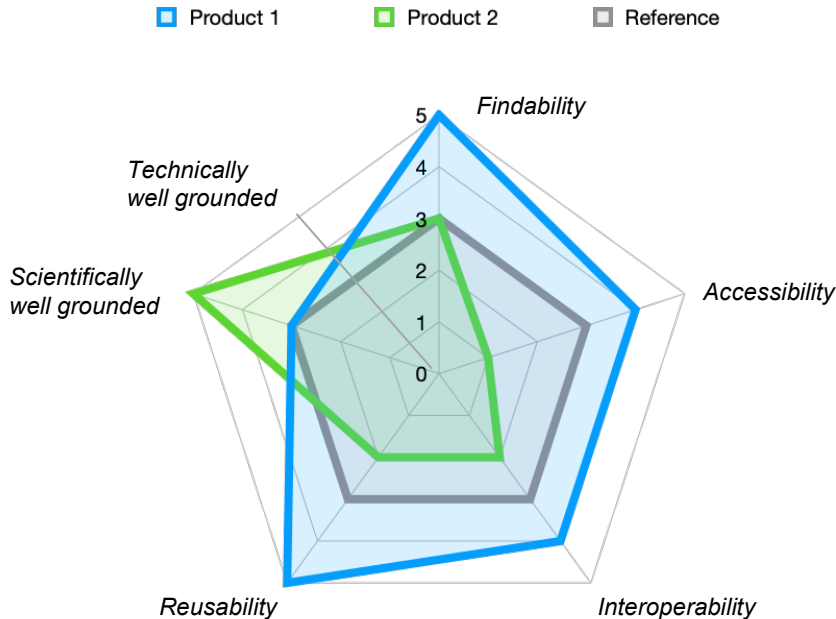


Maturity Model COBIT

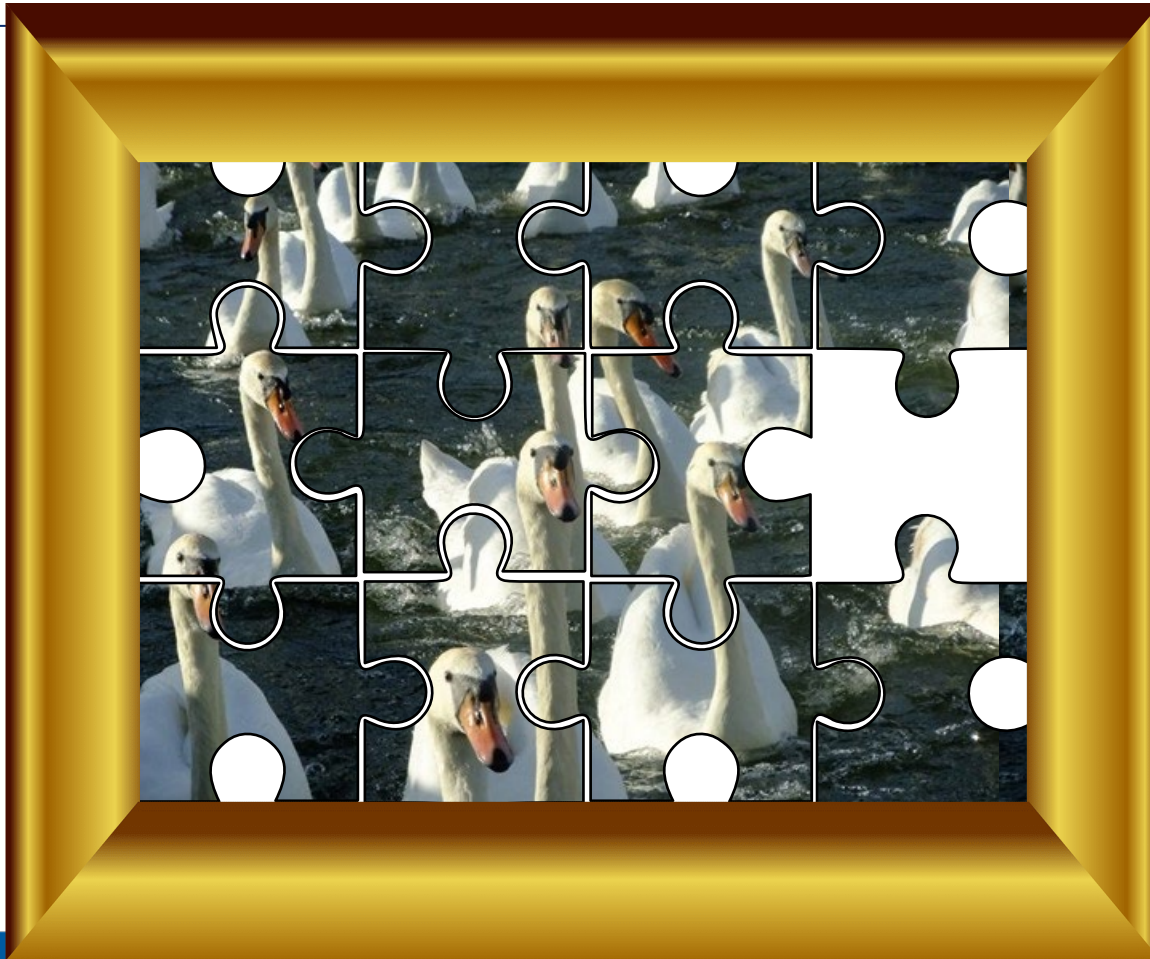


https://cewebs.cs.univie.ac.at/topics/MaturityModels/index.php?m=D&t=info&c=show&CEWebS_what=Cobit~32~Maturity~32~Model

B. Fritzsche: Graphical representation of the generic COBIT maturity model, from COB07



- Quality dimensions (FAIR+ST for software)
- Attributes describing each dimension
- Maturity levels for each attribute
- Maturity levels for each dimension quantitative number 1-5 derived from attribute maturity levels



- Priority Initiative „Digital Information“ of the Alliance of German Science Organizations: Recommendations on the development, use and provision of Research Software
<https://doi.org/10.5281/zenodo.1172988>
- Allianz Focus „Digitality in Research“

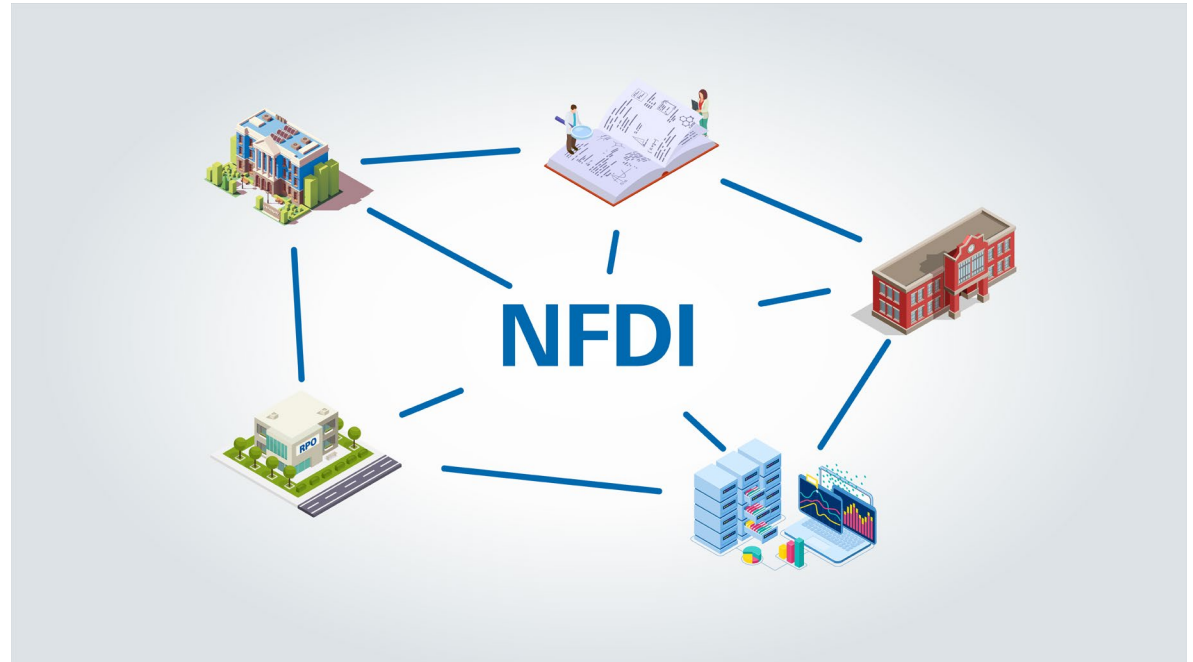


The screenshot shows the DFG website header with the logo 'DFG Deutsche Forschungsgemeinschaft' and a search icon. Below the header is a navigation bar with 'Research Funding', 'Funded Projects', and 'DFG in Profile'. The breadcrumb trail reads: 'Home > Funding > Calls for Proposals - Information for Researchers > 2022 > Package of Measures to Support a Shift in the Culture of Research Assessment'. The main heading is 'Information for Researchers No. 61 | 1 September 2022' followed by 'Package of Measures to Support a Shift in the Culture of Research Assessment'. A sub-heading states: 'DFG changes proposal forms and introduces mandatory CV template / The aim is to support a shift in the culture of research assessment / Improvement of equal opportunity practices'.

nfdi

Nationale
Forschungsdaten
Infrastruktur

base4
nfdi Basic Services
for NFDI



- de-RSE e.V.
 - Representation of interest for RSEs
 - Mapping and linking German RSE community
 - International collaborations



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un-deRSE23 - Unconference for Research Software Engineering in Germany

26-28 Sep 2023 Jena (Germany)



**FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA**

<https://un-derse23.sciencesconf.org/index>



de-RSE - Gesellschaft für Forschungssoftware @RSE_de · 31. Juli ...

Save the date!

For the deRSE24 Conference, hosted & organized by the Julius-Maximilian-Universität Würzburg 4th–8th March 2024.

Running from Tues 12pm to Thurs 12pm leaves plenty of time for other events either side.

A call for contributions will be available soon.

#RSEng

- Further information to be active in RSE movement:
 - Website: <https://de-rse.org/en/>
 - Join: <https://de-rse.org/en/association.html>

- Mailinglist: liste@de-RSE.org
- Chat: <https://chat.gwdg.de/channel/derse/>
- Monthly community Call (Open Science, deRSE, GRN):
 - first Wednesday of the month, alternately at 11 a.m. or 4 p.m
 - Master pad for all meetings: <https://pad.okfn.de/p/openscience-ag-master-pad>
- Mastodon: [@de_rse@mastodon.social](https://mstdn.social/@de_rse), Twitter: [@RSE_de](https://twitter.com/RSE_de)

- Mail:
 - vorstand@de-rse.org

GI e.V. und de-RSE gründen RSE Fachgruppe

Stephan Janosch, July 18, 2023

Das Thema Forschungssoftware liegt nicht nur uns am Herzen. Auch die [Gesellschaft für Informatik](#) mit ihrem Forschungsinteresse widmet sich dem Thema. Um gemeinsam an verschiedenen Themen zu arbeiten, haben der GI-Fachbereich Softwaretechnik und wir eine gemeinsame [RSE-Fachgruppe](#) gegründet. Damit hat die [Absichtserklärung vom Februar](#) auch gleich Früchte getragen.

fg-rse.gi.de



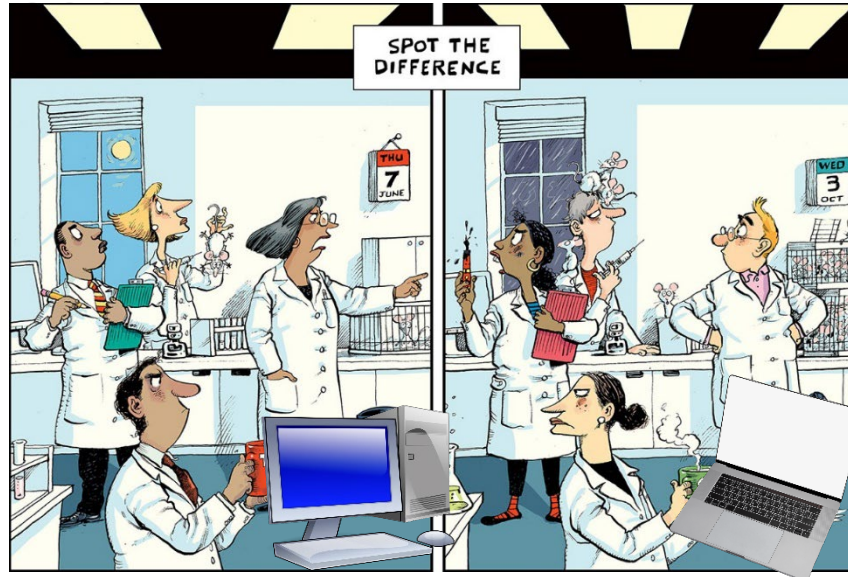
nature > comment > article

COMMENT | 21 July 2020

The best time to argue about what a replication means? Before you do it

To avoid stalemates and provide lessons, replicators and original researchers must reach agreement on a study design and set out expectations ahead of time.

Brian A. Nosek  & Timothy M. Errington 

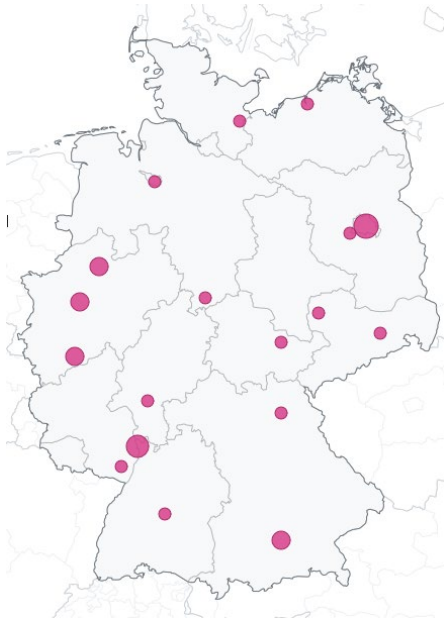


Aus: <https://www.nature.com/articles/d41586-020-02142-6>

Images by rawpixel.com

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- <https://reproducibilitynetwork.de/>



info@reproducibilitynetwork.de



Researchers

We **support researchers** in educating themselves about open science practices, and founding local open science communities.



Reproducibility Initiatives

We connect **local or topic-centered Reproducibility Initiatives** to a national network, and foster connections between them.



Institutions

We advise **institutions** on how to embed open science practices in their work.



Other Stakeholders

We represent the **open science community** toward other stakeholders in the wider scientific landscape.



- Acknowledging research data and research SW as valuable products of research
 - DORA (Declaration on Research Assessment) <https://sfdora.org/>
 - Towards a reform of the research assessment system, 2021 (<https://data.europa.eu/doi/10.2777/707440>)
 - *G7 Research Compact, 2021* https://www.bmbf.de/bmbf/shareddocs/downloads/files/G7_Research_Compact.html
- Hidden REF <https://hidden-ref.org/>



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Thank you for your attention!