

Demonstrating experience in developing a research data management plan: needs for services, tools and policies

Sebastian Dahle
Biotechnical faculty
University of Ljubljana

Conference “Open Research Data in Slovenia”
14.11.2019, Maribor



University of Ljubljana

Biotechnical Faculty

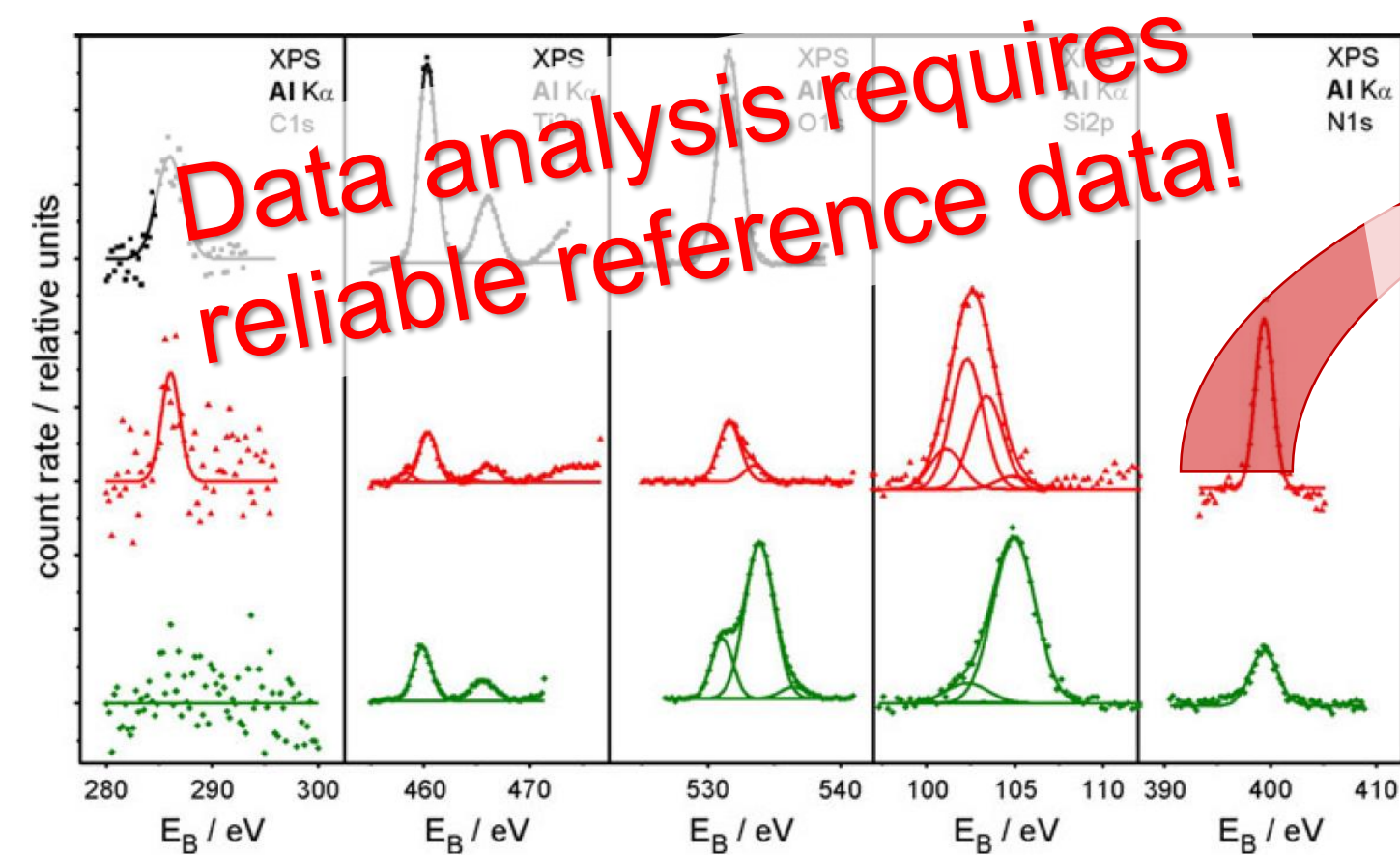
“This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745936.”



Except where otherwise noted, this work is licensed under:
<https://creativecommons.org/licenses/by/4.0/>



WHY experiences from my phd studies



**354 paper reviewed.
Not a single one provides complete set of values.
Instead:
wrong citations & inconsistencies**

Plasma Chem Plasma Process (2013) 33:839–853 843

Table 3 Literature values of binding energy and chemical shift for the Si 2p structure of Si–O–N–compounds in XPS

Peak	Tetrahedron	Bonding unit	Binding energy/eV	Chemical shift/eV	References
Si 2p	Si–Si ₄	Si	98.3	0.00	35
	Si–Si ₂ O	Si ₂ O	99.3	0.95	35
	Si–Si ₃ N	Si ₃ N	99.5	1.20	37
	Si–Si ₂ O ₂	SiO	100.1	1.75	35
	Si–Si ₂ N ₂	Si ₂ N ₂	100.7	2.40	37
	Si–SiO ₃	Si ₂ O ₃	100.8	2.48	35
	Si–SiN ₃	SiN	101.8	3.50	37
	Si–O ₄	SiO ₂	102.2	3.90	36
	Si–N ₄	Si ₃ N ₄	103.3	5.00	37
	Si–H ₄	SiH ₄	107.3	9.00	39

Table 4 Literature values of binding energy and chemical shift for the O 1s and N 1s structures of Si–O–N–compounds in XPS

Peak	Tetrahedron	Bonding unit	Binding energy/eV	Chemical shift/eV	References
O 1s	O–Si ₂	SiO ₂	532.2		36
N 1s	N–Si ₃	Si ₃ N ₄	397.8	0.00	
	N–Si ₂ O ₁	(H ₃ SiO)N(SiH ₃) ₂	399.6		38
	N–Si ₁ O ₂	(H ₃ SiO) ₂ N(SiH ₃)	401.7		38
	N–O ₃	(H ₃ PO ₃) ₃	405.5	5.55	

Reference values combined from several selected sources. (JIGSAW-APPROACH?)!

More than 350 publication out of over 3 decades, none states all details of their analysis.

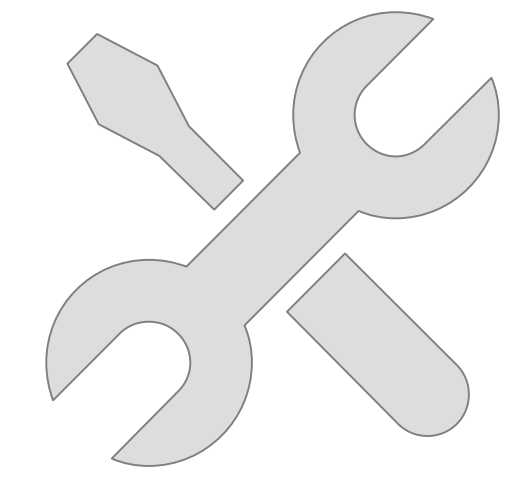
→ **No reproducibility!**

Wrongly cited values, inappropriately conducted analysis.

→ **Code of Conduct for Research Integrity?**

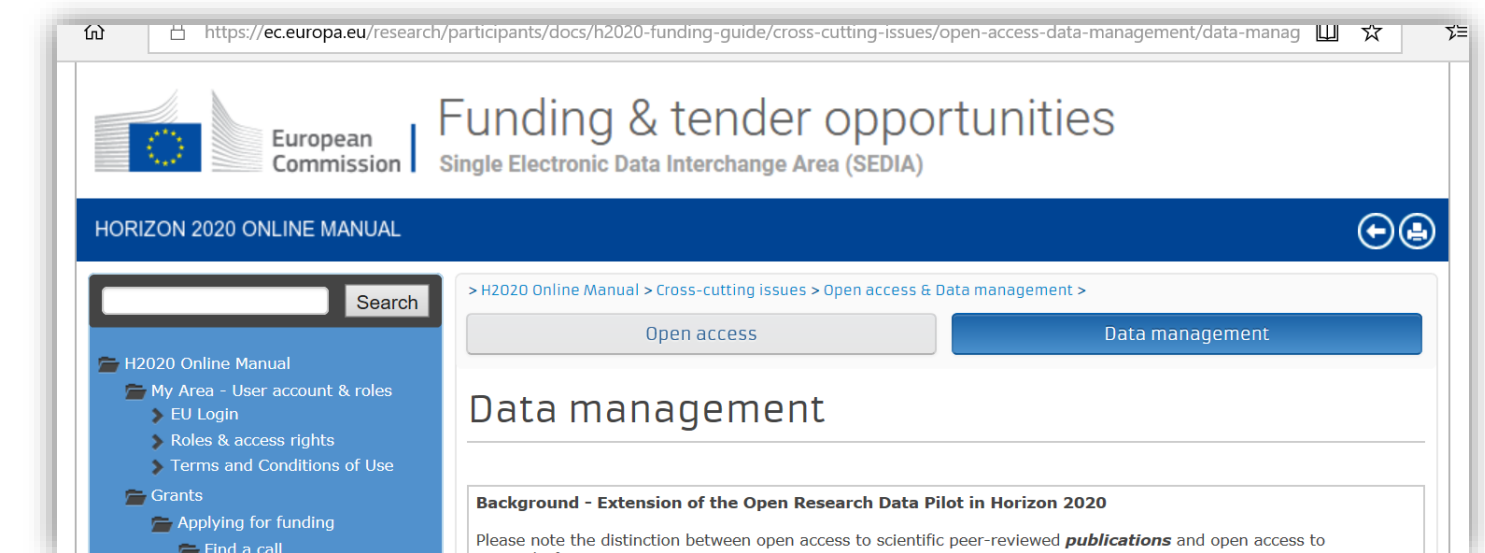


HOW guidelines and tools



Information:

- Horizon 2020 online manual
- <https://www.openaire.eu/>
- <https://www.fosteropenscience.eu/>
- <https://www.rd-alliance.org/>



Implementation:

- <https://dmponline.dcc.ac.uk/>



University of Ljubljana

Biotechnical Faculty

“This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745936.”

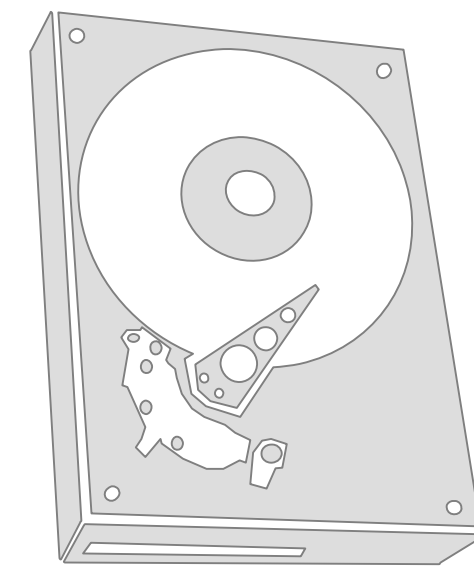


Except where otherwise noted, this work is licensed under:

<https://creativecommons.org/licenses/by/4.0/>



HOW we store and archive data



❖ Store & archive all data (& notes) at Storage Area Network (SAN),

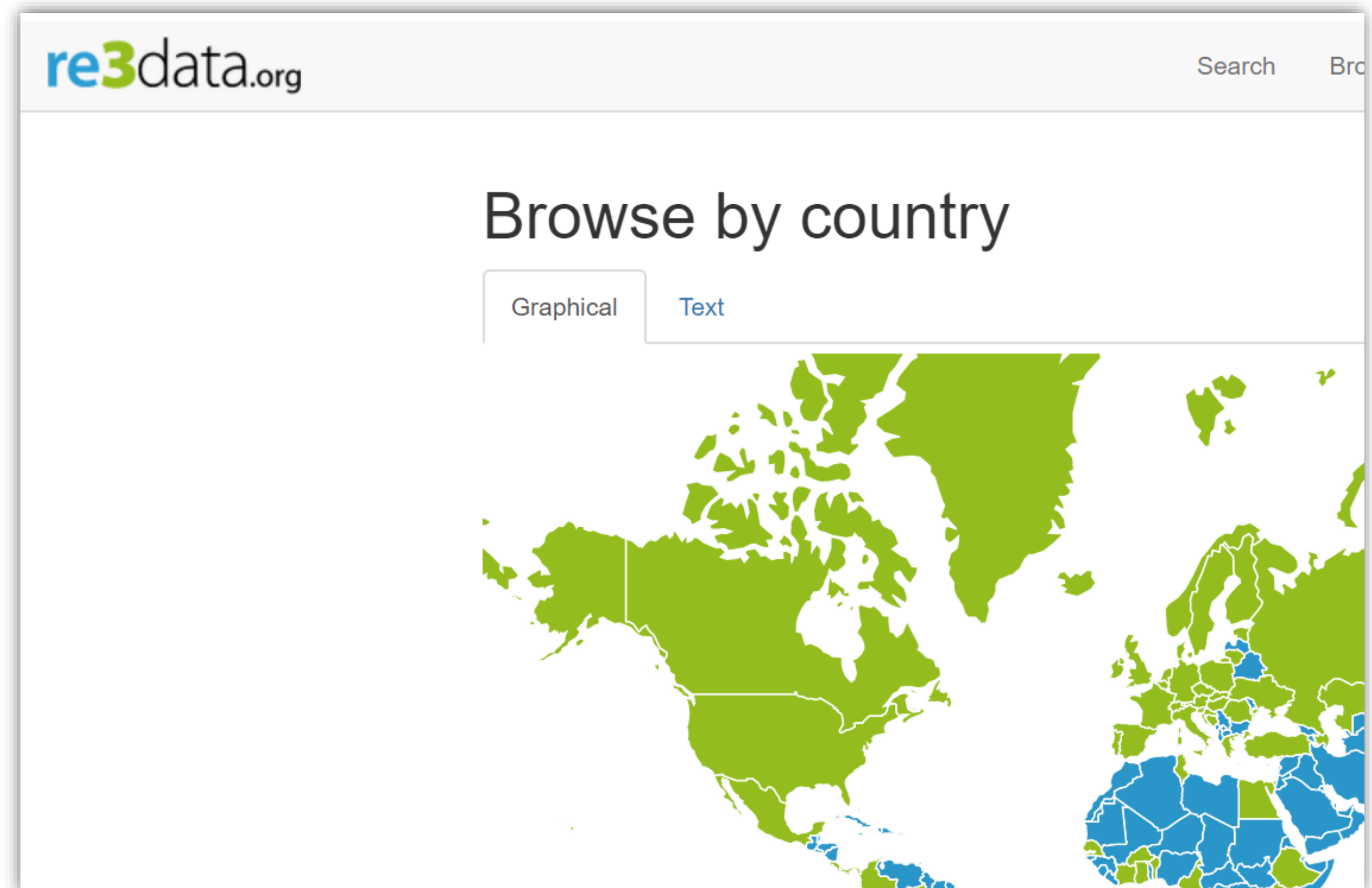
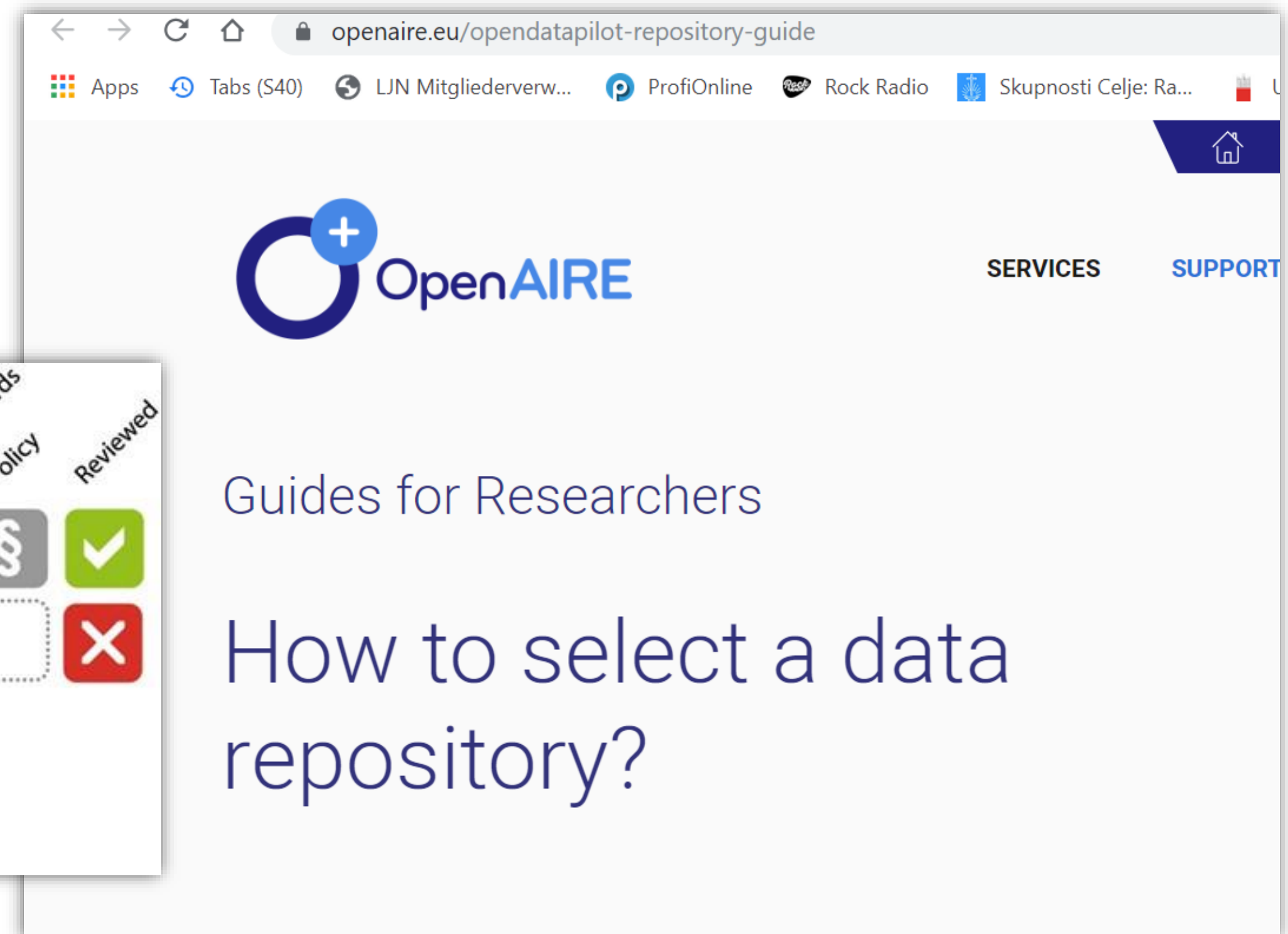
❖ Publish all data that relates to any form of publication on Zenodo,

❖ Mutually link dataset and publication using each others DOI.



HOW repository selection

- Functionality
- Topics
- Ease of use
- Pricing



WHAT else is included in the DMP?



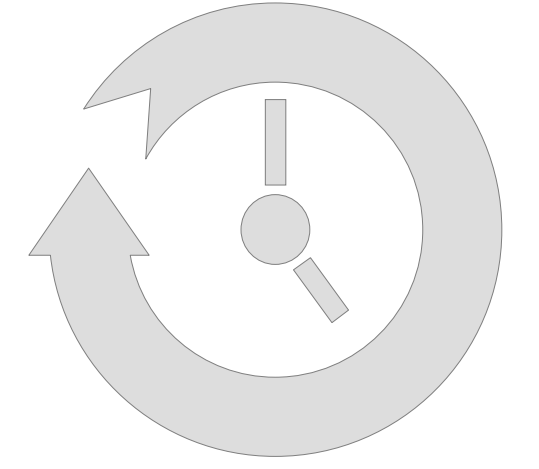
- Summary & Purpose
- Types, formats, origins, expected sizes

- Findability
- Accessibility
- Interoperability
- Re-usability

- Resources & responsibilities
- Security and ethics



WHAT implementation is manageable



...as always: Keep It Simple.

- Set up procedures in the beginning
- Collect data and metadata together
- Have routines in place for curation and publication



University of Ljubljana

Biotechnical Faculty

“This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745936.”



Except where otherwise noted, this work is licensed under:
<https://creativecommons.org/licenses/by/4.0/>



WHAT are our impressions and suggestions

❖ Data Management Planning & Open Research Data are absolutely worthwhile



❖ Platforms, services & support are readily available



❖ Standardized procedures & mandatory training are strongly suggested



WHAT DO YOU THINK?



University of Ljubljana

Biotechnical Faculty

“This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 745936.”



Except where otherwise noted, this work is licensed under:
<https://creativecommons.org/licenses/by/4.0/>

