Upravljanje istraživačkim podacima

Obrad Vučkovac

Univerzitet u Beogradu
Institut za nuklearne nauke “Vinča” - Biblioteka

Upravljanje istraživačkim podacima
Research Data Lifecycle & Data Management Plan
FAIR principi

Upravljanje istraživačkim podacima se odnosi na niz aktivnosti koje istraživači međusobno dogovaraju i usvajaju kako bi na najefikasniji način prikupili i organizovali svoje skupove podataka, kao i da bi ih sačuvali za buduću upotrebu koja može uključiti i deljenje sa drugim istraživačima.

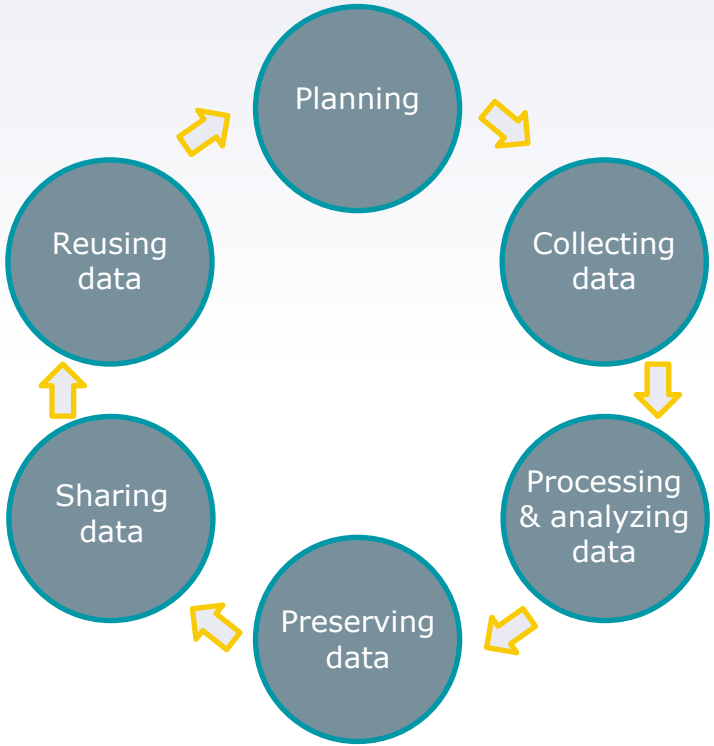
rdm.open.ac.rs

Zašto RDM?

Kriza replikacije u nauci (*Replication crisis*)

Neke prednosti RDM-a:

- bolja naučna praksa
  - transparentnost naučnog istraživanja;
  - (trajno) čuvanje;
  - veća citiranost;
  - mogućnost saradnje
- ekonomski razlozi
  - manje ponavljanja eksperimenata (finansijski i etički razlozi)
- korišćenje podataka u edukativne svrhe



Research Data Lifecycle

Data Management Plan

Plan upravljanja podacima
(eng. Data Management Plan, DMP)

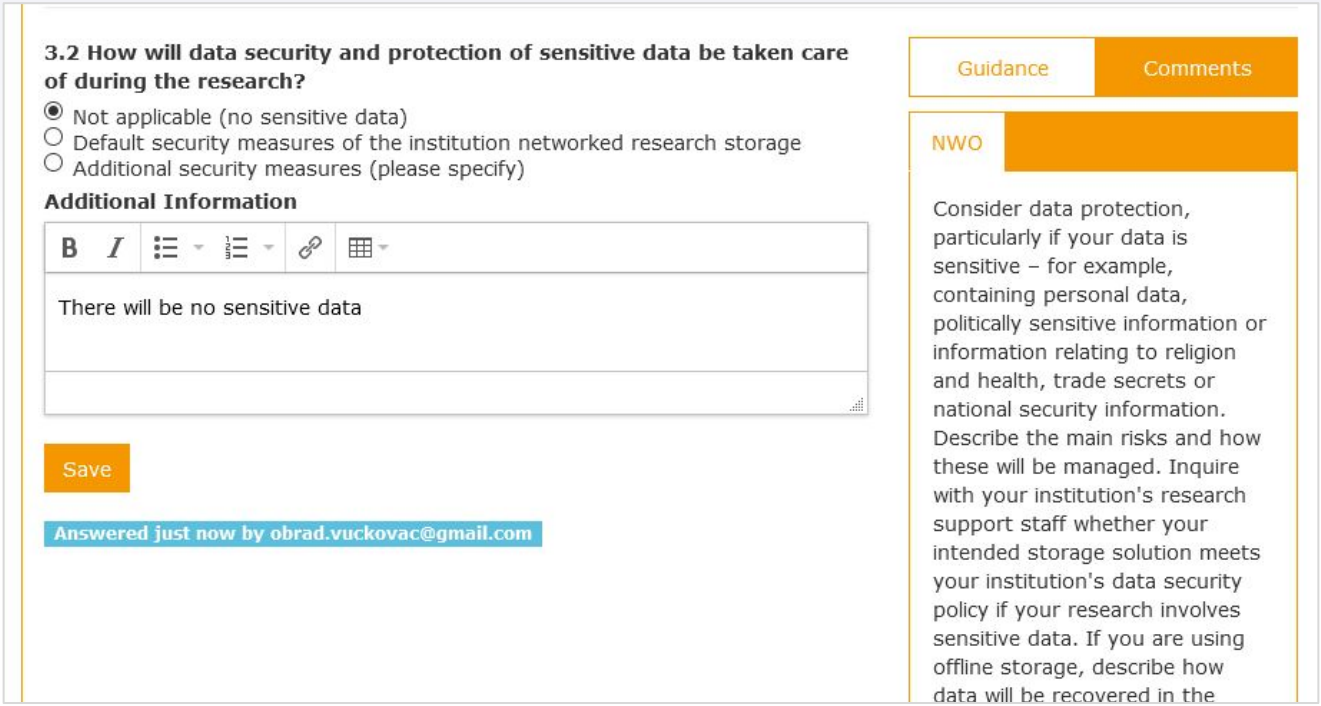
Dokument koji služi kao okvir svim učesnicima na projektu kako da upravljaju podacima i na koji način da ih čuvaju.

Donosi se na početku projekta i svi učesnici bi trebali da su upoznati sa njim.

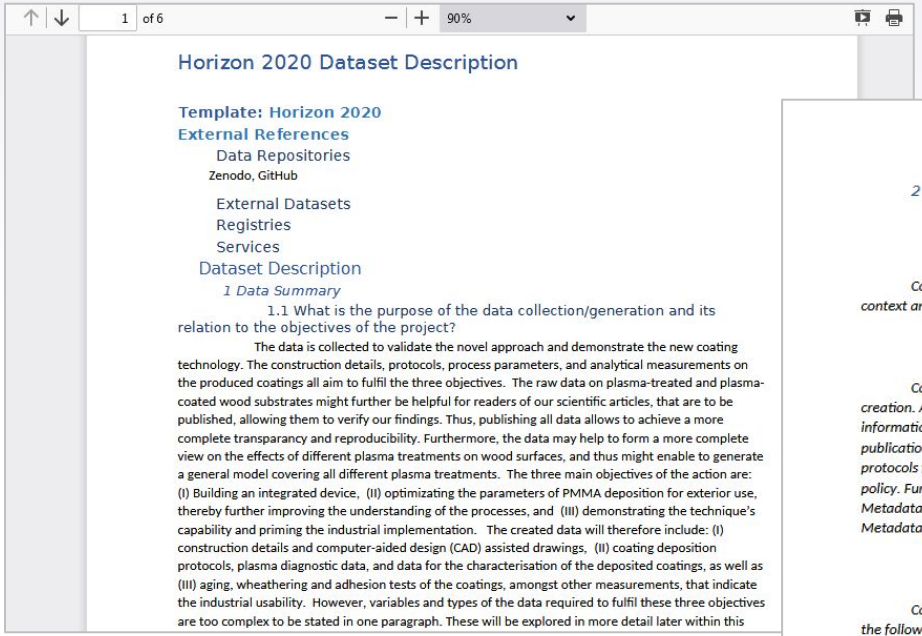
DMP se može revidirati i uređivati u toku projekta.

Institucije i finansijeri (uglavnom) omogućavaju obrasce za izradu DMP-ova.

Alati za DMP: Argos, DMPOnline, DMP tool, DSW



Alati za DMP: Argos, DMPOnline, DMP tool, DSW



1 of 6 — 90%

Horizon 2020 Dataset Description

Template: Horizon 2020

External References

Data Repositories

Zenodo, GitHub

External Datasets

Registries

Services

Dataset Description

1 Data Summary

1.1 What is the purpose of the data collection/generation and its relation to the objectives of the project?

The data is collected to validate the novel approach and demonstrate the new coating technology. The construction details, protocols, process parameters, and analytical measurements on the produced coatings all aim to fulfil the three objectives. The raw data on plasma-treated and plasma-coated wood substrates might further be helpful for readers of our scientific articles, that are to be published, allowing them to verify our findings. Thus, publishing all data allows to achieve a more complete transparancy and reproducibility. Furthermore, the data may help to form a more complete view on the effects of different plasma treatments on wood surfaces, and thus might enable to generate a general model covering all different plasma treatments. The three main objectives of the action are: (I) Building an integrated device, (II) optimizating the parameters of PMMA deposition for exterior use, thereby further improving the understanding of the processes, and (III) demonstrating the technique's capability and priming the industrial implementation. The created data will therefore include: (I) construction details and computer-aided design (CAD) assisted drawings, (II) coating deposition protocols, plasma diagnostic data, and data for the characterisation of the deposited coatings, as well as (III) aging, wheathering and adhesion tests of the coatings, amongst other measurements, that indicate the industrial usability. However, variables and types of the data required to fulfil these three objectives are too complex to be stated in one paragraph. These will be explored in more detail later within this

2 FAIR Data

2.1 Making data findable, including provisions for metadata

2.1.1 Will you use metadata to describe the data?

No

Comment: All data will be uploaded together with the relating metadata, including project context and labbook entries.

2.1.3 Will your metadata use standardised vocabularies?

No

Comment: No field-specific recommendations are known to the PI at the point of the DMP creation. As metadata, we will thus provide: Publication date, Title, Authors including contact information, Description, Version, Language, Keywords, Grant acknowledgement, and References to all publications referring to the dataset. Further, we will include complete lab notebook excerpts, as well as protocols for measurements and analysis within the dataset. This is fully in line with the repository's policy. Further, the repository stores all metadata in JSON-format according to a defined JSON schema. Metadata is exported in several standard formats such as MARCXML, Dublin Core, and DataCite Metadata Schema in accordance with the OpenAIRE Guidelines.

2.1.7 Will you use naming conventions for your data?

Yes

Comment: We ascertain that the data will be easily recognized and correlated to experiments via the following naming conventions: Raw data: YYMMDD_[experiment]_[technique]_XXX. Processed results: YYMMDD_[experiment]_[technique]_XXX_analysis_ZZZ.* Herein, symbols represent the following: YYMMDD - the inverted date of the day the experiment was conducted [experiment] - a short title for the experimental series [technique] - a unique denominator for each technique, such as CLSM, SEM XXX - a running number for individual measurements ZZZ - a running number*

Alati za DMP: Argos, DMPOnline, DMP tool, DSW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Zaštita podataka

Zaštita tokom istraživanja

- Rezervne kopije (*backups*)
  - pravilo 3-2-1
  - “cloud storage”
- Kontrola pristupa
  - zaštita lozinkom
  - enkripcija

Image by John from Wikimedia Commons under CC-BY license

Zaštita podataka

Dugoročno čuvanje (nakon istraživanja):

- Procena i izbor podataka
- Otvoreni i održivi formati
  - npr. CSV – a ne XLSX ili OPJ;
  - lista preporučenih formata (DANS)
  - (*vlasnički* formati ako su prihvaćeni u naučnoj zajednici)
- **Digitalni repozitorijumi** za dugoročno čuvanje podataka

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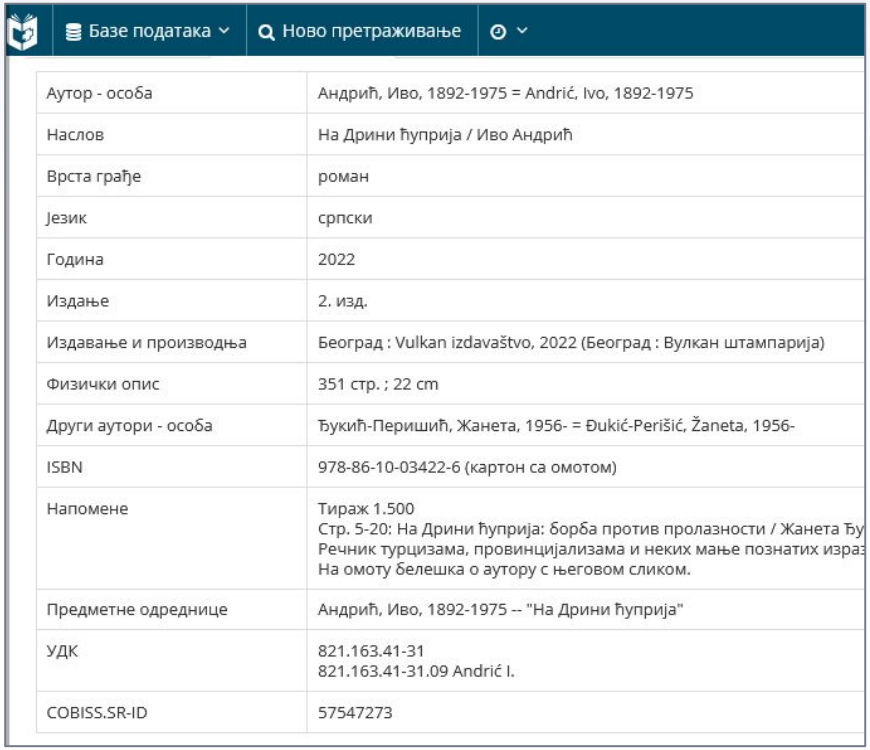
metadata

data that provides
information about other data

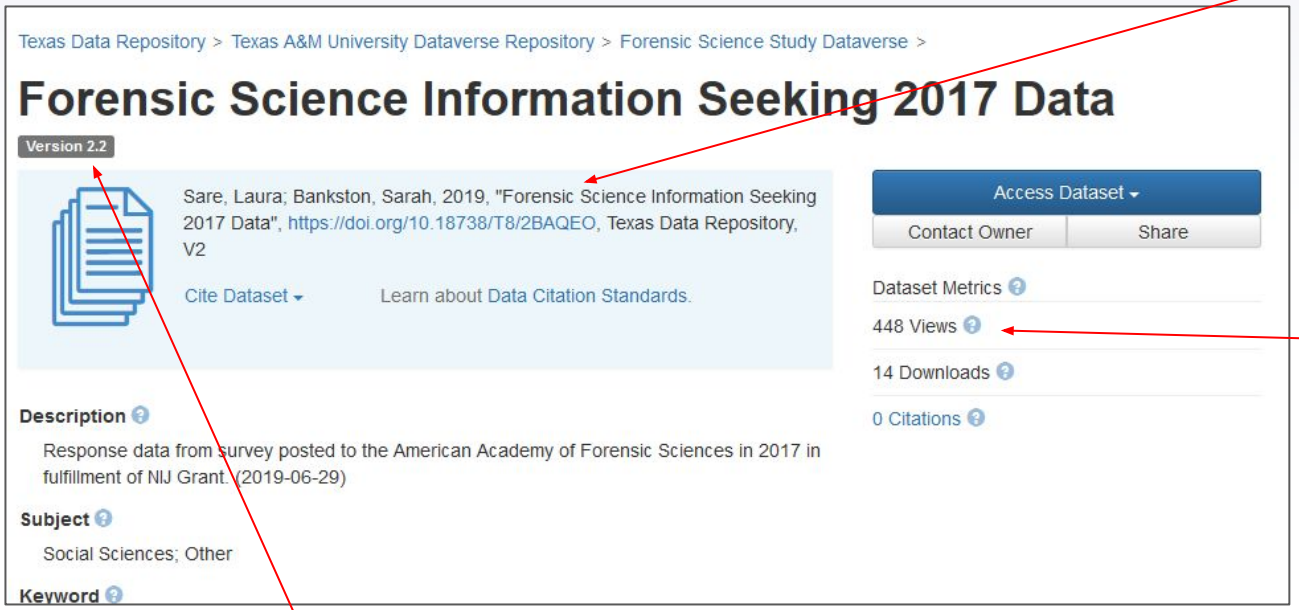
(Merriam-Webster dictionary)

Metapodaci



Аутор - особа	Андрић, Иво, 1892-1975 = Andrić, Ivo, 1892-1975
Наслов	На Дрини ћуприја / Иво Андрић
Врста грађе	роман
Језик	српски
Година	2022
Издање	2. изд.
Издавање и производња	Београд : Vulkan izdavaštvo, 2022 (Београд : Вулкан штампарија)
Физички опис	351 стр. ; 22 cm
Други аутори - особа	Ђукић-Перишић, Жанета, 1956- = Đukić-Perišić, Žaneta, 1956-
ISBN	978-86-10-03422-6 (картон са омотом)
Напомене	Тираж 1.500 Стр. 5-20: На Дрини ћуприја: борба против пролазности / Жанета Ђу Речник турцизама, провинцијализама и неких мање познатих израз На омоту белешка о аутору с његовом сликом.
Предметне одреднице	Андрић, Иво, 1892-1975 -- "На Дрини ћуприја"
УДК	821.163.41-31 821.163.41-31.09 Andrić I.
COBISS.SR-ID	57547273

Metapodaci

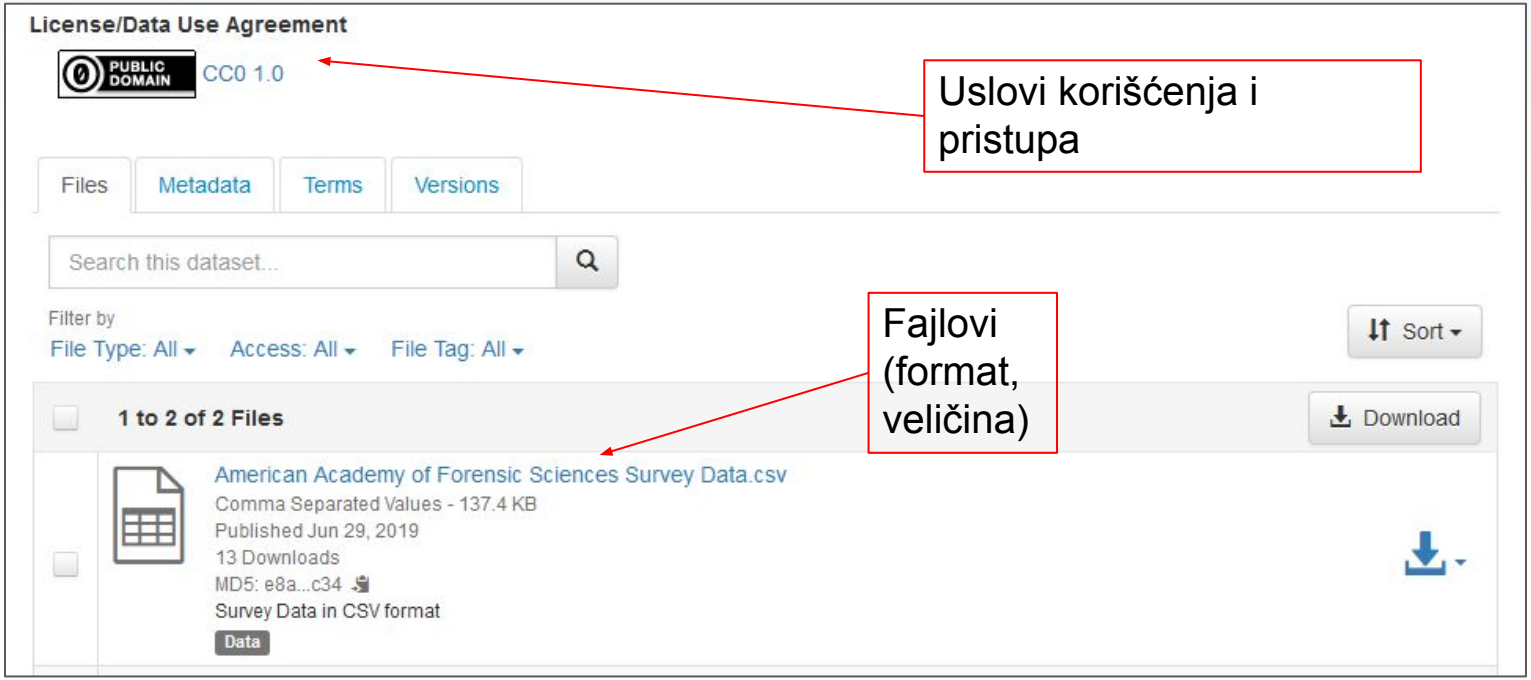


Perzistentni identifikator (DOI)

Statistika korišćenja

Verzija

Metapodaci


License/Data Use Agreement
PUBLIC DOMAIN
CC0 1.0
Uslovi korišćenja i pristupa
Files
Metadata
Terms
Versions
Search this dataset...
Filter by
File Type: All
Access: All
File Tag: All
Sort
Fajlovi (format, veličina)
1 to 2 of 2 Files
Download
American Academy of Forensic Sciences Survey Data.csv
Comma Separated Values - 137.4 KB
Published Jun 29, 2019
13 Downloads
MD5: e8a...c34
Survey Data in CSV format
Data

Metapodaci

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Dokumentacija

Sve druge informacije koje su neophodne za bolje shvatanje sadržaja i konteksta podataka.

- (elektronske) laboratorijske sveske
- *codebooks*
- softver i kod
- informacije o uređajima, kalibraciji i sl.
- readme.txt
- i sl.

Čuvanje i deljenje

Deponujte podatke u **proverene digitalne repozitorijume** za dugoročno čuvanje.

Tipovi repozitorijuma za podatke:

- tematski
- opšti
- institucionalni

Skupovi podataka se mogu publikovati i u: *Data papers*.

Čuvanje i deljenje

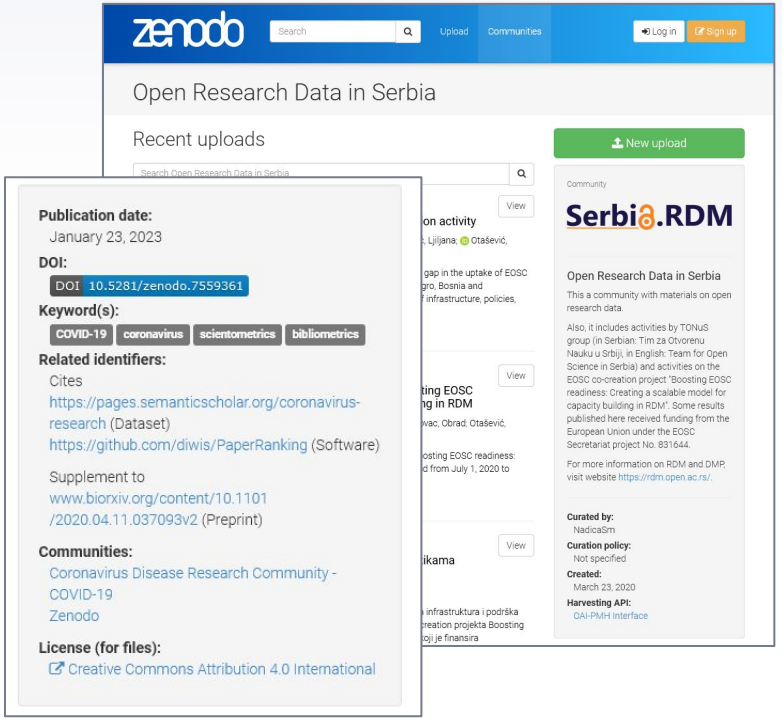
Tematski repozitorijumi

- najbolja vidljivost;
- metapodaci odgovaraju naučnoj disciplini;
- nedostatak: deponovanje može da košta;
- registar repozitorijuma: re3data.org

Čuvanje i deljenje

Opšti repozitorijumi

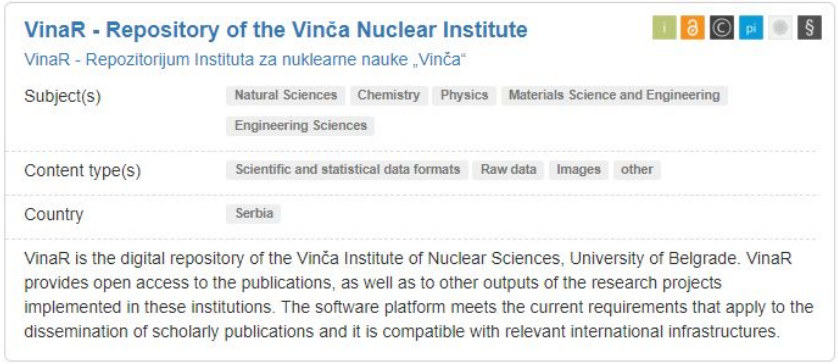
- Zotero, Figshare, OSF i sl.;
- besplatni PID (DOI);
- podržavaju razne tipove podataka;
- ne koštaju (osim za dodatne usluge)
- nedostatak: metapodaci su opšteg tipa (najčešće DataCite ili Dublin Core);



Čuvanje i deljenje

Institucionalni repozitorijumi

- VinaR je registrovan u re3data.org;
  - (uskoro i u EOSC-u)
- sigurno dugoročno čuvanje;
- nedostatak: slabija vidljivost;



FAIR principi

Findable
Accessable
Interoperable
Reusable

Mandatory Open Science practices:

responsible management of research data in line with the **FAIR principles** *of 'Findability', 'Accessibility', 'Interoperability' and 'Reusability', notably through the generalised use of data management plans, and open access to research data under the principle 'as open as possible, as closed as necessary', under the conditions required by the grant agreement*

Horizon Europe Programme Guide

FAIR

Istraživački rezultati treba da budu organizovani kako bi bili dostupni, razumljivi, i da bi se lakše delili i ponovo upotrebljavali, kako od strane drugih istraživača tako i od strane **mašina**.

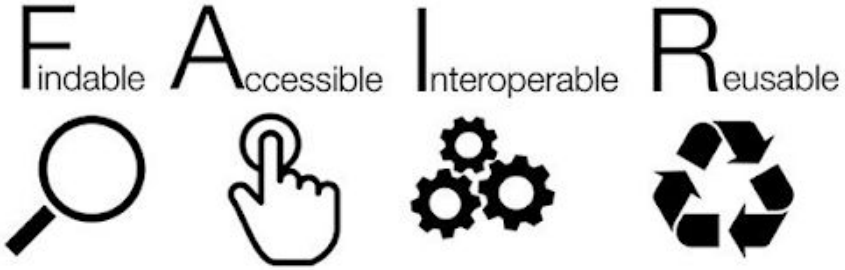


Photo by SangyaPundir under CC BY-SA

Findable

F1. (Meta)data are assigned a **globally unique** and **persistent identifier** (DOI, Handle, ARK, etc.)

F2. Data are described with **rich metadata**

F3. Metadata clearly and explicitly include the identifier of the data they describe

F4. (Meta)data are registered or indexed in a **searchable resource**

Accessable

A1. (Meta)data are retrievable by their identifier using a **standardised communications protocol**

A1.1 The protocol is open, free, and universally implementable

A1.2 The protocol allows for an authentication and authorisation procedure, where necessary

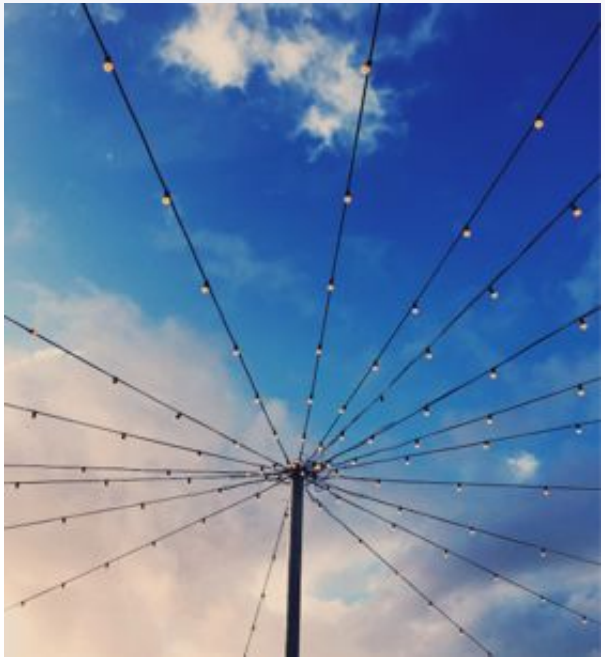
A2. **Metadata are accessible**, even when the data are no longer available

Interoperable

I1. (Meta)data use a formal, accessible, shared, and broadly applicable **language for knowledge representation**.

I2. (Meta)data use **vocabularies** that follow FAIR principles

I3. (Meta)data **include qualified references** to other (meta)data



Reusable

R1. (Meta)data are **richly described** with a plurality of accurate and relevant attributes

R1.1. (Meta)data are released with a clear and accessible **data usage license**

R1.2. (Meta)data are associated with detailed **provenance**

R1.3. (Meta)data meet domain-relevant **community standards**

Open Data

"as open as possible,
as closed as necessary"

European Commission - Horizon Europe

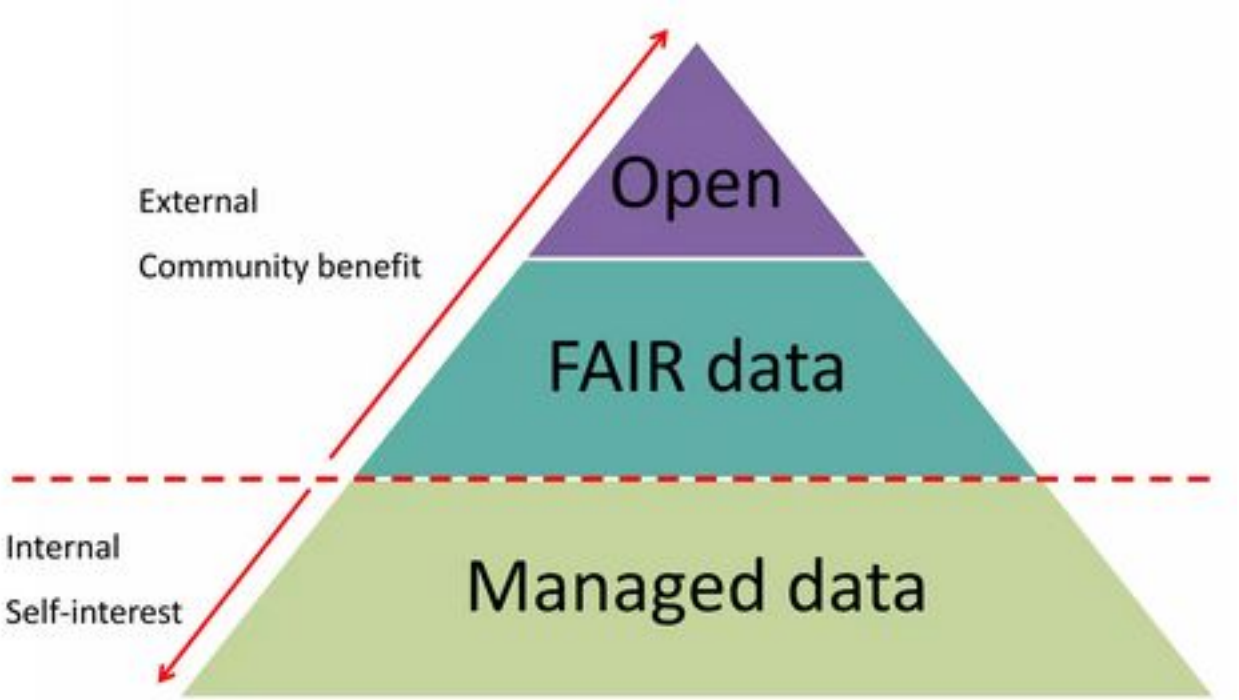
- "as soon as possible and within the deadlines set out in the DMP, **ensure open access** — via the repository — **to the deposited data**, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC0) or a licence with equivalent rights, following the principle 'as open as possible as closed as necessary', unless providing open access would in particular:
    - be against the beneficiary's legitimate interests, including regarding commercial exploitation, or
    - be contrary to any other constraints, in particular the EU competitive interests or the beneficiary's obligations under this Agreement; if open access is not provided (to some or all data), this must be justified in the DMP

- "Metadata of deposited data must be open under a CC Public Domain (CC 0) or equivalent, in line with the FAIR principles (in particular machine-actionable)..."

EU Grants - Model Grant Agreement

“

As open as possible,
as closed as necessary



Jones, S. Open, FAIR data and RDM. 2018.
https://www.slideshare.net/sjDCC/open-fair-data-and-rdm.
Available under Creative Commons Attribution License.

Zaključak

Upravljajte podacima na odgovoran način i u skladu sa FAIR principima.

- pripremite Data Management Plan (DMP);
- deponujte podatke u repozitorijum;
- omogućite informacije o svim drugim rezultatima, alatima, instrumentima i sl. preko tog istog repozitorijuma.

Hvala na pažnji

Obrad Vučkovac

INN "Vinča" - Biblioteka

Univerzitet u Beogradu

Prezentacija: biblioteka.vin.bg.ac.rs

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