NTK

50°6'14,083"N, 14°23'26.365"E
Národní technická knihovna
National Library of Technology
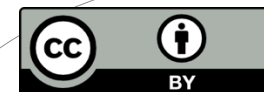
Czech Academic and Research Discovery Services

CARDS

National Catalogue of Repositories and Controlled Vocabularies

Alexandr Kuchynka

National Library of Technology, Prague
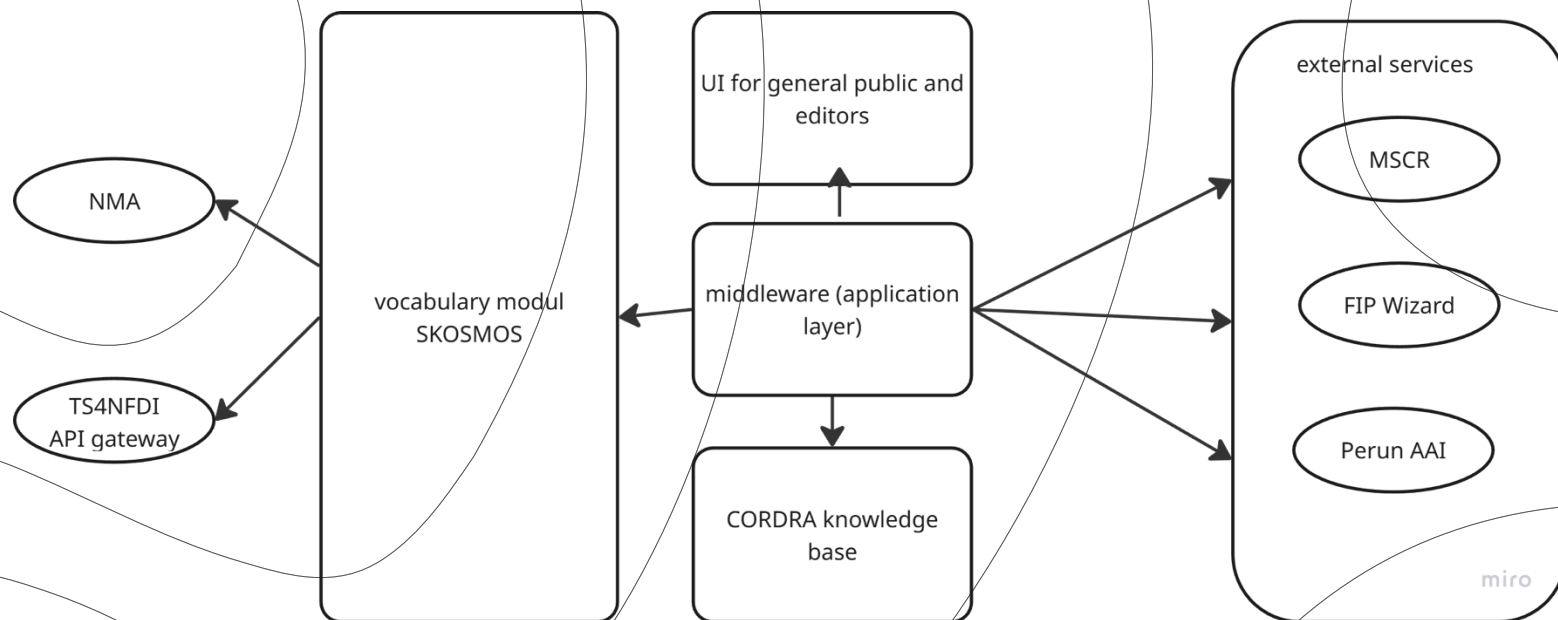
EOSC Conference 2025, Ostrava

National Catalogue of Repositories

- unified, structured place for information about research data repositories from NRP

- developed by the National Library of Technology, Prague as a part of the CARDS project

- modular architecture with open-source software serving as its backbone

NKR architecture

NMA

vocabulary modul SKOSMOS

TS4NFDI API gateway

UI for general public and editors

middleware (application layer)

CORDRA knowledge base

external services

MSCR

FIP Wizard

Perun AAI

miro

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NKR architecture

- repository module
  - Cordra (open-source): central datastore for repository-related digital objects
  - middleware: contains the application logic
  - UI for general public access and authorized editors ("let the button make it happen" in a context of complex workflow)

- controlled vocabularies browser: SKOSMOS (open-source)

NKR metadata model

- documentation at https://github.com/techlib/NKR-schema/wiki

- currently in version v0.2

- proposed changes should be submitted through the github issues page

NKR metadata model

github.com/techlib/NKR-schema/wiki/Repository-object

techlib / NKR-schema

Code   Issues 12   Pull requests   Discussions   Actions   Projects   Wiki   Security

Repository object

akastoss edited this page yesterday · 6 revisions

id	name	data type	cardinality	
id	Repository identifier	string	1..1	Handle identifier of th
repositoryName	Repository name	string	1..1	Official repository nar
additionalName	Alternative repository names	string	0..n	Alternative repository

NKR metadata model

- schemas for all digital objects can be viewed in the NKR demo environment: https://nkr.repo.cz/#schemas

- users can visualize the schema as UI preview or JSON

- now we have schemas for the Repository object and three related objects (Organization, License, MetadataSchema)

- further object types will be added over time

NKR demo

Object Type: Repository

Type: Schema

Preview UI

```
1  {
2    "type": "object",
3    "required": [
4      "repositoryName"
5    ],
6    "properties": {
7      "id": {
8        "type": "string",
9        "title": "Repository identifier",
10       "description": "Handle identifier of the NKR record (autogenerated)",
```

NKR demo

Object Type: Repository

Type: Schema

Object Id: example/id

Repository identifier

Auto generated field handle

Handle identifier of the NKR record (autogenerated)

Repository name *
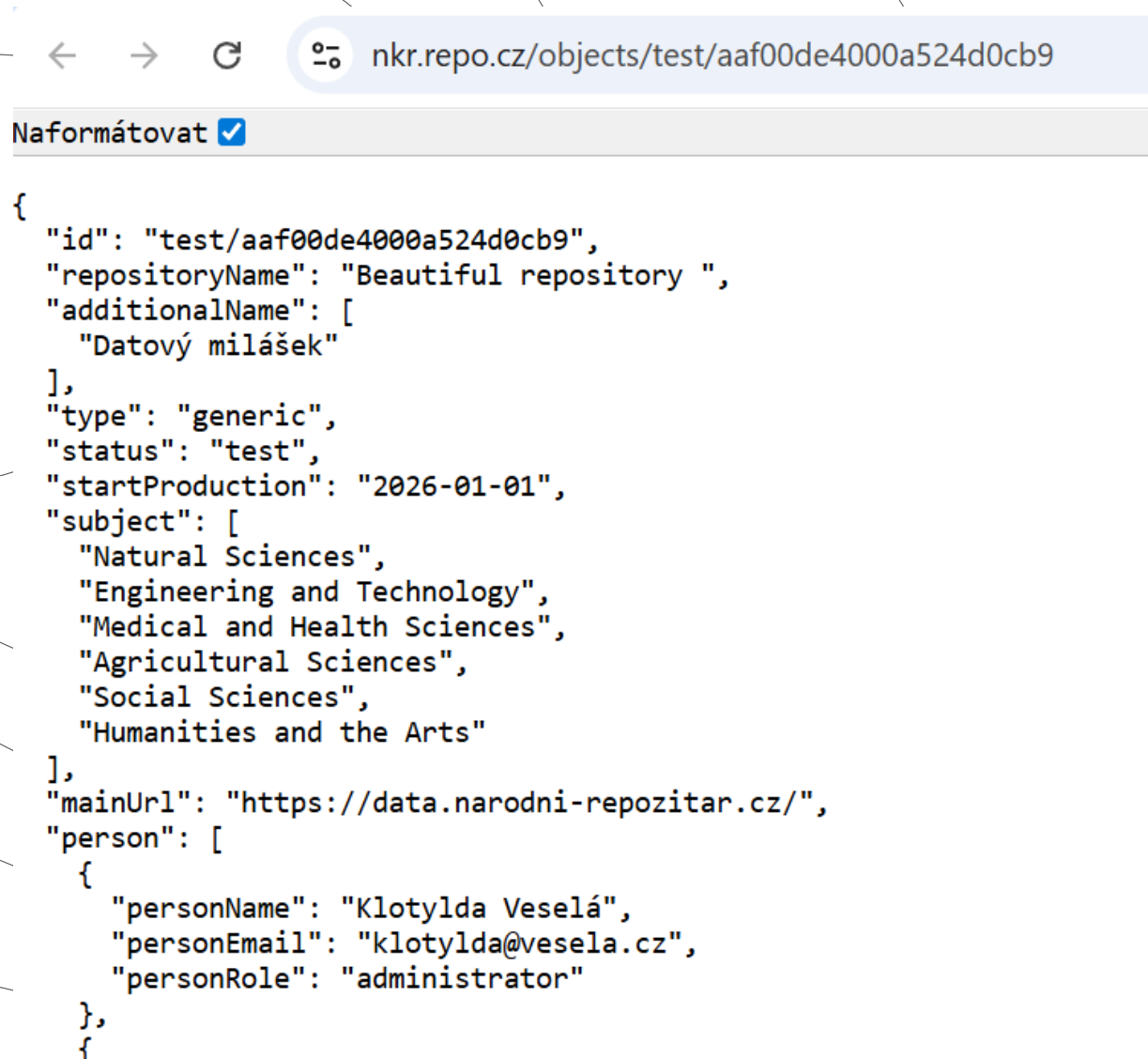
Official repository name (usually in the original language).

Alternative repository names

Alternative repository name or acronym of the official repository name.

+ Name

NKR demo

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National Catalogue of Repositories - Test Version

Get started   All Objects   Show Only ▾   Types ▾

.

« 1 2 3 4 5 6 7 8 »

Showing 1 to 10 of 80 results

License
◎ test/3229609e15436ec51bcf
📄 Type: Schema

test publication
◎ test/e99d1b49c7c2cc25f73e
📄 Type: License

TAPR Open Hardware License v1.0
◎ test/bdcf2eccd3f6063c9af6
📄 Type: License

NKR demo

NKR demo

Naformátovat ☑

```
{
  "id": "test/aaf00de4000a524d0cb9",
  "repositoryName": "Beautiful repository ",
  "additionalName": [
    "Datový milášek"
  ],
  "type": "generic",
  "status": "test",
  "startProduction": "2026-01-01",
  "subject": [
    "Natural Sciences",
    "Engineering and Technology",
    "Medical and Health Sciences",
    "Agricultural Sciences",
    "Social Sciences",
    "Humanities and the Arts"
  ],
  "mainUrl": "https://data.narodni-repozitar.cz/",
  "person": [
    {
      "personName": "Klotylda Veselá",
      "personEmail": "klotylda@vesela.cz",
      "personRole": "administrator"
    },
    {
```

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Next step: extended demo (Adam)

- limitations of this demo (users cannot really create and save a record, cannot see relationships between objects etc)

- a registration page will be set up for interested users to request a test account

- the records will be purely fictitious with test handle prefix assigned; they will be deleted at the end of the testing period

- expected January 2026

Next step: real data for pilot repositories (Boris)

- moving from test entries to production records for the pilot repositories

- identity and access management provided by the e-infra Perun service

- expected 1Q 2026

Vocabulary module: demo

- powered by Skosmos 2

- Skosmos instance for the NKR has not been deployed yet

- running instance at vocabs.ccmm.cz gives a good preview of the expected functionality

Vocabulary module: demo

Agent role

Content language   English ▾

Alphabetical	Hierarchy

C

Contact Person
Contributor
Creator

D

Data Collector
Data Curator
Data Manager
Distributor

E

Editor

H

Hosting Institution

O

Contributor > Contact Person

PREFERRED TERM: **Contact Person**

DEFINITION: Person with knowledge of how to access, troubleshoot, or othe... related to the resource. May also be the "Point of Contact" in ar... that controls access to the resource, if that organisation is diffe... Publisher, Distributor, and Data Manager.

BROADER CONCEPT: Contributor

IN OTHER LANGUAGES: **Kontaktní osoba**   Czech

URI: https://vocabs.ccmm.cz/registry/codelist/AgentRole/Contribut... n

DOWNLOAD THIS CONCEPT: RDF/XML TURTLE JSON-LD

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SKOS standard

- SKOS is a W3C standard for representing controlled vocabularies/ontologies in a simple, machine-readable way

- RDF-based standard

- different serialization formats: turtle, rdf/xml, json-ld

- all vocabularies registered in the NKR (and visualized in Skosmos) have to follow this standard

Skosify a vocabulary

- assigning a URI to every concept

- representing each term as a skos:Concept

- adding labels such as skos:prefLabel, skos:altLabel, skos:hiddenLabel

- including definitions using skos:definition

- creating hierarchical relationships (skos:broader, skos:narrower)

Skosify a vocabulary

- if needed, aligning concepts across vocabularies (eg. skos:exactMatch)

- providing metadata for the vocabulary as a whole via skos:ConceptScheme

- storing it in a standard RDF serialization (Turtle, JSON-LD, RDF/XML)

- identify a vocabulary

- skosify it

- a clear pipeline needs to be defined between where the vocabulary is hosted (GitHub, local storage, etc.), how it is ingested into the repository software, and how it is published via the NKR

Issues to be addressed

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- we are inviting the repo builders who deal with vocabularies to share their use cases and experience with the NKR team at the NTK

- nkr@techlib.cz
- alexandr.kuchynka@techlib.cz

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**Czech Academic and Research
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Thank you for your attention.