NFDI×CS

Research Data Management in Computer Science
State and Perspectives of NFDIxCS

Challenges of
Digitalization of Science (in CS)

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Scientific Evidence, Credibility of Science
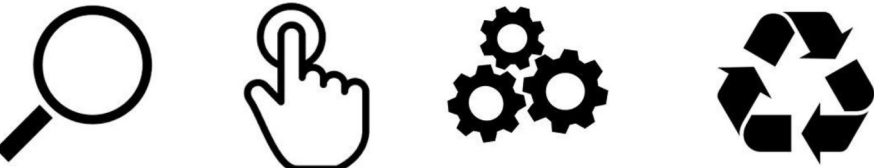
Research Data

No Data without Software

Research Software

Publications

Motivation Research Data and Software Management

Goal: Open, Trustworthy, Reproducible Research

Findable **A**ccessible **I**nteroperable **R**eusable

FAIR Research Data
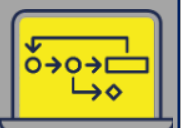
FAIR Research Software

Computer Science Research Data

Broad Versatile Empirical Cross-Cutting

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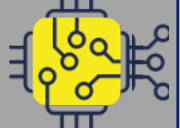| 409-01 Theoretical Computer Science | 409-02 Software Engineering / Programming Languages | 409-03 Security & Dependability | 409-04 Operating, Communication, Database & Distribute Systems | 409-05 Visual Computing | 409-06 Business Information Systems | 409-07 Computer Architecture & Embedded Systems | 409-08 Massively Parallel & Data Intensive Systems | 409-09 Artificial Intelligence & Machine Learning | 409-10 Interactive Systems |

Current State of the project (17 partners, additional participants)

- Funding approved for 5 years,

- Project to build the first version of the infrastructure started March 2023

A Clear Need for an Appropriate Abstraction
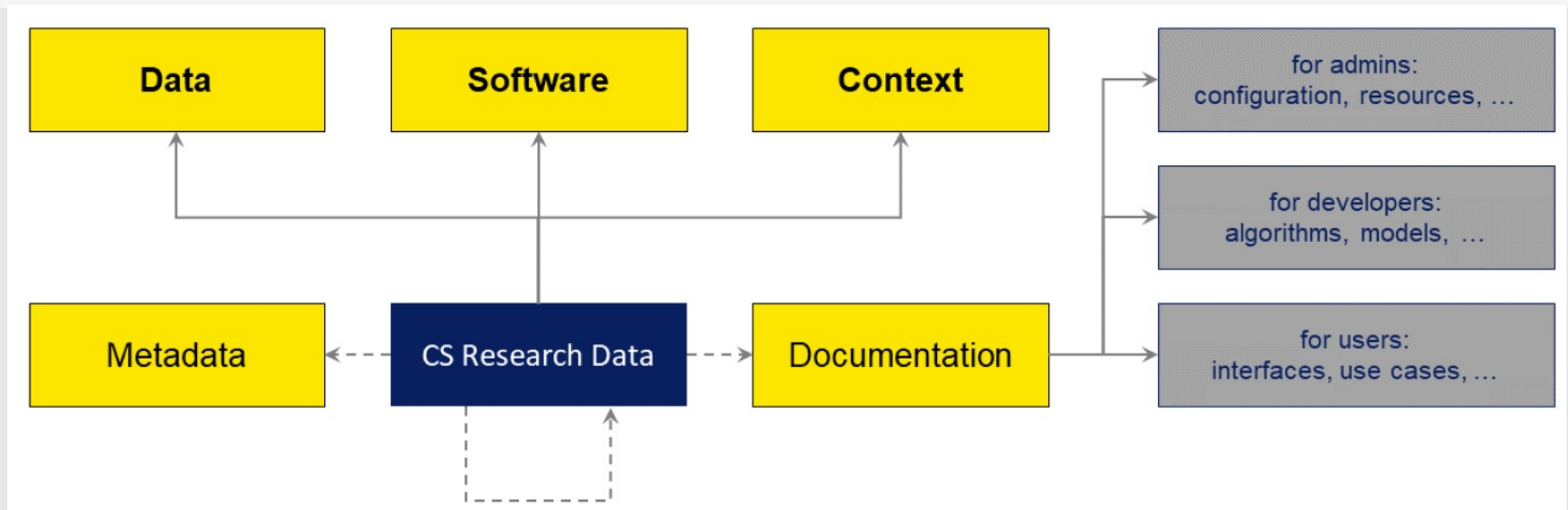
Important aspect: long term storage for an extended period of time (≥ 10y)

Research Data Management Container (RDMC)

- Central Hypothesis of NFDIxCS:

  - Research Data and Research Software are not the same but it is linked together with its research context

- Solution Concept:

  - Design a **Research Data Management Containers (RDMC)** as a time-capsule for research data and software

    - Digital, referenceable object

    - Describable with Metadata

    - Manage access and workflow

  - **Additionally design and implement a hosting platform RDMCs**

Access Control

Workflows

Filter & Transformation

Context

Software
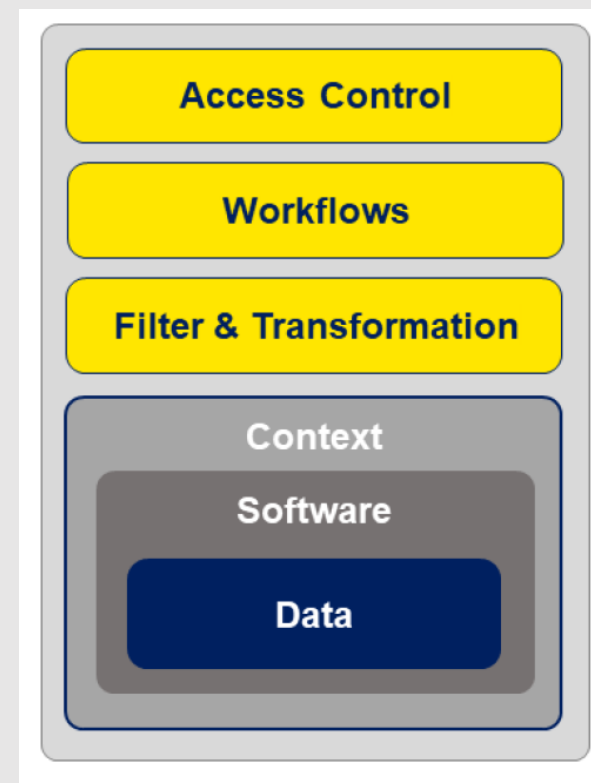
Data

Connecting Active Containers:
Integration with Services and Infrastructure

- Interact with platform for e.g. artifact review processes

- Use metadata to connect to knowledge graphs

- Integrate quality metrics by providing guarantee levels:

  - Long-term availability

  - Meta Data Quality

  - Creation Process

  - Privacy Options (GDPR, IPR)

- Create an execution environment to run the software with its data
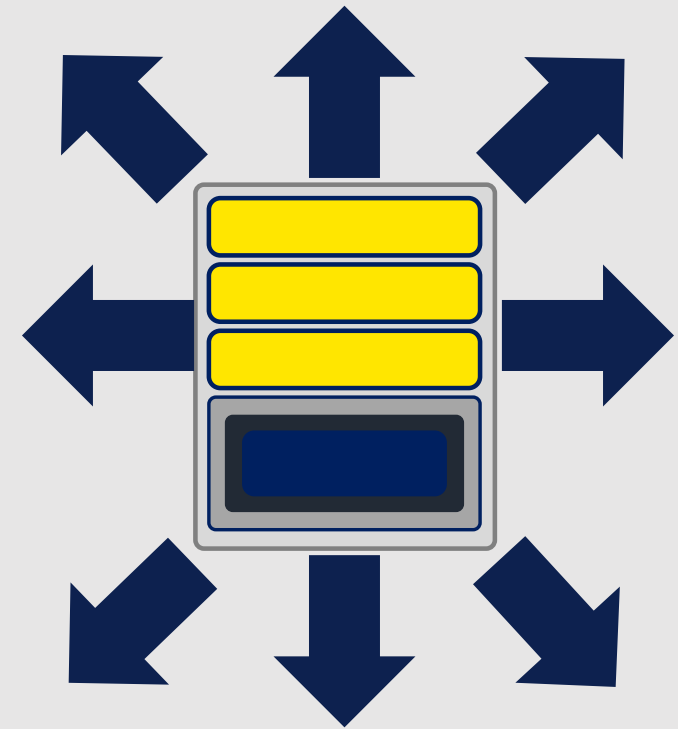
Key Questions / Areas of Concern for Your Sub-Discipline(s)

NFDI CS

- Type of Research Data

- Related Meta Data

- Processes (Quality Criteria, …) e.g. think of artefact evaluation

- Publication Processes

➢ Community inclusion via GI and other associations

Perspectives: Transformation to Operation

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- Approaching end of project year three

- In discussion: recommendation of the Wissenschaftsrat evaluation of NFDI as a whole

- Upcoming Transformation from project to operation

- Participation in the community processes (including storage)

- Further outreach

    - Open Science … associations at national and international level (IFIP, Informatics Europe,…)

    - Integration into EOSC

Looking forward to meet you …

            visit nfdixcs.org , nfdixcs.org/helpdesk ,

                    ci.rdmc.nfdixcs.org/

Thank you for your attention