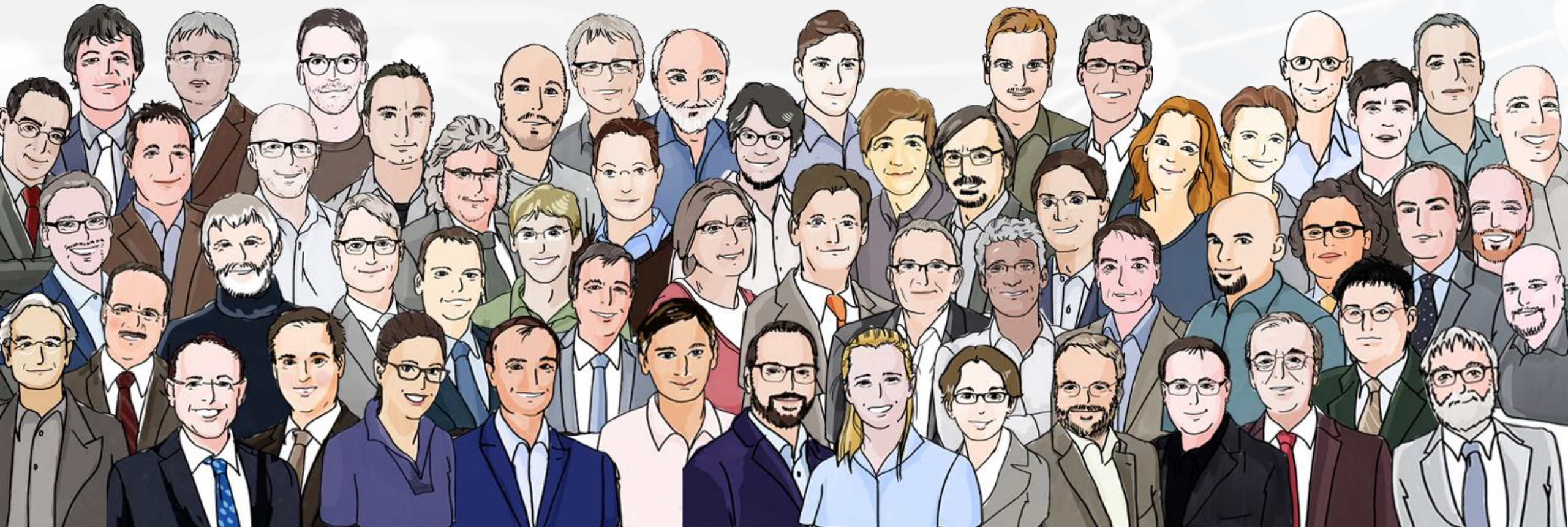




NFDI for and with Computer Science

Kick-Off Fachgruppe „Research Software Engineering“ der GI



NFDIxCS Mission Statement

- Discussion and standardization of CS research data formats, metadata formats, and semantics
- Implementation of the related research data management infrastructure, tools and services:
 - to promote the implementation of the FAIR Data Principles in the CS community for research data as well as software artifacts,
 - to simplify the citability of software and CS data
 - to modernize the publication processes and culture in both CS and its applications
- Support all subdisciplines of the CS community in handling of their research data
- Invoke data sets from other disciplines to further develop genuine CS (research) methods
- Share experience and knowledge of CS (system architectures, processes, standards for interoperability, data-oriented scientific publishing, communication systems, etc.) with others



Consortium and Services

- balance of different interest groups:
 - research
(quick response to heterogenous and dynamic requirements)
 - operations
(stable, safe, efficient and maintainable infrastructure)
- disciplinary expertise + powerful tools
from different perspectives
- re-use, adaption and connection of existing services
as far as possible
- high degree of automation for sustainable operation



FAIR DO: Couple Data and Context

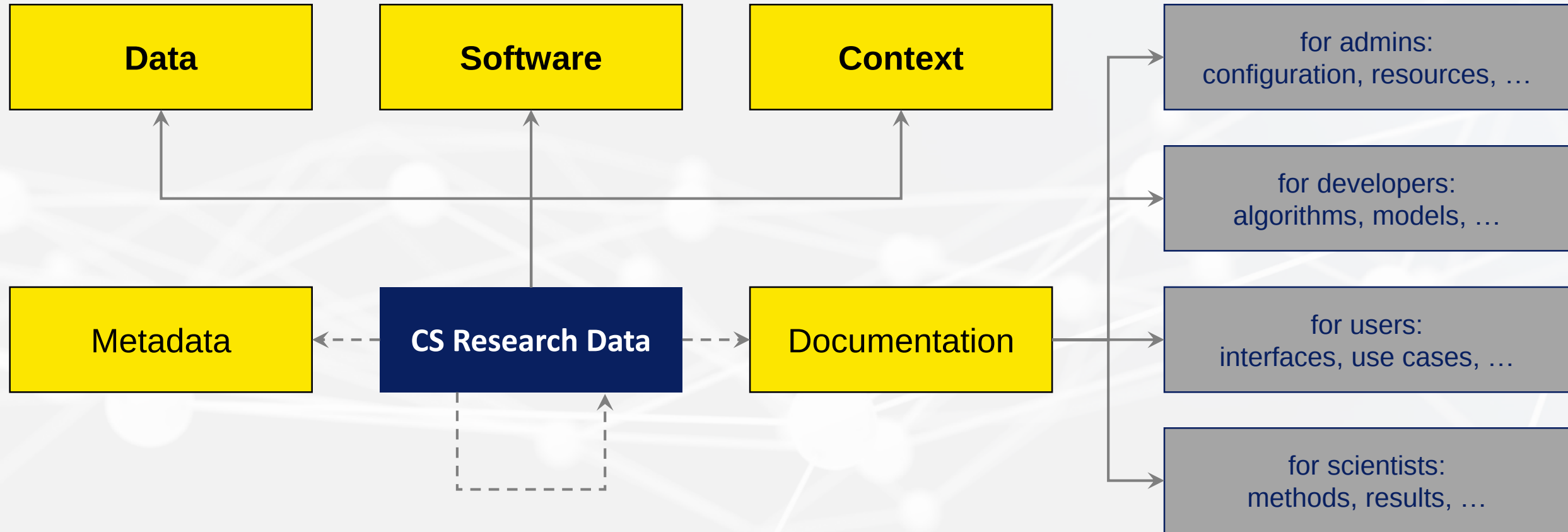
The persistent encapsulation of data and different types of metadata into such a knowledge unit should significantly **improve the level of trust** with which it can be understood across disciplines and modes of sharing. For such a transformation be achieved, it is essential to employ a set of robust conceptual and technological models that enable **sharing and reuse of data-in-context**.

Smedt, K. de; Koureas, D.; Wittenburg, P.: FAIR Digital Objects for Science: From Data Pieces to Actionable Knowledge Units. Publications 2/8, p. 21, 2020.

DOI: 10.3390/publications8020021

CS Reseach Data $\triangleq$ Software

Research Data in Computer Science



Stage 1: Prototype and implement Research Data Management Container

Data

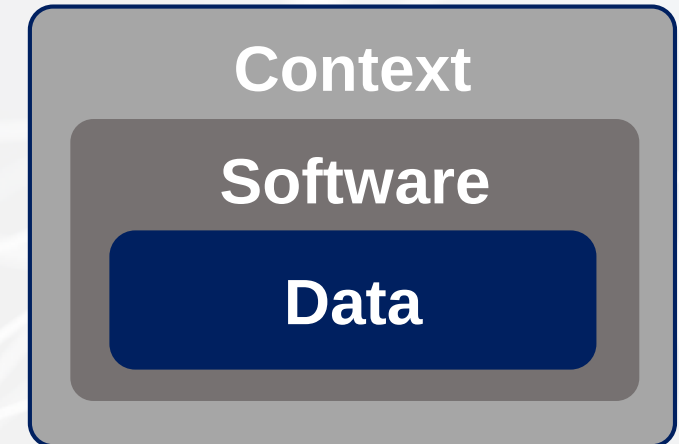
Unstructured, Semi-Structure, Strongly Structured

Software

Formal Models, Scripts, Web/Microservices, ...

Context

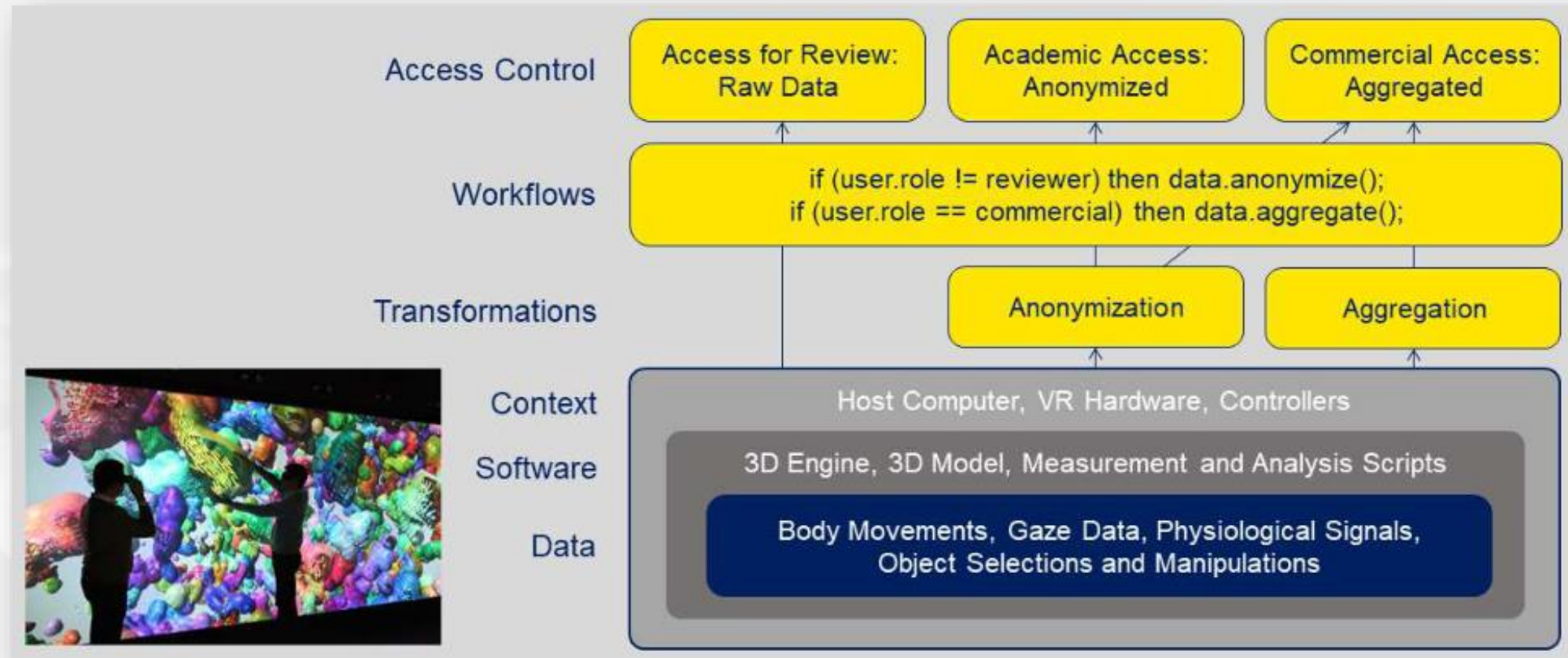
Operating Systems, Programming models & runtime, hardware...



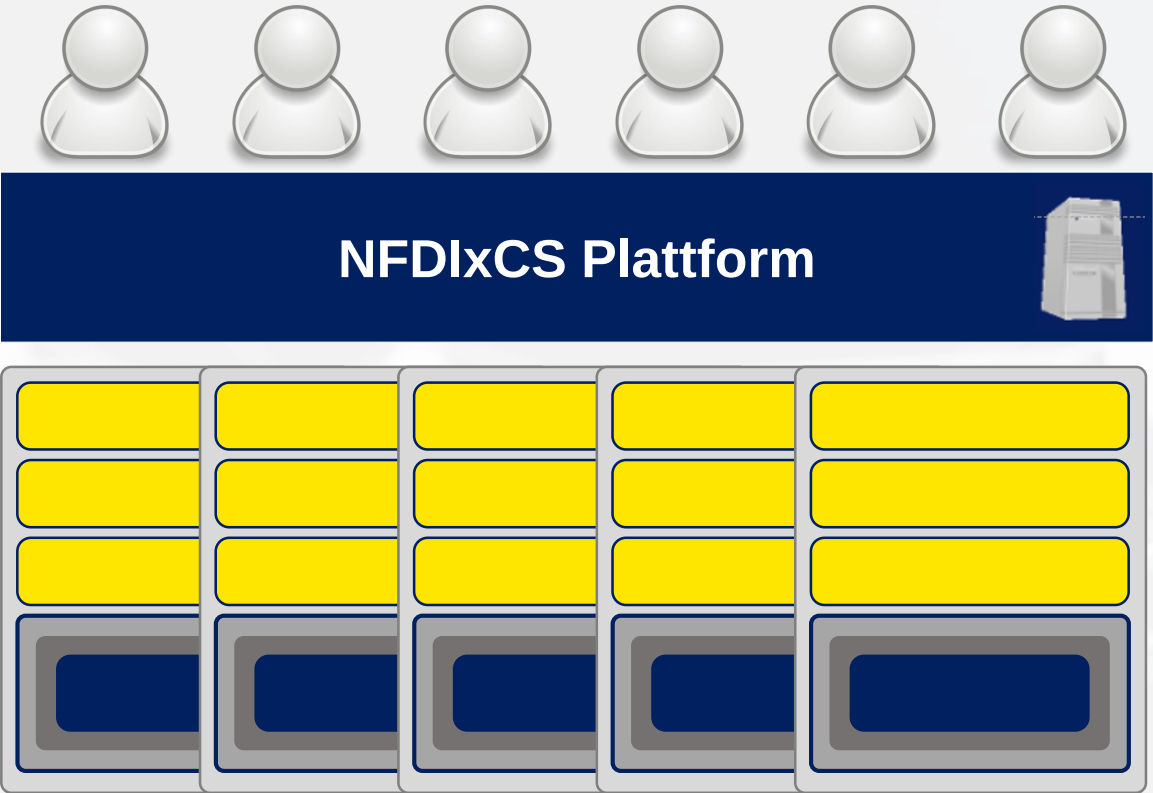
Stage 2: Container Management Layers



Example of an RDMC

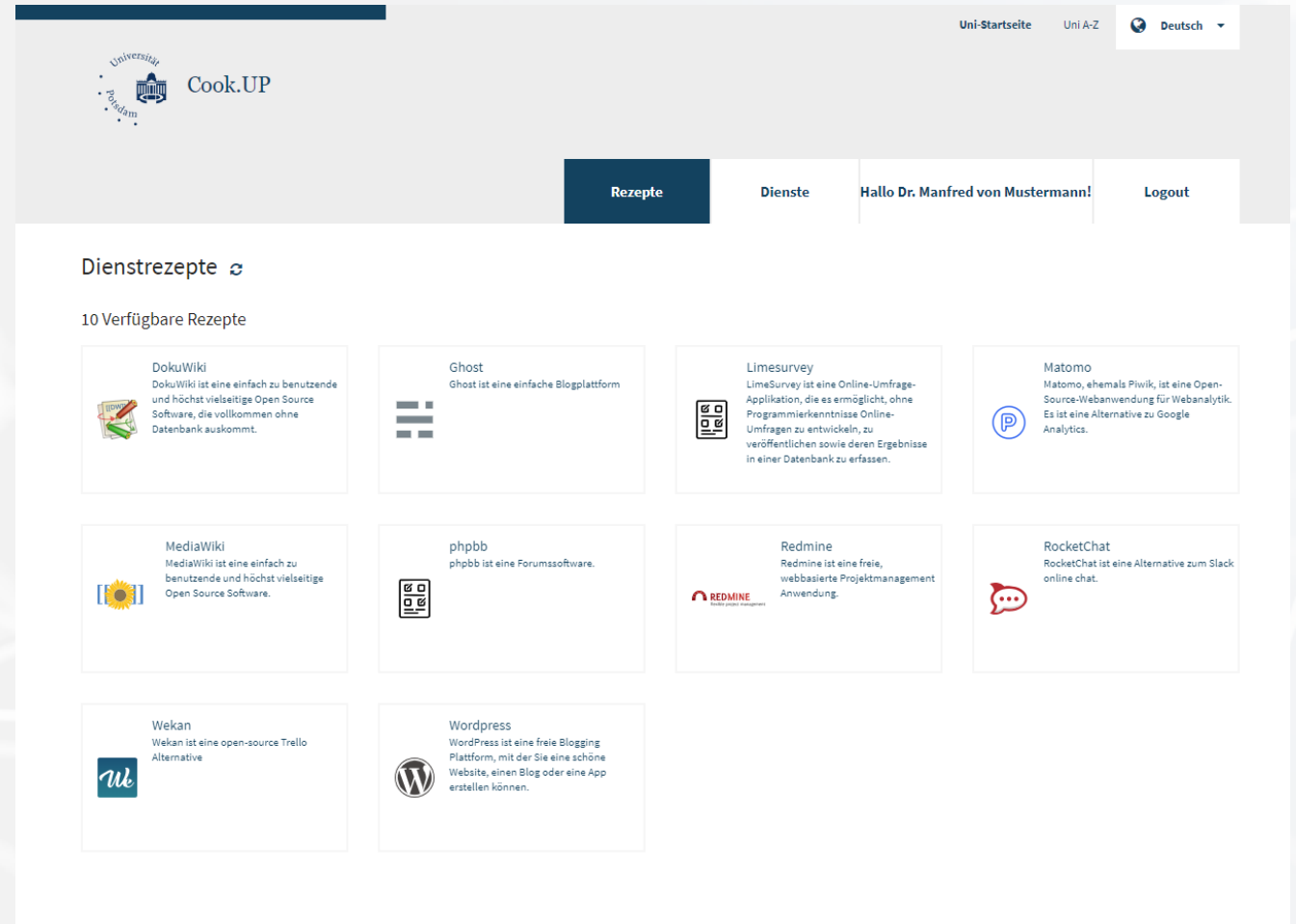
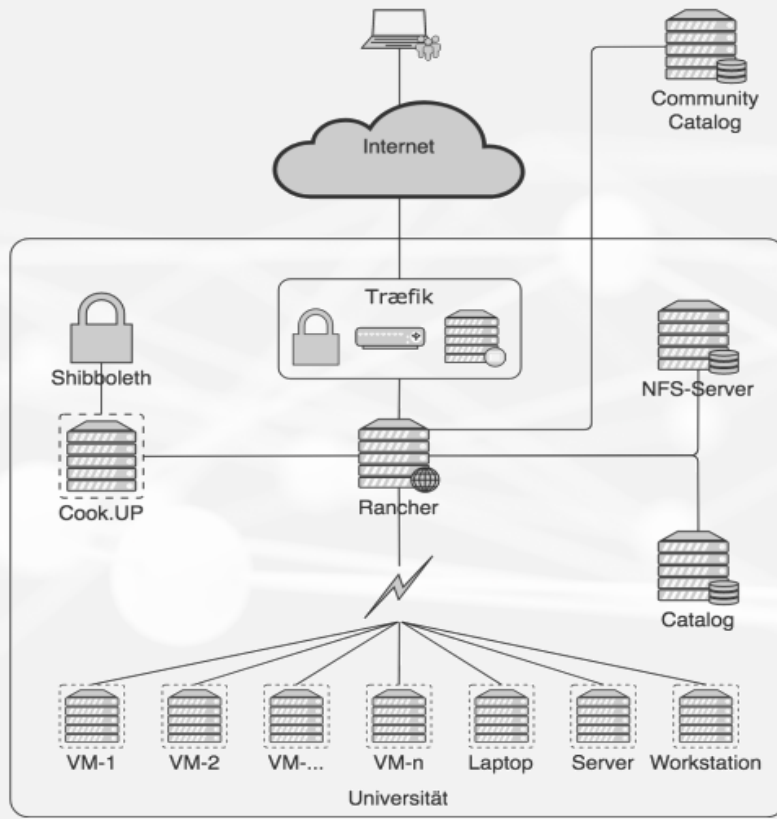


Stage 3: Ready-to-use Plattform

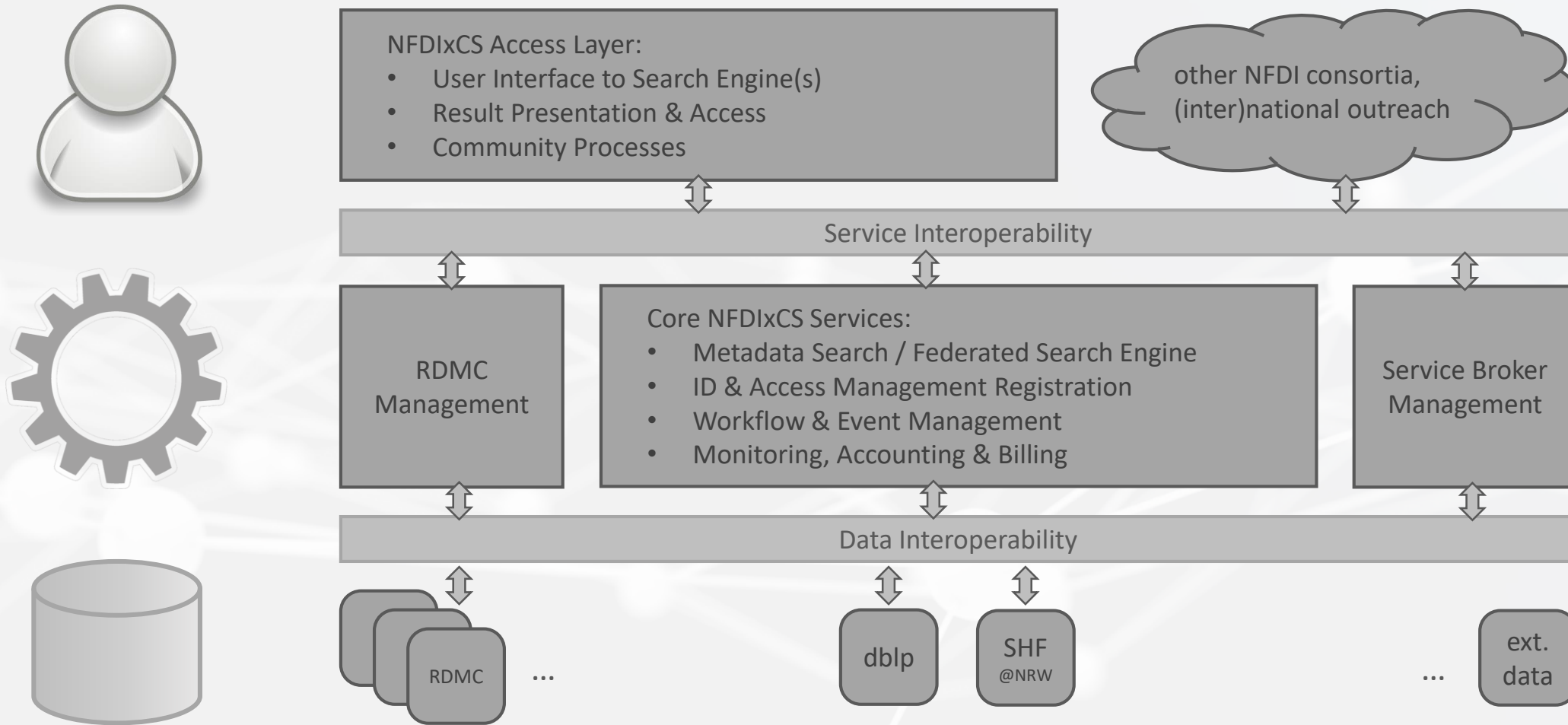


Example: Docker / Rancher Infrastructure

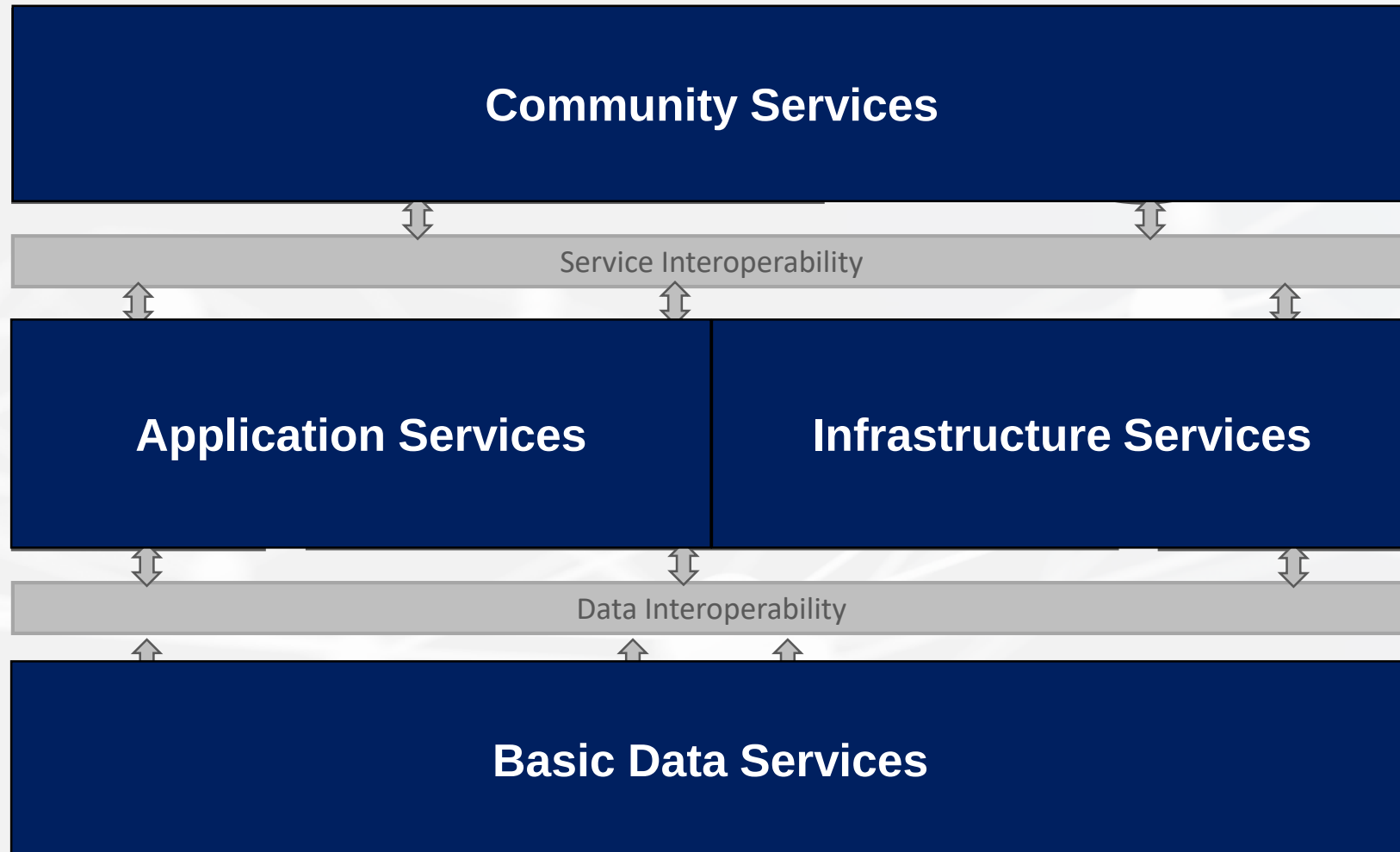
Treat your software like cattle, not pets!



NFDIxCs Architektur



NFDIxCS Layers of Task Areas



Mehr Informationen

NFDIxCs.org

Prof. Dr. Michael Goedicke (Universität Duisburg-Essen)
Sprecher
michael.goedicke@paluno.uni-due.de

Prof. Dr. Ulrike Lucke (Universität Potsdam)
stellvertretende Sprecherin
ulrike.lucke@uni-potsdam.de

Vortrag von

Jan Bernoth (Universität Potsdam)
Mitarbeit NFDIxCs
jan.bernoth@uni-potsdam.de

