



Session: Towards Implementations of Materials and Manufacturing Commons: Participants' Use-Cases

Data Structures and Tools for FAIR Synthesis data

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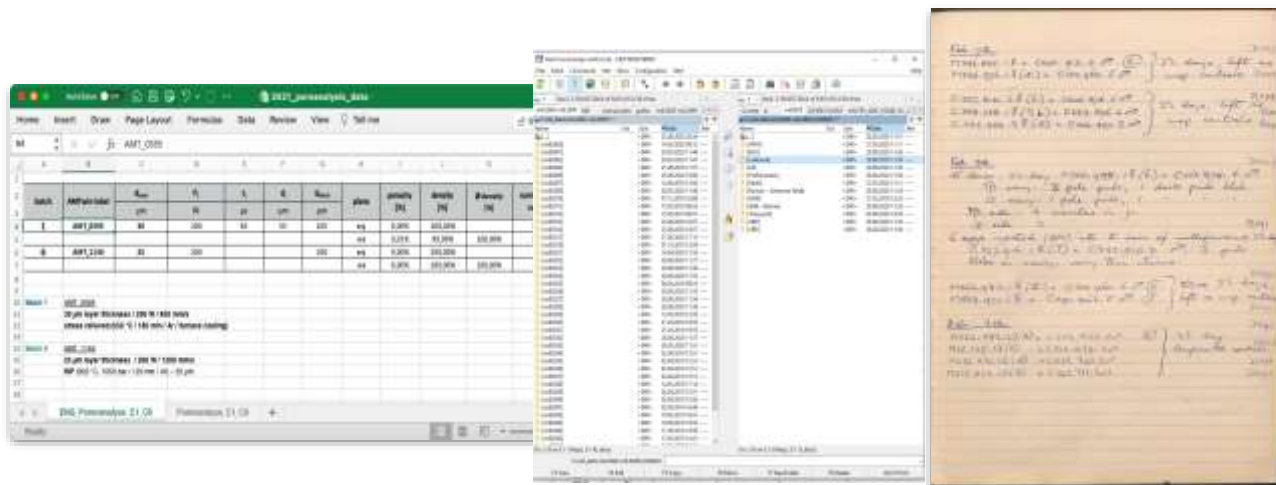
IKZ Berlin, Max-Born-Straße 2, 12489 Berlin

OntoCommons Workshop, April 4th-6th 2023, Fraunhofer Forum Berlin

Towards Materials and Manufacturing Commons - the enablers Digital Marketplaces, FAIR Principles and Ontologies

Use-case Introduction

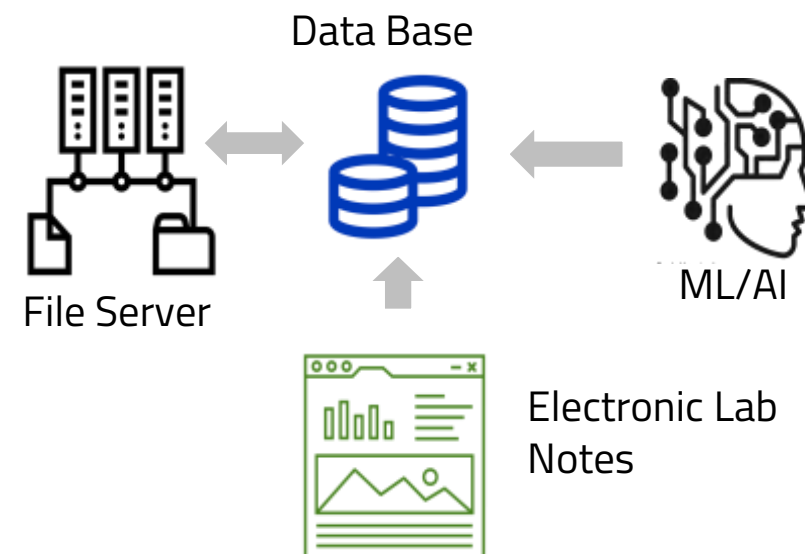
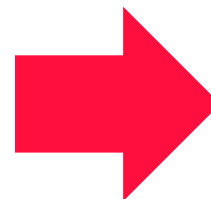
- * **FAIRmat** (NFDI Consortium): FAIR federated data infrastructure for solid state physics → **FAIR synthesis data**
- * **From** unstructured data, no standards, no data sharing culture, no data skills...
- * ...**To** structured data → machine readable + shareable → **FAIR**



Spreadsheet Files

File Servers

Lab Notes

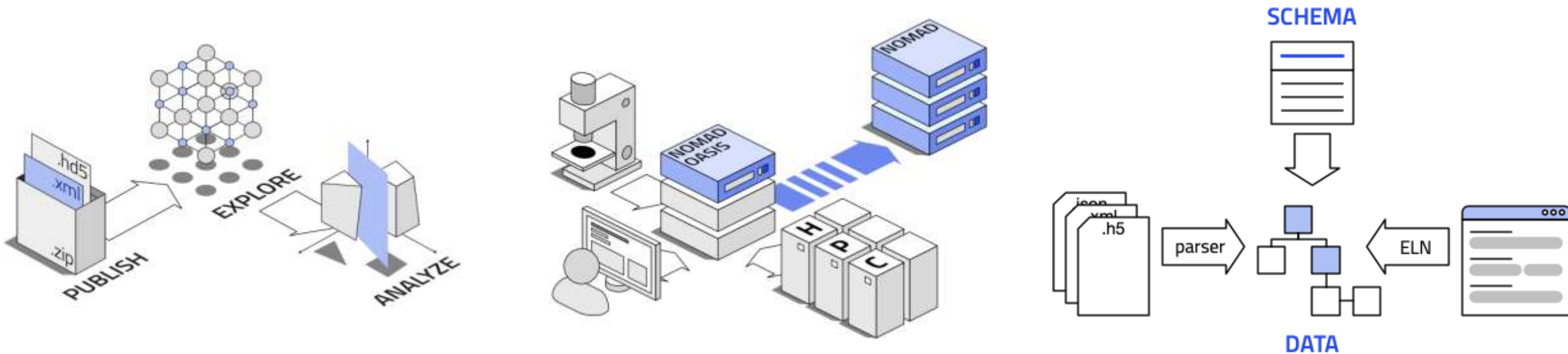


Benefits and Gaps



<https://nomad-lab.eu/>

a web-based software for FAIR research data management in materials science:



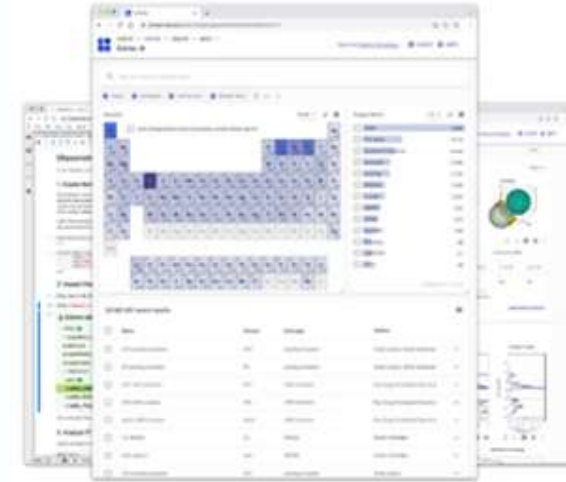
→ Supports structured data

→ Bottom up approach: input from users, support of community standards

Future Development and Challenges

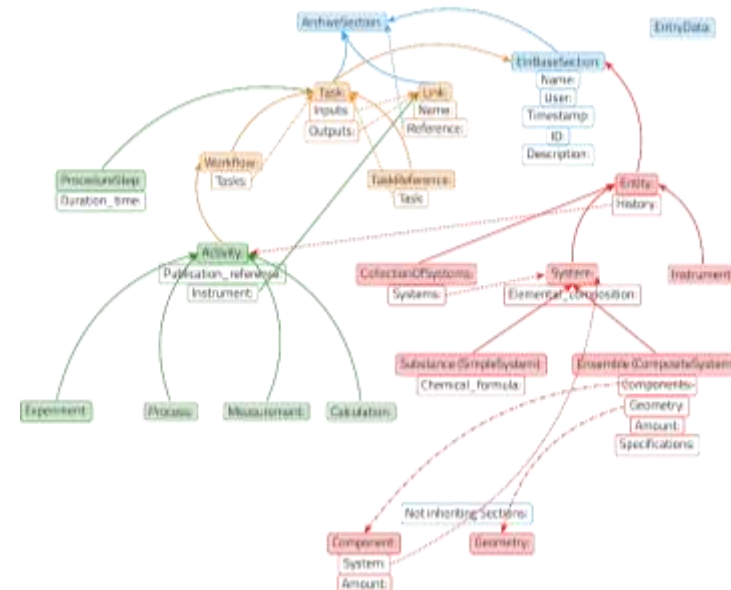
Towards a Standard / an Ontology

* **NOMAD** → platform/tool for FAIR data → fast implementation of our use cases/data structures



* **Data modelling** for synthesis and beyond, our steps:

1. Flexible schema and base classes
 2. Composing application definitions
 3. Linking multiple archive files
 4. Workflows
 5. Base class hierarchy
- **an ontology???**





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www.fairmat-nfdi.eu

<https://nomad-lab.eu>

<https://github.com/FAIRmatNFDI/AreaA>

[-data modeling and schemas](#)



OntoCommons “Ontology-driven data documentation for Industry Commons” has received funding from the European Union’s Horizon Programme call H2020 -NMBP-TO-IND-2020-singlestage, Grant Agreement number 862136