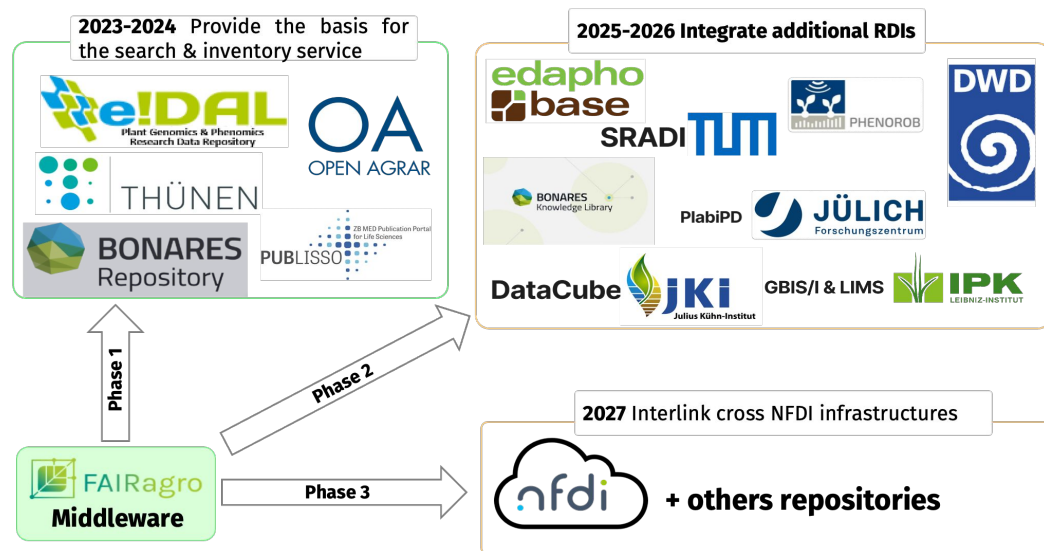


FAIRagro Middleware - A comprehensive solution for Interoperability within Agronomy & NFDI

June 17, 2024 - Daniel Arend (IPK Gatersleben, Measure 4.2)

Measure 4.2: Network of federated Research Data Infrastructures

- “middleware” → interoperable, scalable & federated Research Data Infrastructure (RDI) for agrosystems
- link research data repositories & databases
- technical requirements defined by consumers (SciWIn & Search-Portal) & Use Cases
 - collect & exchange technical/semantic metadata
 - provide data access via FDOs
 - share technical quality metrics
 - access sensitive data & cross NFDI AAI
- organisational requirements
 - loosely coupled federation of RDIs
 - guarantee operational autonomy of RDIs



middleware $\hat{=}$ technical backbone of the FAIRagro provided services & products

Progress

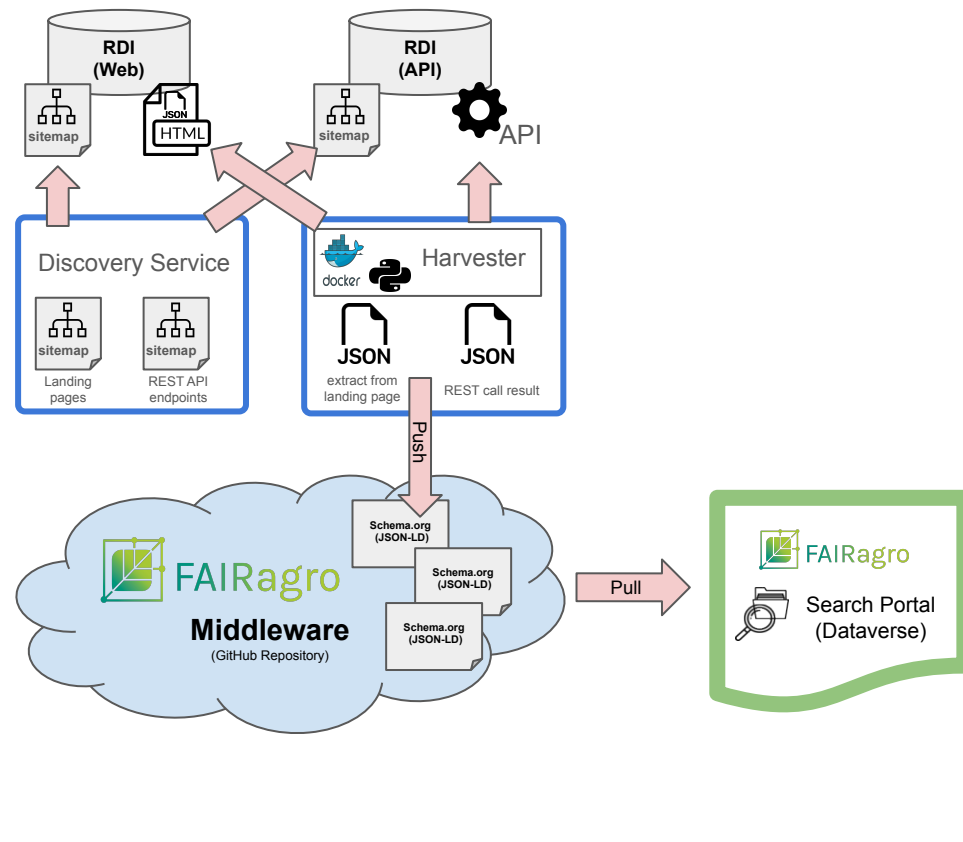
- review of RDIs & interviews with institutional hosts
- analyse existing middleware concepts & technologies
- onboarding process (virtual & on-site) between UCs & technical measures
- retreat event to sum-up the results & formulate roadmap
→ decided for two phase implementation

1. Basic Middleware

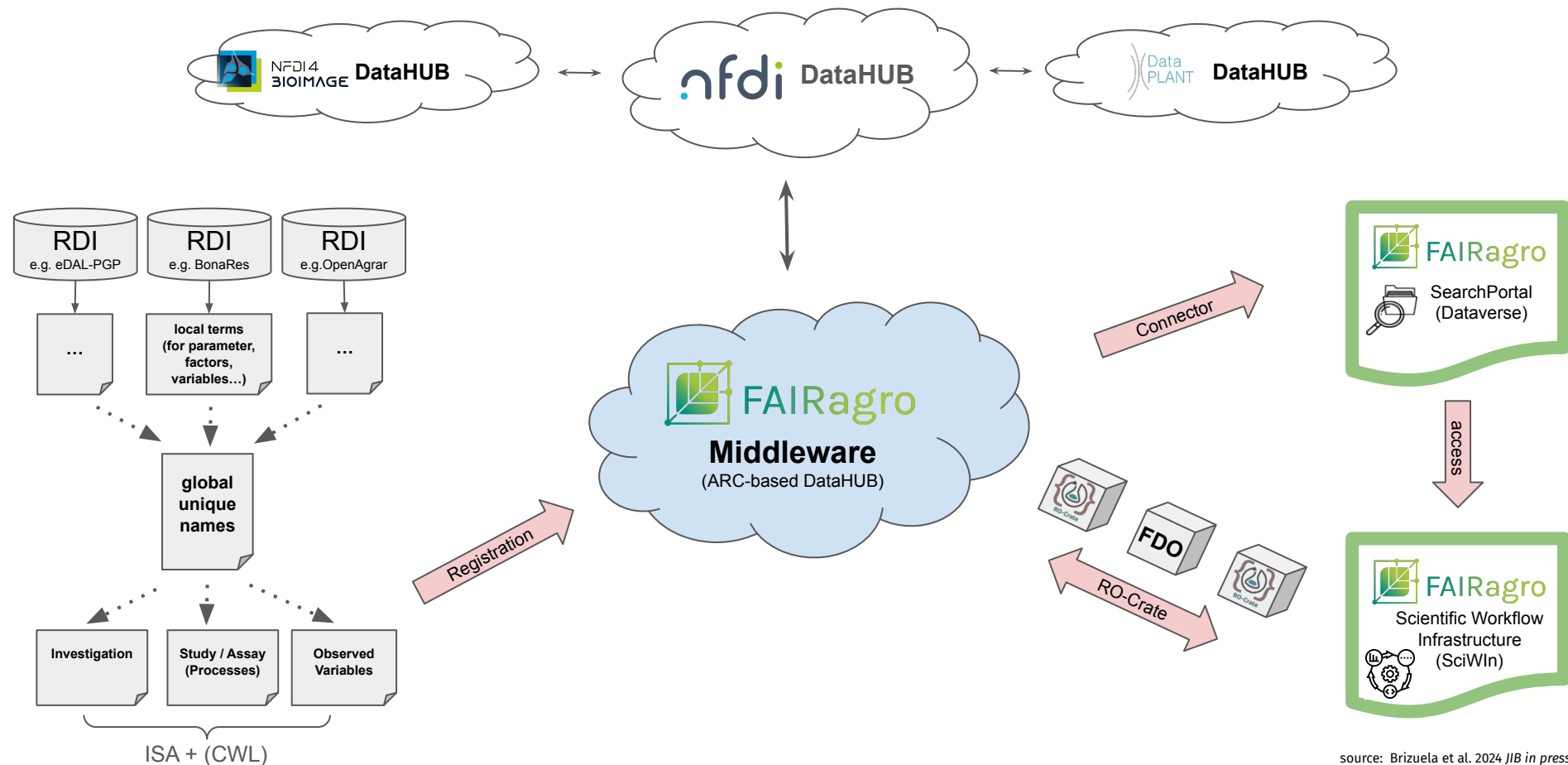
- based on common Schema.org metadata markup
- harvest metadata & share created dumps
- simple implementation; test instance for consumers

2. Advanced Middleware

- extending basic concept
- create FDOs based on the ARC concept



Concept of the Advanced Middleware



Summary

- 1st year characterized by intensive conceptual work, reviews & discussions
- developed roadmap for two-phase implementation
 - basic middleware implemented
 - started first implementation steps for extended middleware
 - homogenized metadata handling integrate diverse domains & allow future extension
- published concept in JIB (Brizuela et al. 2024 in press) & presentation at IB Zürich in Sep' 24
- builds on existing work / intensive cooperation with other consortia
- developed approach allows later integration into larger NFDI data infrastructure
→ comprehensive success story & good strategic position for second funding phase

Thank you for your Attention