SciWIn

FAIRagro

Boosting Scientific Reusability:

A Concept for a FAIR Scientific Workflow Infrastructure

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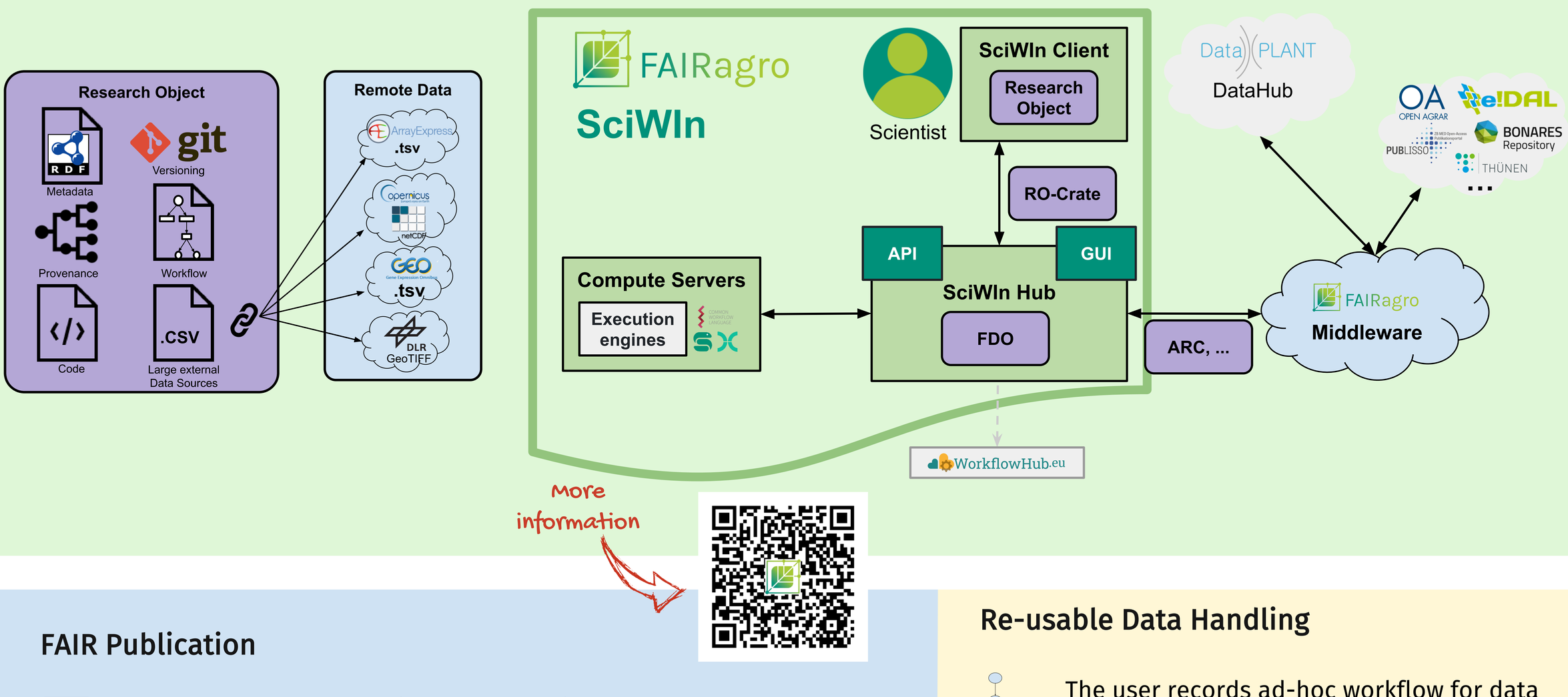
FAIR research is becoming increasingly important, but developing and publishing FAIR computational workflows can be challenging. A Scientific Workflow Infrastructure (SciWIn) will support scientists during data exploration and analysis with version control, the recording of workflows and provenance tracking. Specific tooling will help to formally specify annotated workflows, making them executable on different workflow engines. SciWIn will also facilitate collaboration and let researchers share, re-use, combine and extend workflows and associated data and code. The state-of-art annotation with metadata and encapsulation in FAIR Digital Objects (FDOs) will foster the FAIR publication of high-quality scientific work and help to further establish Open Science practices.



FAIR Publication

Stable workflow is annotated with metadata (linked data, schema.org) to make it findable

Publication of the FAIR DO in an appropriate repository brokered by FAIRagro Middleware

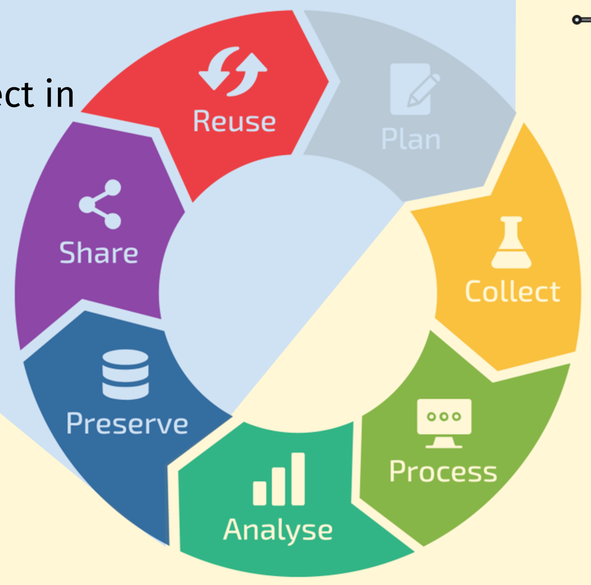
Repository registers research object in a PID system (DOI, ARK)

Re-usable Data Handling

The user records ad-hoc workflow for data pre-processing, transformation, analysis, ...

Iterative & collaborative workflow development including version control of data and code

Creation of shareable research objects with provenance information & metadata



„Data life cycle diagram“ by Elixir (https://rdmkit.elixir-europe.org/media_kit), licensed under CC BY 4.0 (https://creativecommons.org/licenses/by/4.0/).

Workflow Execution

Workflows can be (semi-) automatically transformed into a formal specification

Compatible with workflow publishing platforms and execution engines

Integration & Exploration

Explore research objects (RO) on SciWIn Hub

Download parts (code, data, metadata)

Recombine artifacts in new research objects

Upload to SciWIn Hub to integrate into RO-collection

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