

1. Motivations and objectives

(a) Status Quo

1. Growing disconnect between actors in data science
2. Research is often not reproducible
3. Published methods and data are often not reusable

Re-inventing the wheel slows down progress
Wastes resources
Erodes trust in research results

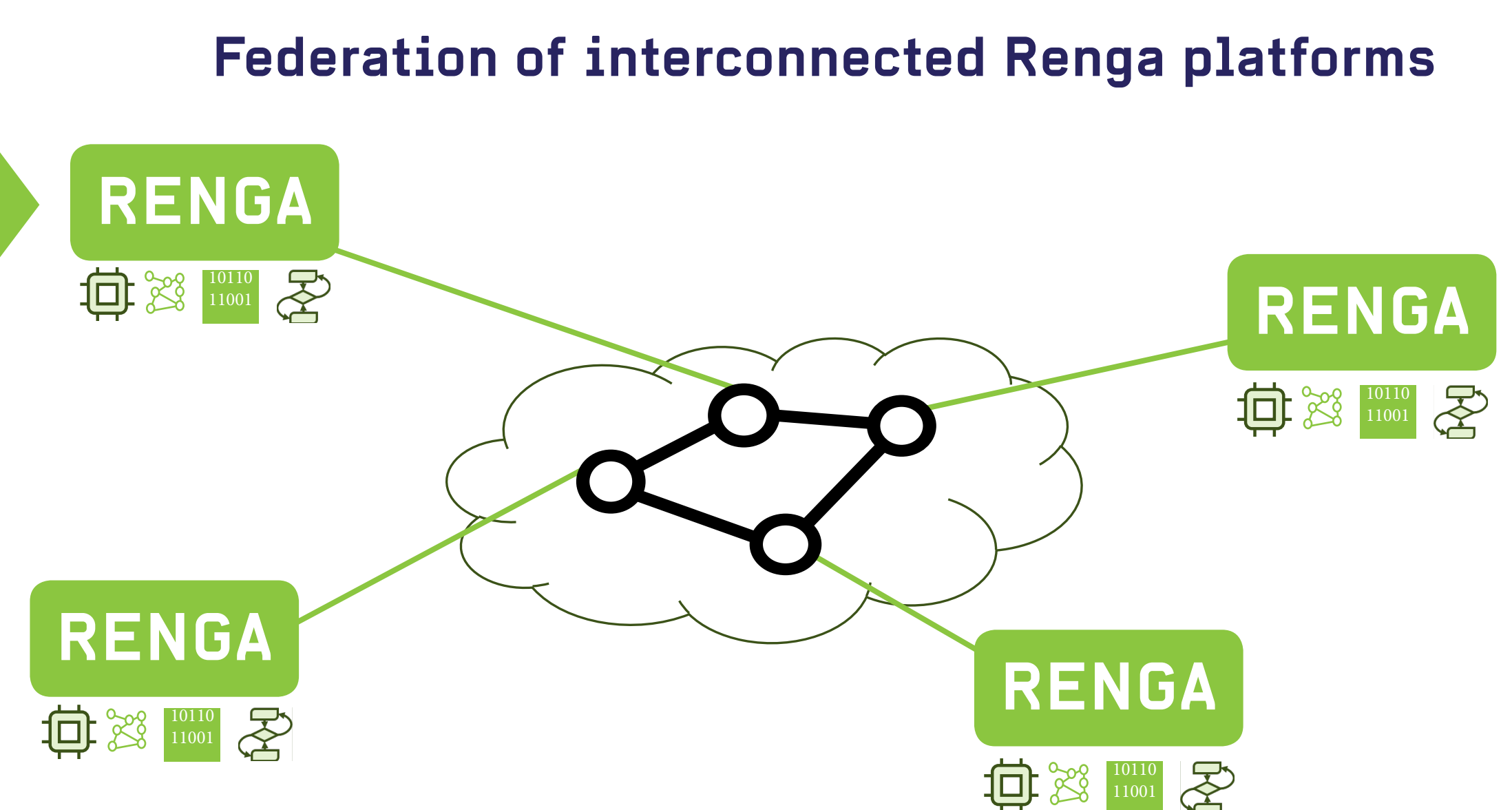
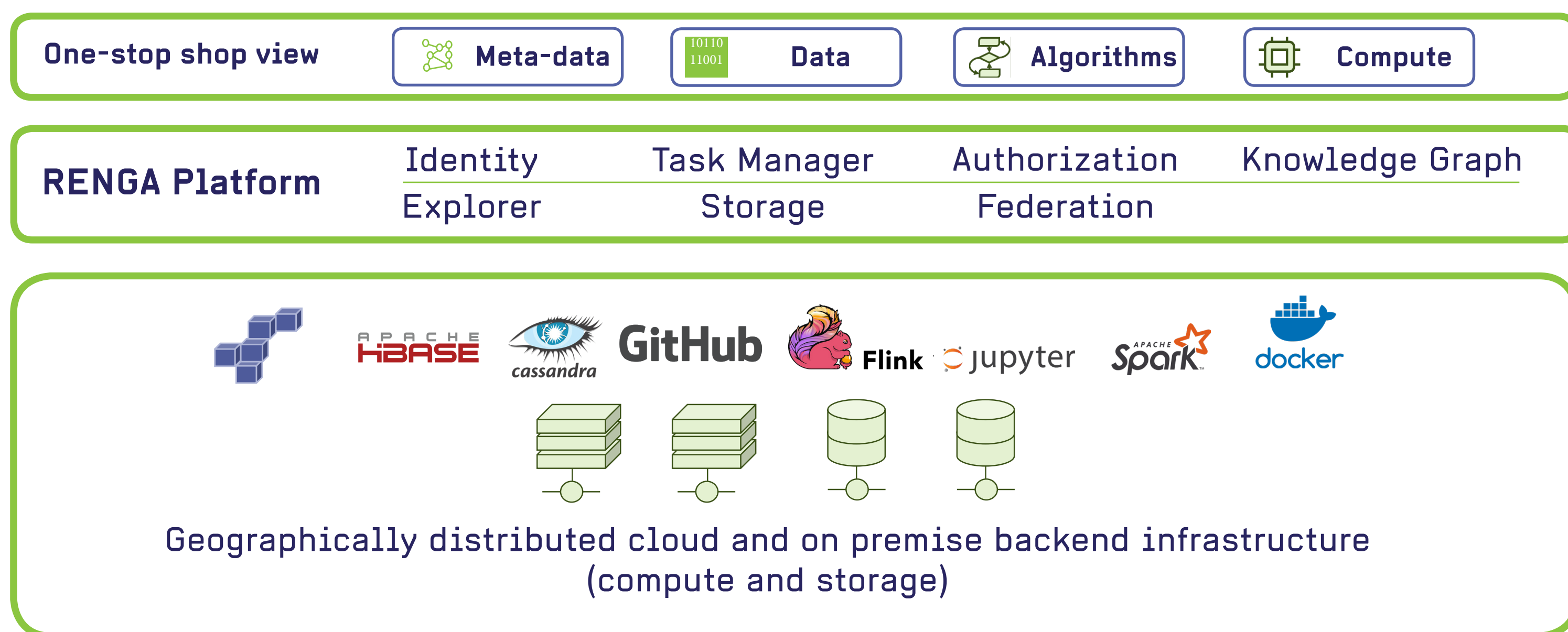
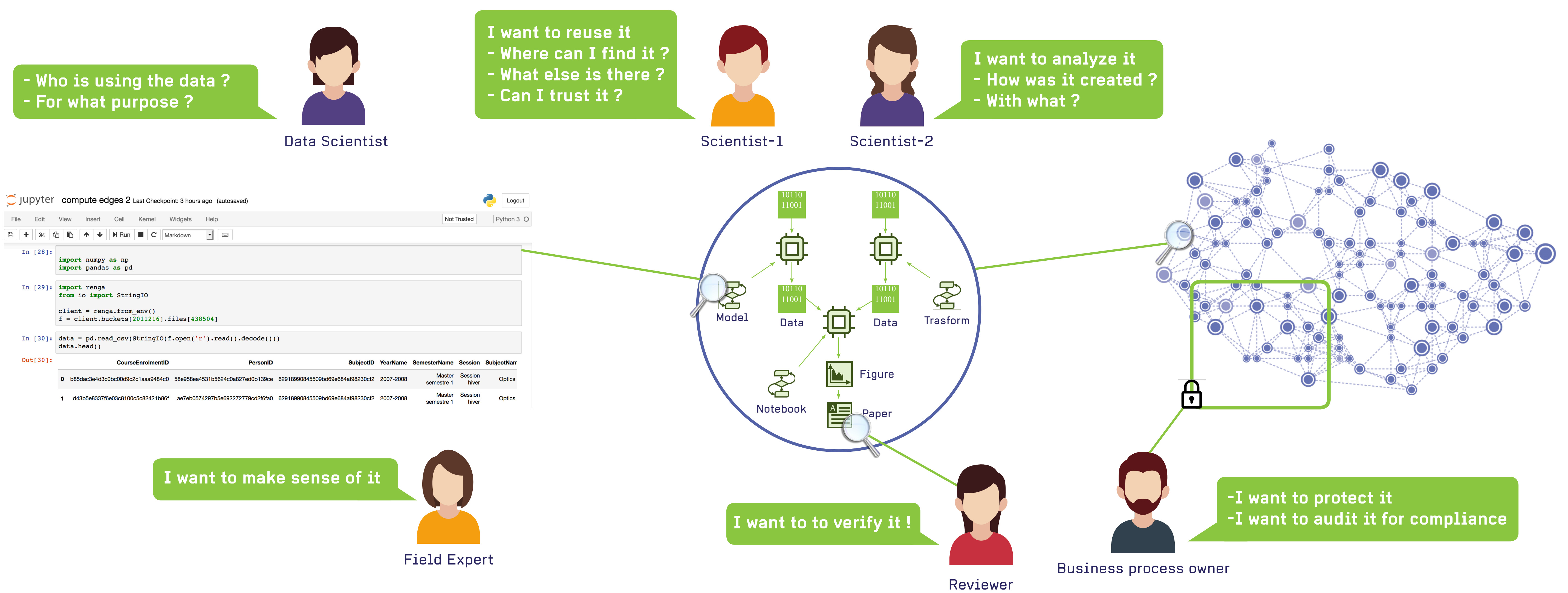
(b) Objectives

1. Create a scalable open-source framework for version control and management of data and algorithms, from raw files and first principle equations to final data products & visualizations
2. Offer user-friendly tools and services, fostering intra and inter-domain collaboration, productivity and excellence
3. Provide an open science solution that facilitates reproducibility, sharing, reuse and impact traceability of data and algorithms

2. Reproducible and reusable scientific workflows

- Import data and annotate it with rich, transferable metadata based on documented ontologies and JSON-LD
- Develop analysis processes off- or on-line and easily share your progress with others
- Take advantage of interactive development tools like Jupyter notebooks
- Enrich paper submissions with data from Renga projects
- Easily convert your analysis into workflows based on the Common Workflow Language
- Share parts of your projects (code, data, or workflows) and import useful components from others
- Control access rights to all project artifacts

3. Renga, an open-source platform made for and developed by the scientific community



User friendly

- Work with your preferred tools (python, R, matlab, ...)
- Automated version control and tracking

Reproducible and re-usable research

- See the (versioned) algorithms and data
- Replay, clone and modify a workflow using dockerized components

Knowledge Graph

- Data popularity, H-index
- Who is using the data?
- For what purpose?

Managing Access and Intellectual Property

- Decide what and when to share, on a case-by-case basis
- Track and share as you go, publish when ready

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