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Research Object Management Tools
DEMO

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Software Architecture

Specifies **functionalities** required by a (workflow-centric) Research Object mgmt. and preservation infrastructure, along with a set of functional entities for their grouping and **categorization**
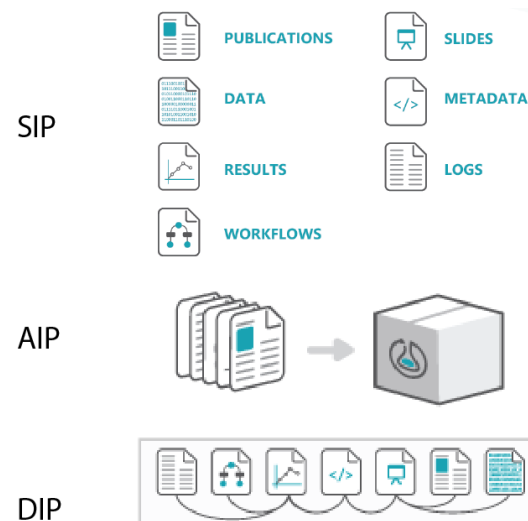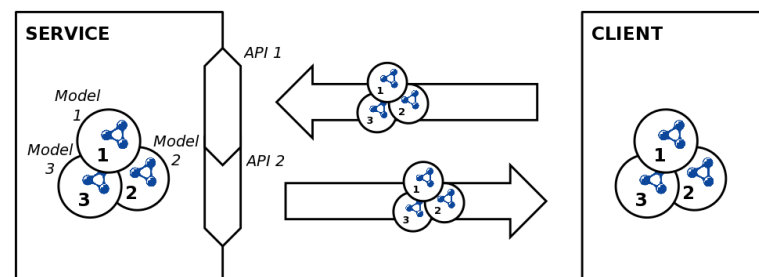
» Architecture principles
  » Adoption of **Linked Data** and **RESTful** approaches

» Architecture structure
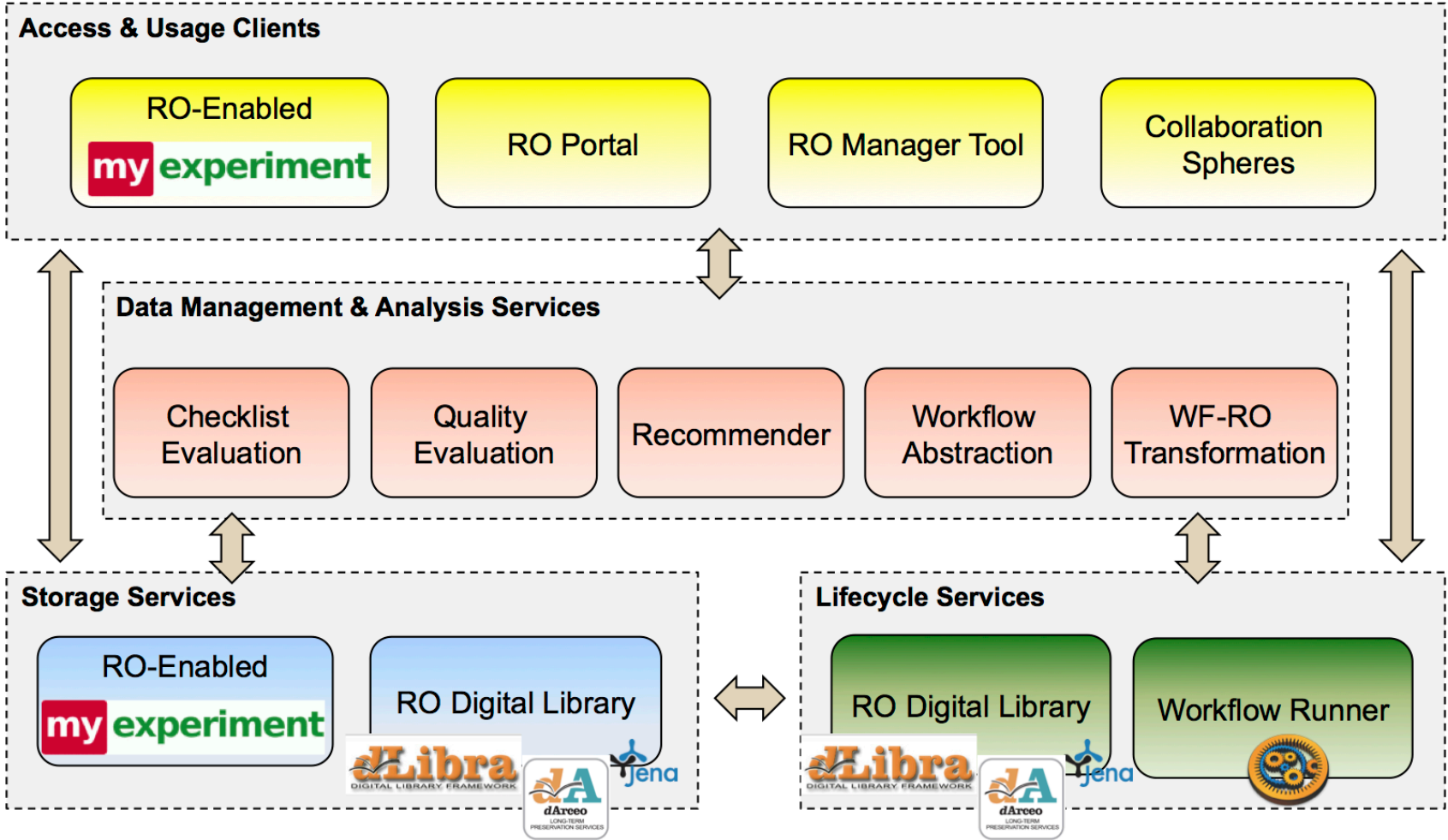 » **Models**: data structures that encode the concepts and relationships of information
  » **APIs**: set of resources and their representations for guaranteed compatibility (of a service)
  » **Services**: implement functionality that is provided to multiple clients

» Compliance with preservation standards
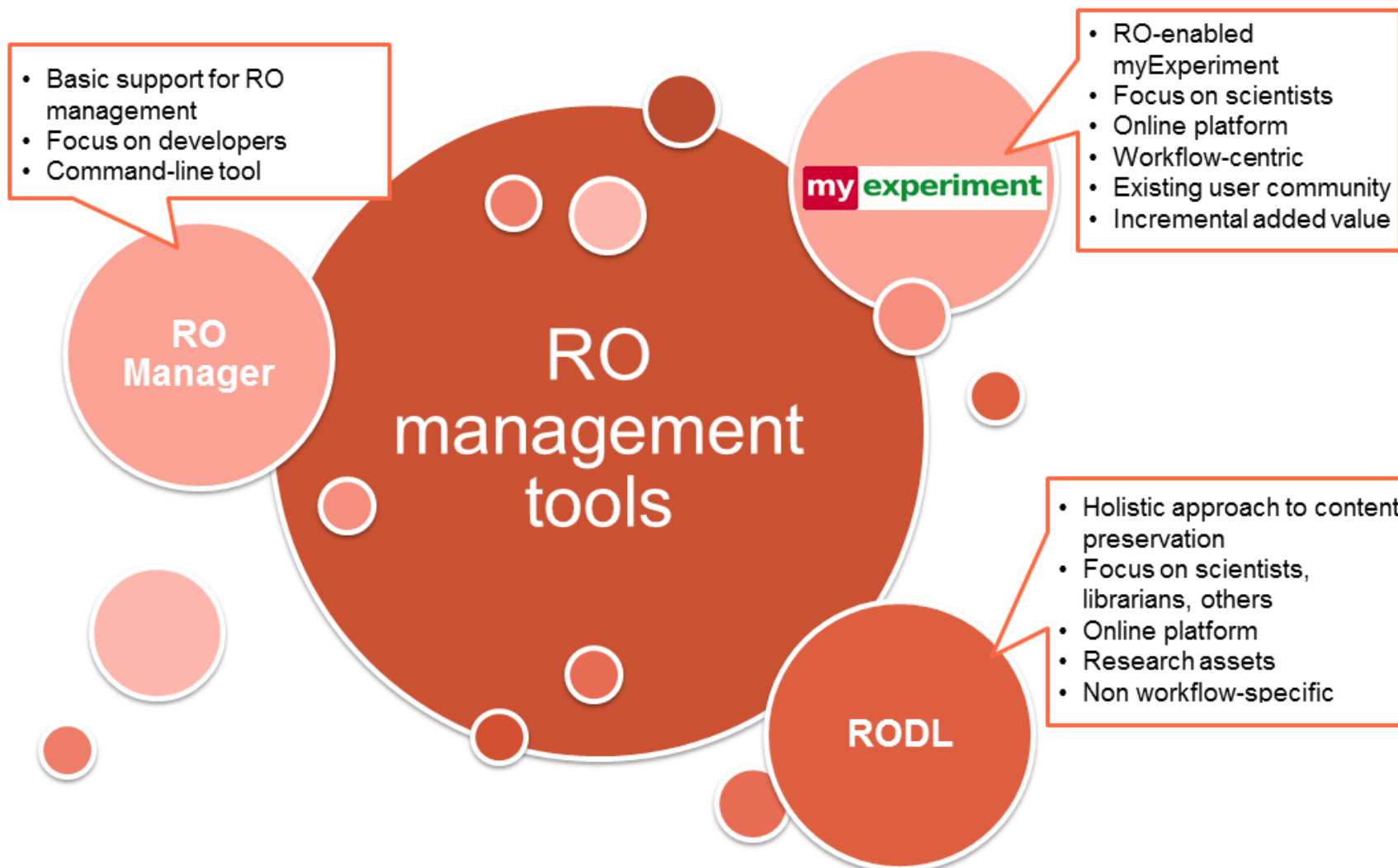 » Aligned with OAIS reference model & Merritt microservices

Technology

Access & Usage Clients

| RO-Enabled my experiment | RO Portal | RO Manager Tool | Collaboration Spheres |

Data Management & Analysis Services

| Checklist Evaluation | Quality Evaluation | Recommender | Workflow Abstraction | WF-RO Transformation |

Storage Services

RO-Enabled my experiment | RO Digital Library

Lifecycle Services

RO Digital Library | Workflow Runner

Live: http://sandbox.wf4ever-project.org/ http://alpha2.myexperiment.org/

Portfolio of Research Object tools

- Basic support for RO management
- Focus on developers
- Command-line tool

- RO-enabled myExperiment
- Focus on scientists
- Online platform
- Workflow-centric
- Existing user community
- Incremental added value

RO Manager

RO management tools

my experiment

- Holistic approach to content preservation
- Focus on scientists, librarians, others
- Online platform
- Research assets
- Non workflow-specific

RODL

Demo Introduction (1/2)

Show the process of building a research object from the music research experiment, with the purpose of **sharing, publising** and **preserving** the **experiment and its context**, in order to facilitate its **reusability**, **reproducibility** and **better understanding**.

- In particular, the following demo will show:
  - How to create a new research object
  - How to aggregate and annotate the artifacts related to the music research experiment.
  - How to capture the status of the research experiment at different moments in time, e.g., to share it with others, to cite it, to preserve it.
  - How to archive the research object once the research has been concluded, ensuring its preservation.
 - How to search and explore other research objects

Demo Introduction (2/2)

Show how to **use** and **interact** with the **research object management tools**
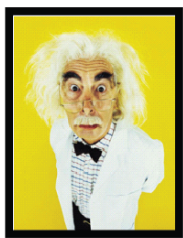
- In particular, in the demo the following tools will be shown:

  – Research Object Digital Library

  – RO Portal

  – Checklist Service

  – Wf-RO Service

  – Quality Service

  – Taverna

RODL
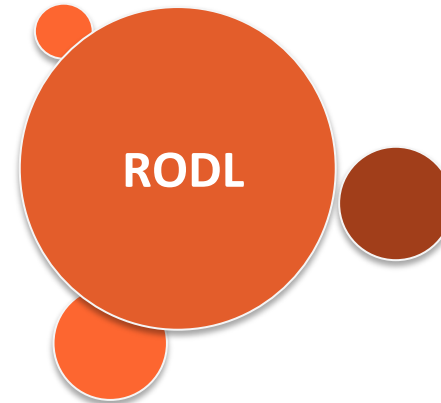
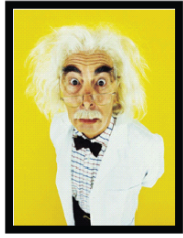# Demo context – sharing and preserving music research experiment
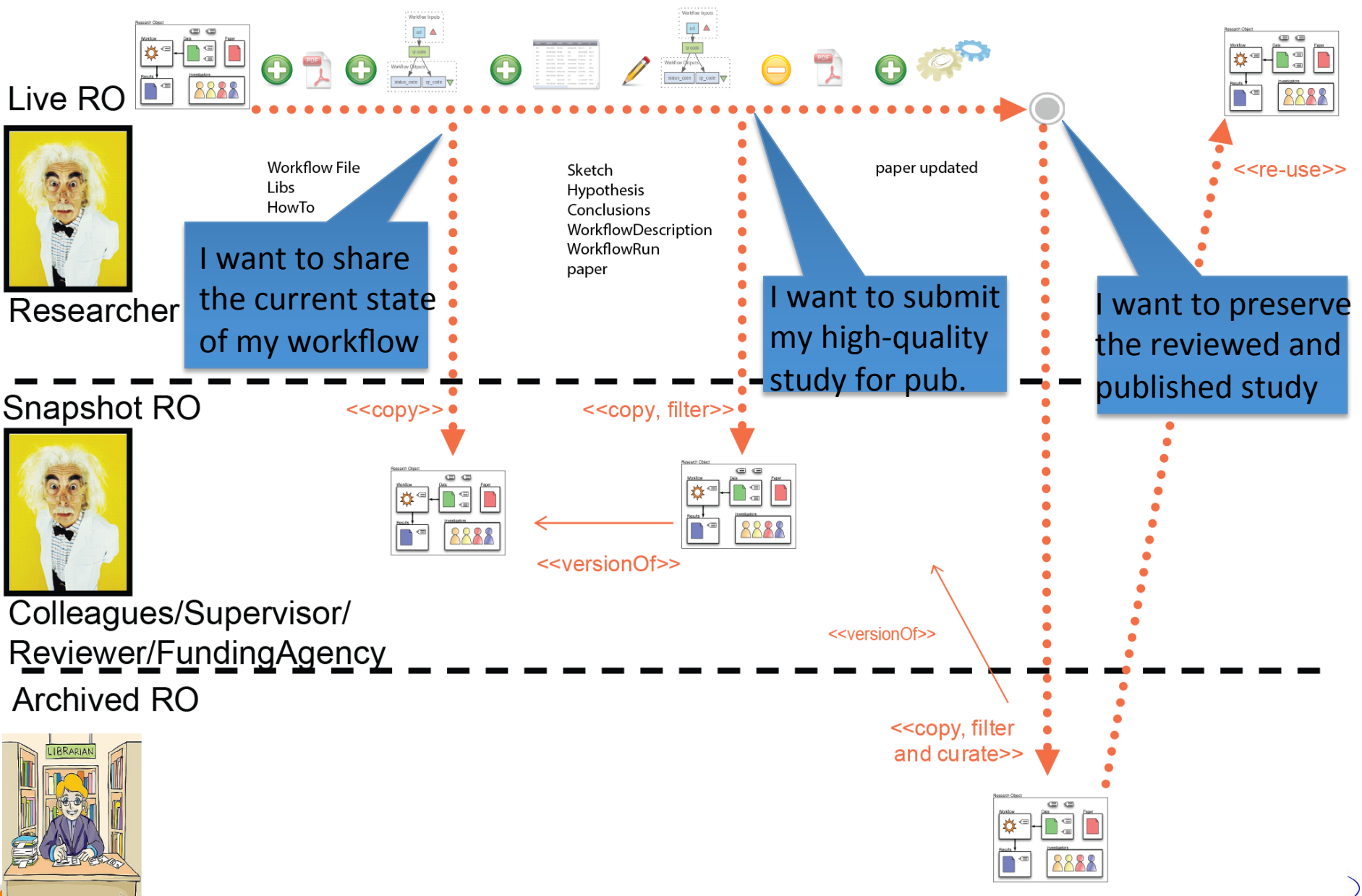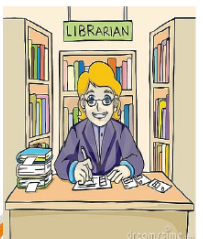
References and Links

- Architecture:
  Page, Palma, et al. From workflows to Research Objects: an architecture for preserving the semantics of science. Linked Science 2012. Boston, USA.

- Research Object Digital Library
  Palma, Corcho, et al. Digital libraries for the preservation of research methods and associated artifacts. In Proceedings of the 1st International Workshop on Digital Preservation of Research Methods and Artefacts 2013. Indianapolis, USA.

- APIs overview:
  http://www.wf4ever-project.org/wf4ever-reference-implementation

- Live Instances:
  http://sandbox.wf4ever-project.org/ http://alpha2.myexperiment.org/

- Source code:
  https://github.com/organizations/wf4ever

RO-ify your work!

http://researchobject.org/

Thanks!