# Rosetta

## A digital preservation solution for Universities

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The bridge to knowledge

# Copyright Statement

# What is Rosetta?

Rosetta is a **complete** preservation solution that addresses the **ever-growing** need to collect, archive and preserve the **digitally-born and digitized** materials stored at academic institutions, research organizations, and government institutions, ensuring **data integrity** and **access over time** to information in digital formats.



# Agenda

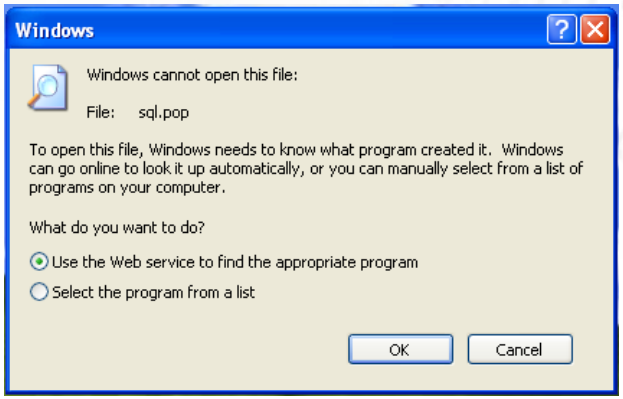
1. The need for digital preservation
2. The challenges
3. The Rosetta Architecture
4. Who is using Rosetta and how
5. Longterm preservation for Universities

# The need for digital preservation

# Need for Digital Preservation

Today's world is digital. If a file can't be opened, probably the reasons are:

1. Corrupted media
2. Missing rendering application
3. Unidentified file format

# Need for Digital Preservation

Nothing digital lasts:

1. Media has a shelf life
2. Applications have a shelf life
3. Formats have a shelf life

**<u>You need to preserve all three</u> to be able to read it again**

# The Challenges

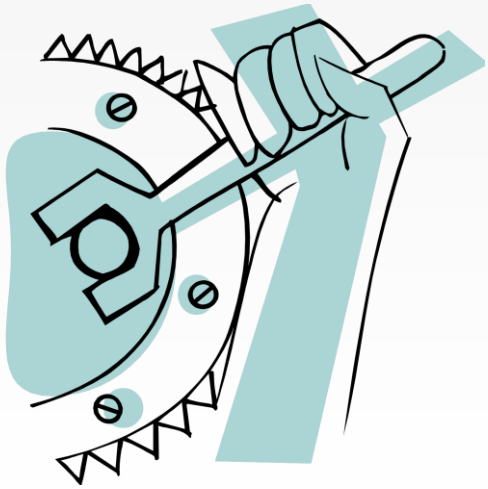
# Challenges

Active preservation principles:

1) Ensuring bit integrity

2) Ensuring content health
   - Format viability
   - Complete metadata
   - Provenance

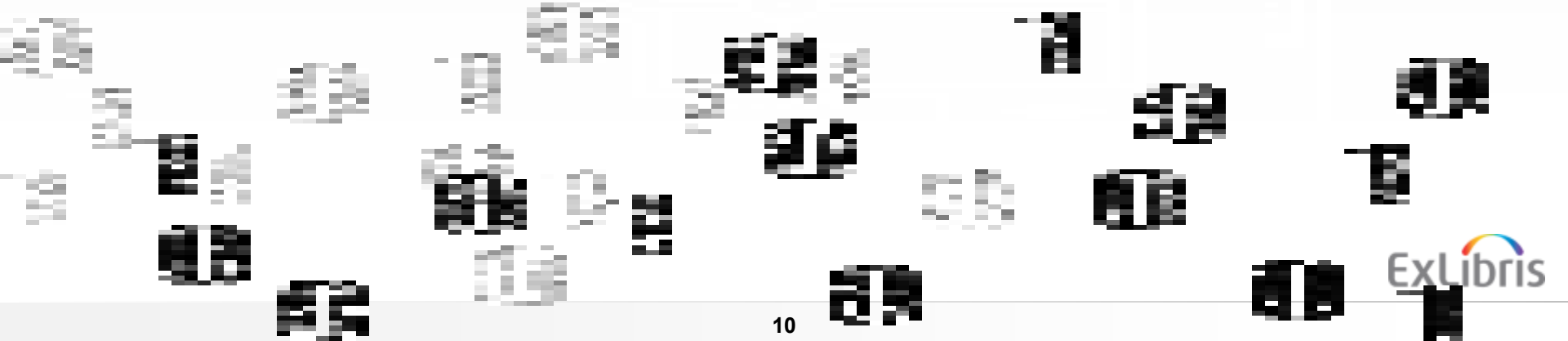
3) OAIS compliant system



# Challenges - Bit Integrity

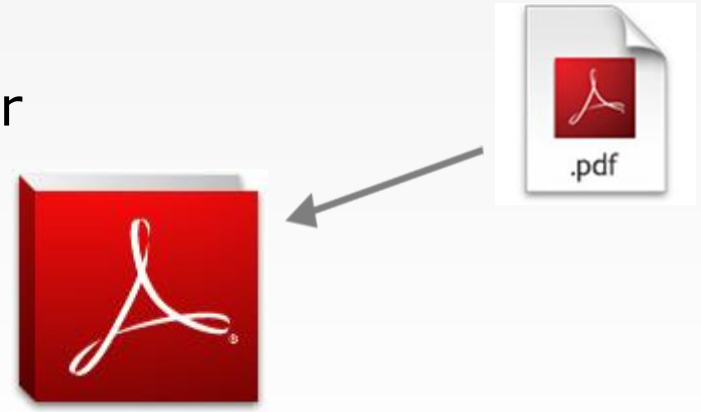
- Fixity checks determine if data has changed or corrupted
- Basic feature found in asset management as well as preservation solutions
- Does not guarantee data access – just that it has not changed

**A small first step to preservation**



# Challenges – Content Health

- Formats evolve rapidly and become obsolete
- File access requirements
  - Positive ID of format e.g. pdf
  - SW application e.g. Acrobat reader
- Risk analysis to assure access
  - Current format library
  - Current application library



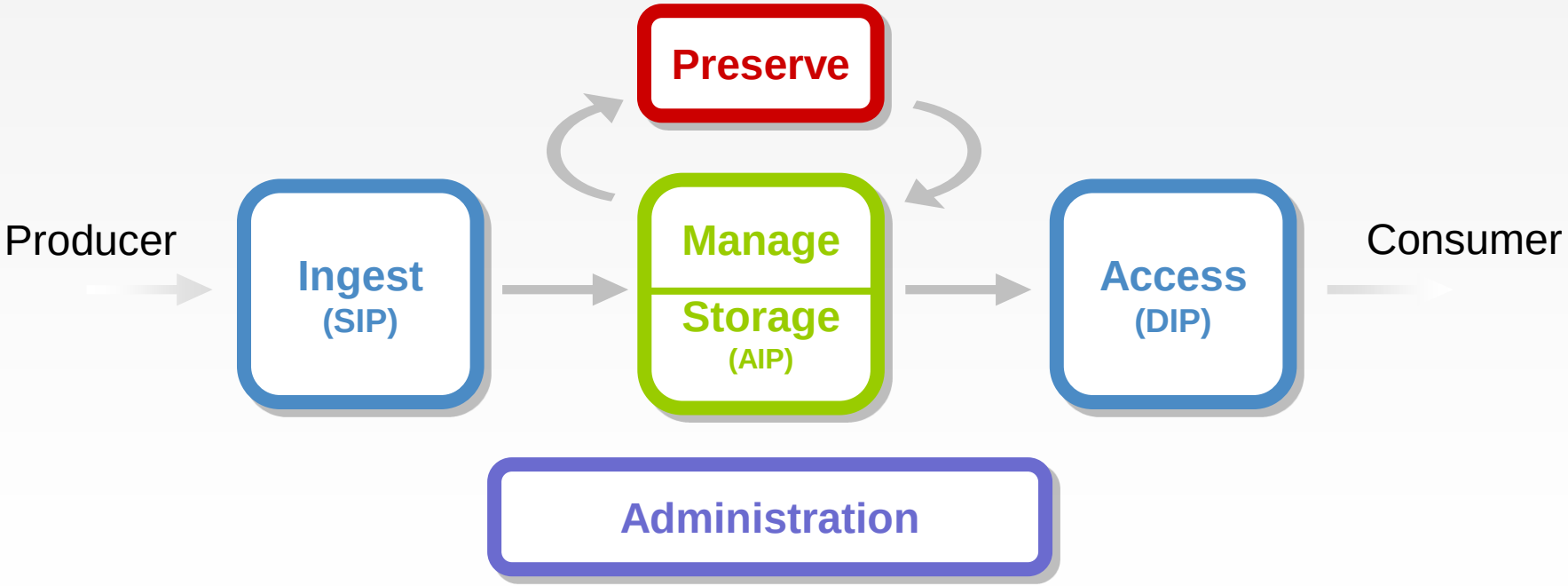

**Essential for preservation**

# Challenges – Complete metadata

- Technical metadata (e.g. size, resolution, compression, etc)
- Descriptive metadata (e.g. author, title, publisher, etc)
- Metadata is essential so that you
  - **Preserve exactly what you need to preserve**
  - **Know (in future) what you preserved**

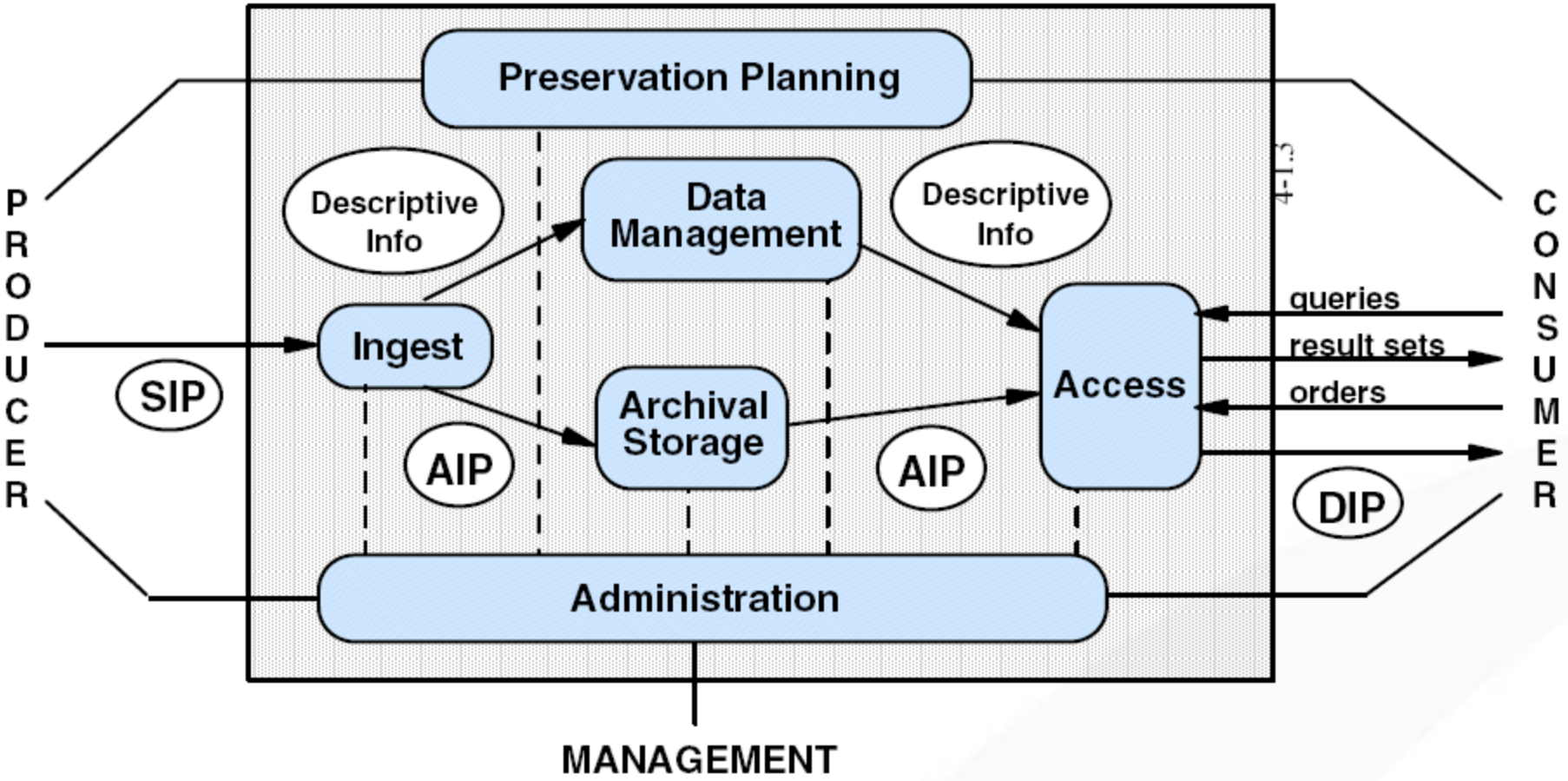
# Challenges - System

A digital preservation system (OAIS) must offer [1]



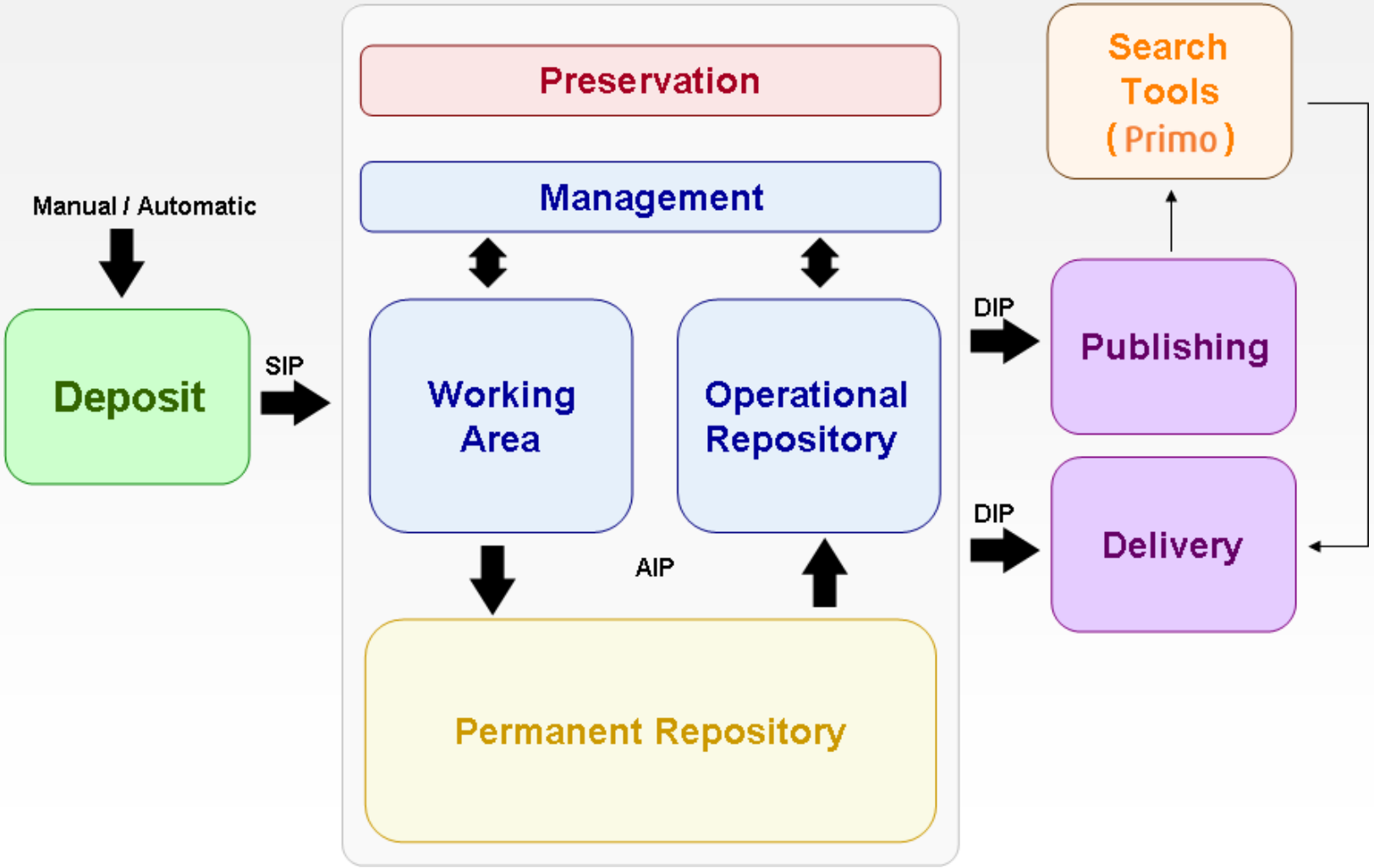

1. International Organization for Standardization: Open Archival Information System (OAIS)

# OAIS Model


Preservation Planning
Descriptive Info
Data Management
Descriptive Info
PRODUCER
Ingest
SIP
AIP
Archival Storage
AIP
Access
queries
result sets
orders
DIP
CONSUMER
Administration
MANAGEMENT

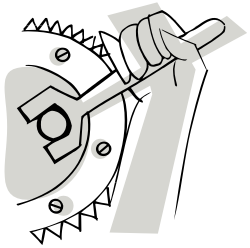
# The Rosetta Architecture

# Rosetta Architecture

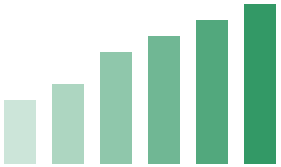


# Key Features

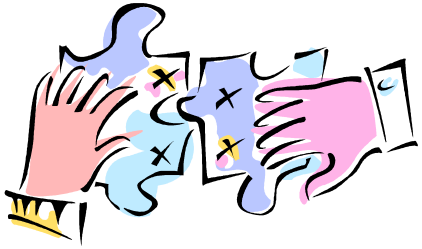
**Community Driven Knowledge Base**



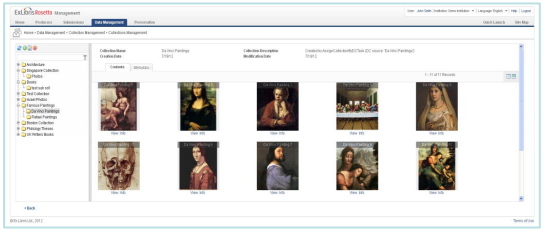
**Active Preservation**



**Scalable**



**Open & Integrative**



**Digital Asset Management**

**Out-of-the-box Configuration**

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# Rosetta - Open & Integrative

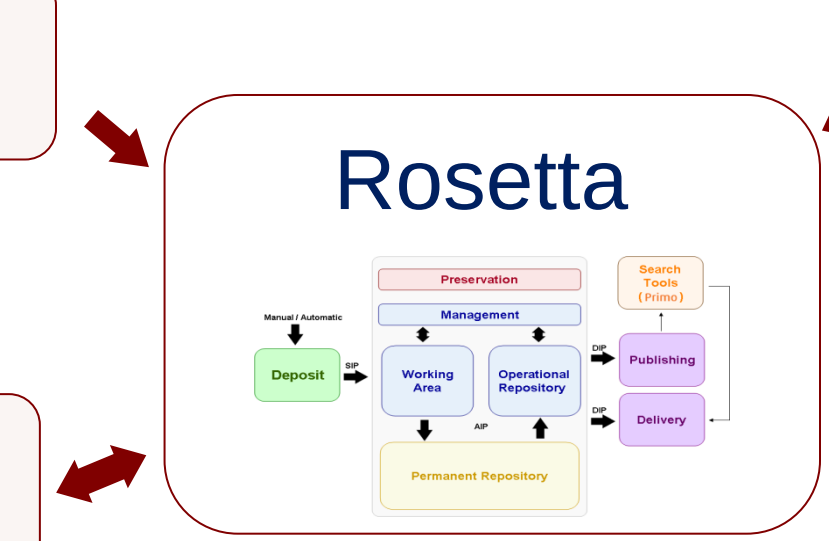
Submission Apps

Storage Abstraction

ILS/CMS Systems

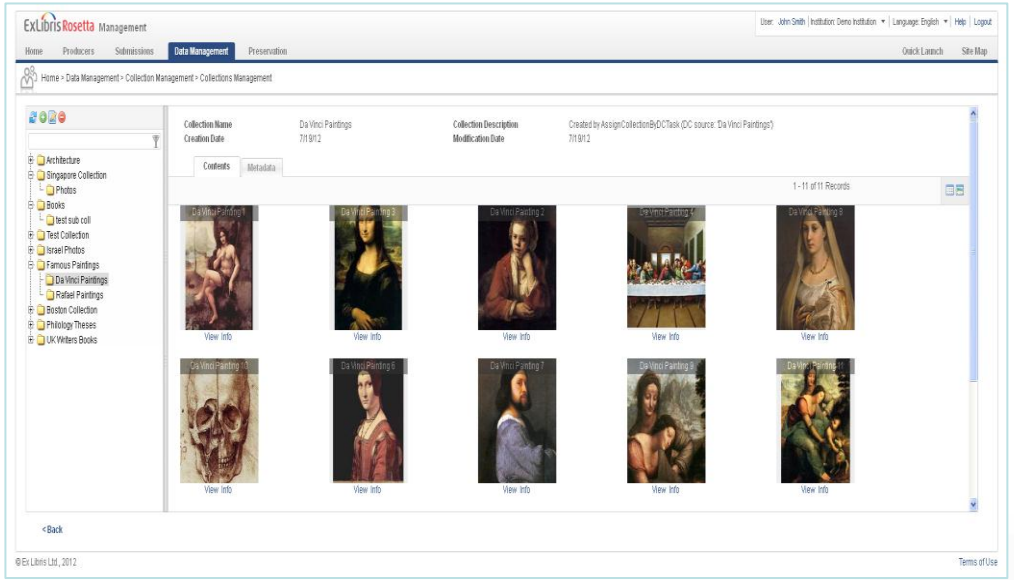
Search Engines

Plug Ins (validation, migration, enrichment, etc)



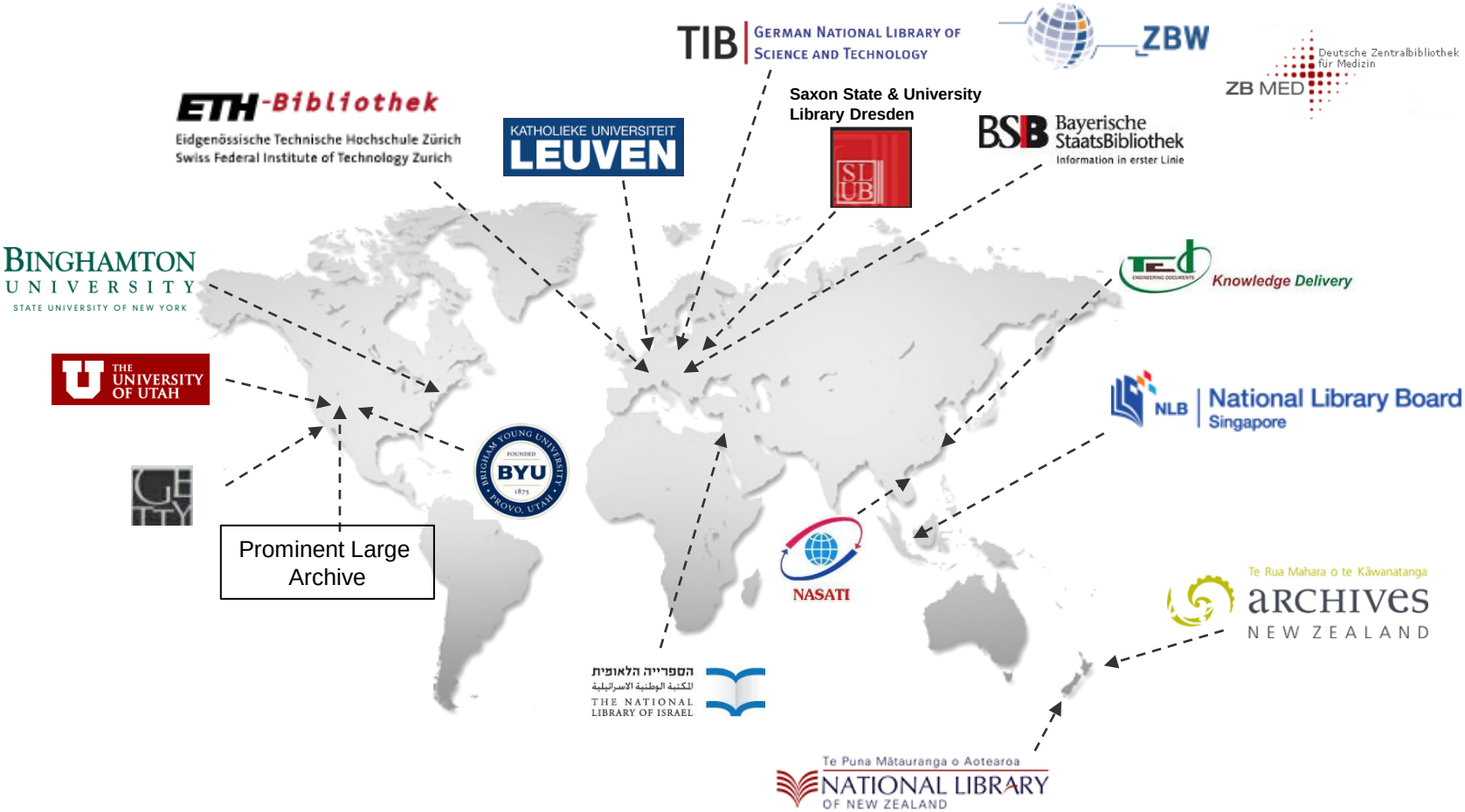
# Rosetta as Digital Asset Management solution

- Rosetta consists of several DAM-features (e.g. collection management)
- This enabes customers to:
  - Replace existing systems
  - Use Rosetta as repository for example in digitization projects



# Who’s Using Rosetta and How

# Rosetta Customers Around the World



# Different focus areas

**National / State libraries**

- Cultural heritage
- Websites
- Mass digitization
- Maps

**Archives**

- Legal documents
- Archival collections
- Government papers

**Special libraries**

- Audio-Video files
- Special collections
- Publications
- E-mails

**Universities & Research Institutes**

- Research data
- Digitized student files
- Certificates
- DICOM-files
- Administrative folders

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# Growing need for preserving digital information in Universities

# Why?

- More and more information in University organisations (incl. University-Hospitals) has been digitized or is born-digitally
- Examples
  - In the Library: publications, special collections, images, maps, audio-video files, etc.
  - In the Administration: Digitized Certificates (need to be accessible by law for 40 years), digitized student files, etc.
  - In the Hospital: Electronic health files, X-ray files (DICOM format)
  - In the faculties: Research data
  - In the University Archive
  - More

# Common requirements

- **These institutions must collect, manage and preserve their content and provide long term access to this information.**

**Research Data**

**Medical Records**

**Digitized Collections**

**Audiovisual**

**Legal Documents**

**Websites**

# Focusing on the area of research data

# Why should Universities care?

- Good scientific practice requires retention of data in usable form
- Research collaboration
- Funding organisations require data management plans (NSF, DFG)
- Re-use of data increasingly important and should be facilitated
- Data which cannot easily be reproduced and has permanent relevance must remain available
- Published or referenced material must be citable and remain available

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# Funders' View – The UK example


| | Policy Coverage | | Policy Stipulations | | | | | Support Provided | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Research Funders | Published outputs | Data | Time limits | Data plan | Access sharing | Long-term curation | Monitoring | Guidance | Repository | Data centre | Costs |
| AHRC | ● | ● | ● | ● | ● | ◐ | ○ | ● | ○ | ◐ | ○ |
| BBSRC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ | ● |
| CRUK | ● | ● | ● | ● | ● | ● | ● | ◐ | ● | ○ | ○ |
| EPSRC | ● | ● | ● | ◐ | ● | ● | ● | ◐ | ○ | ○ | ● |
| ESRC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ |
| MRC | ● | ● | ● | ● | ● | ● | ○ | ◐ | ● | ○ | ◐ |
| NERC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ |
| STFC | ● | ● | ● | ● | ● | ● | ● | ◐ | ● | ◐ | ○ |
| Wellcome Trust | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ | ● |

http://www.dcc.ac.uk/resources/policy-and-legal/overview-funders-data-policies

# Challenges

- **Missing data management process/Who is responsible?**
  - access rights control
  - retention periods
  - DOI
  - National initiative? University/Library?
- **Meta data definition**
  - Heterogenous disciplines
  - Standardisation?
- **Legal aspects eg. Copyright/intellectual property**
- **Get the researchers on-board**

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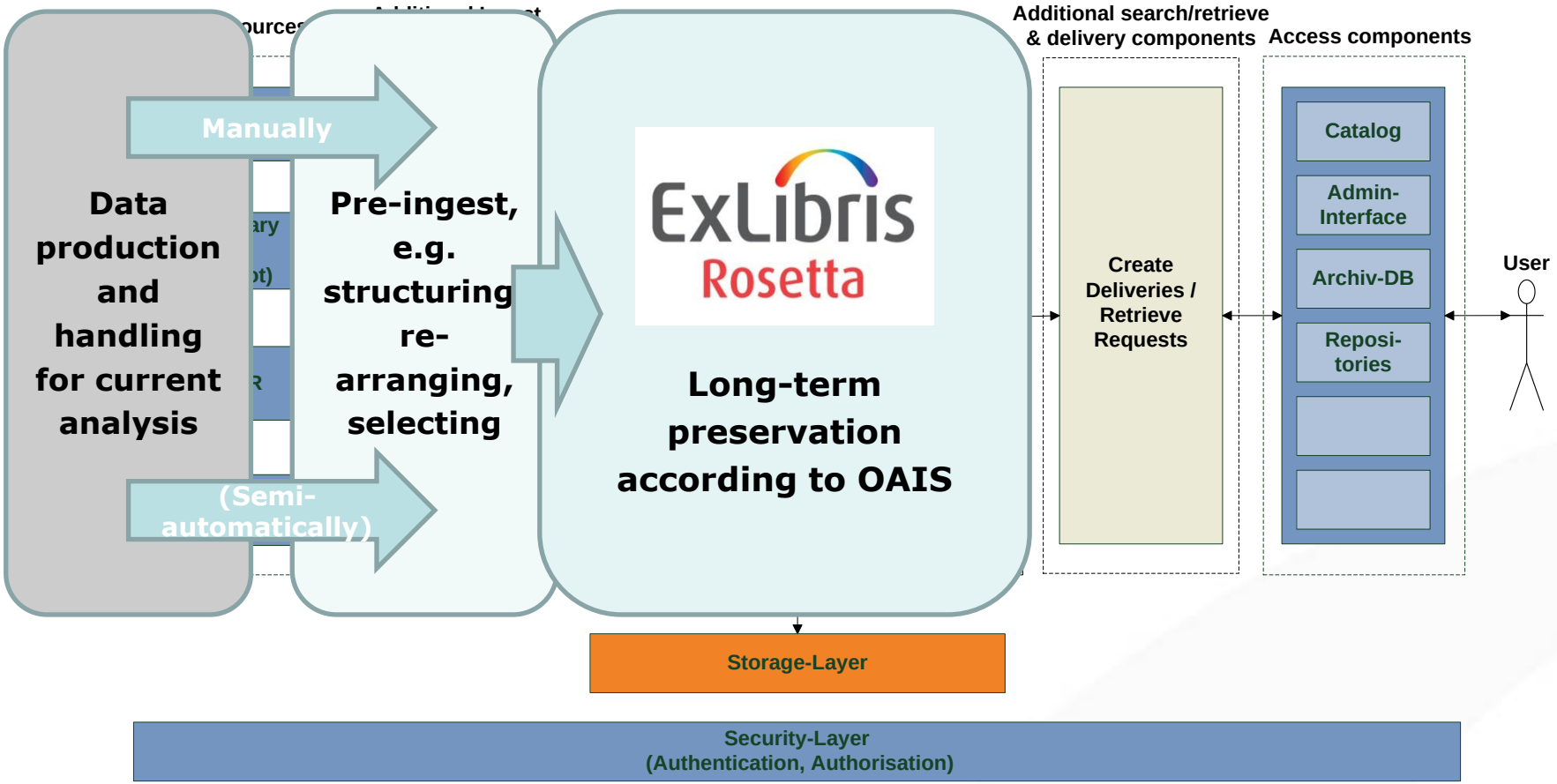
# Example: ETH Solution




Final report on second phase „Pilot Langzeitarchivierung“, S. 23f; Aliesch, P. et al., 2007: Projekt „Pilot Langzeitarchivierung“. Internal.

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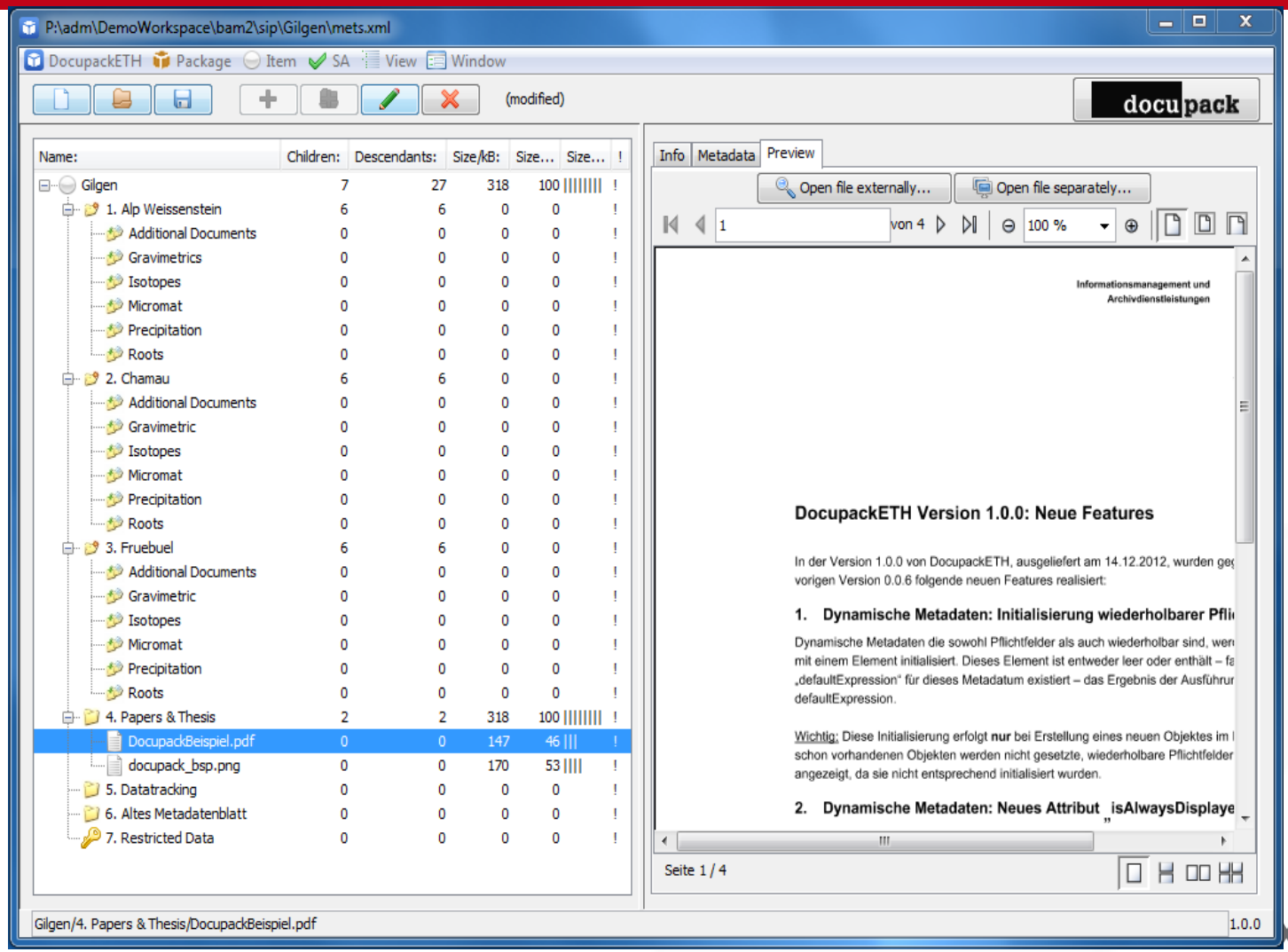
# ETH - Pre-ingest Mechanism



# Duesseldorf Proof-of-Concept

## Goals:

- Demonstrate ingest capabilities of the four different data types including format validation and identification
- Demonstrate preservation capabilities
- Demonstrate integration with external viewers
- Demonstrate publishing of the research data

## Data Types:

- Biological and medical research center (BMFZ, genetics data)
- Center of advanced imaging (CAi, microscopic data)
- University library (ULB, METS/TIFF data)
- University hospital (UKD, DICOM data)

## Results:

All items are stored in the permanent repository, some can be viewed and published.

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# Where are we today?

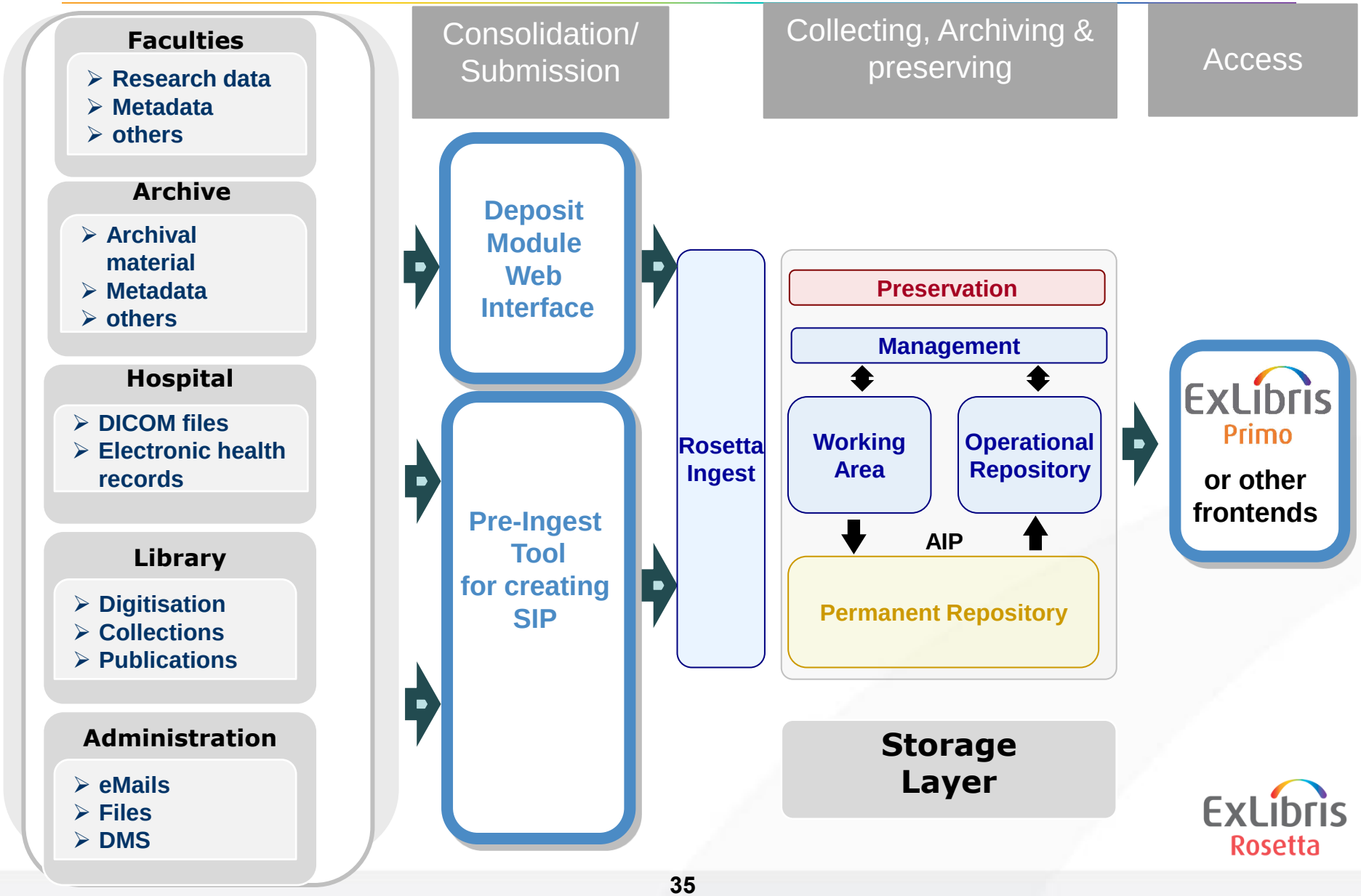
## Using Rosetta you can:

1. Allow researchers to deposit research data materials both 'light' deposits like Excel files and 'heavy' deposits like DNA sequence file (40gb)
2. Assign different retention policies
3. Plugin your own viewers or export the materials to dedicated machines
4. Publish materials using Primo or other resource discovery tools
5. Create DOIs

- And more…

# Recommended solution concept for University data centers

# University Preservation Backbone



# Benefits of this solution concept

- The University is able to archive and preserve all digital material of the entire organization in one system.
- For some units of the university Rosetta can be used as a repository which will reduce maintenance and operation effort for the University IT.
- Long-term preservation can be offered as a new service for the university which is especially of interest to the faculties producing plenty of digital research data.
- The pre-ingest tool helps researchers organize and manage their data before it is ready for archive.
- Partners of the university might join in the project to reduce effort / costs for operation and maintenance.

# Thank You!

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