

# DLCM project

## Lessons learned from the implementation of research data management services in Switzerland

Lydie Echernier

*DLCM Coordinator and RDM Support Specialist, UNIGE*

2020 Meet & Greet Swiss medical librarians, 3 September 2020

# Agenda

1. Context
2. Active data management
3. Resources, training & support
4. Professional services
5. Long-term preservation
6. Research data management services
7. Questions



Mandated by **swissuniversities**

# Context

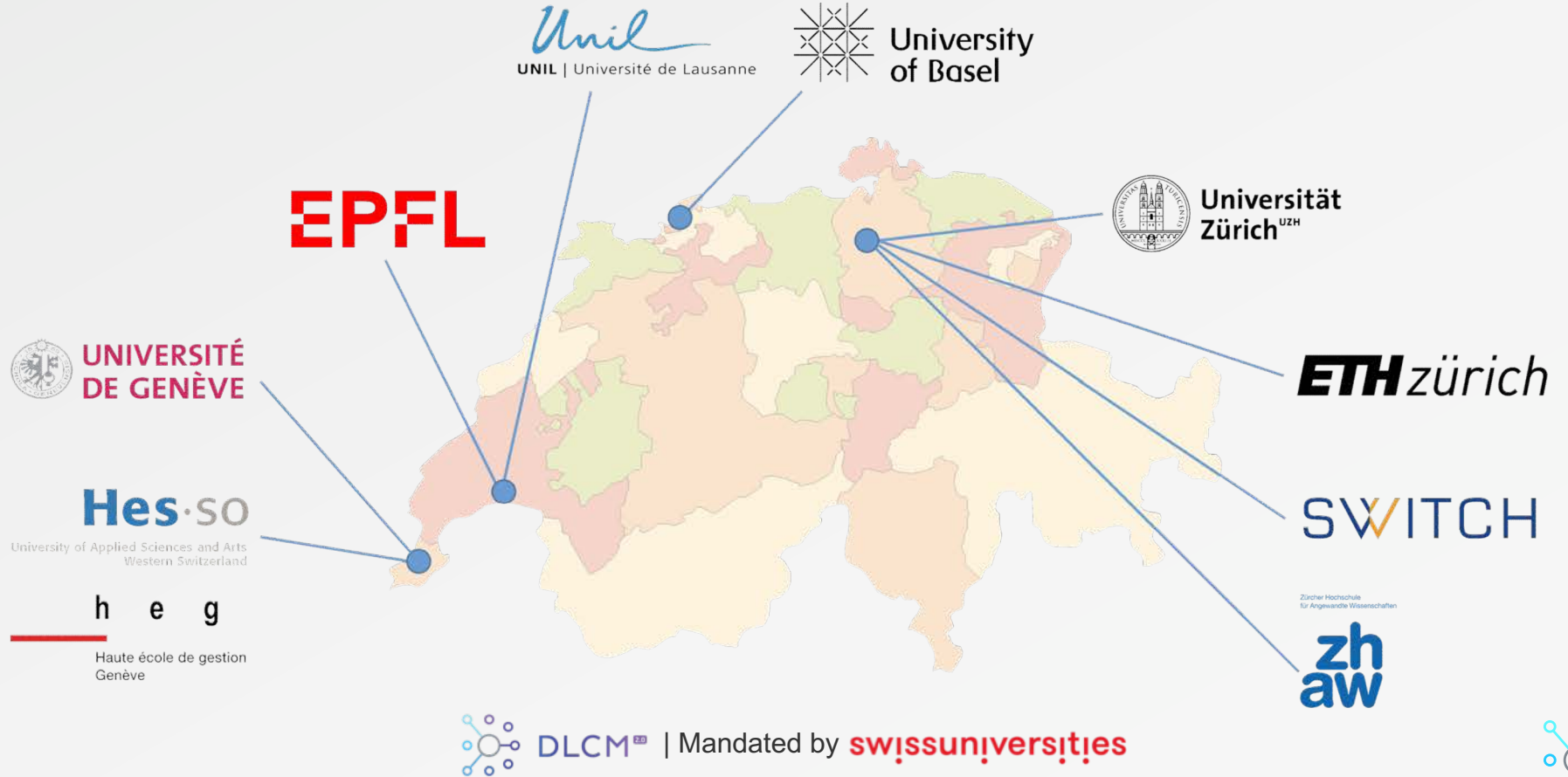
*DLCM Project*



## Our vision

*We support researchers in managing their data from research proposal to publication and data archiving*

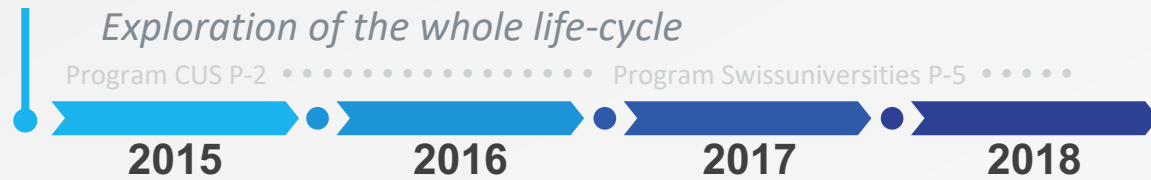
# Partners



## DLCM Phase 1 (01.08.2015-31.07.2018)

*Exploration of the whole life-cycle*

Program CUS P-2 ..... Program Swissuniversities P-5 .....

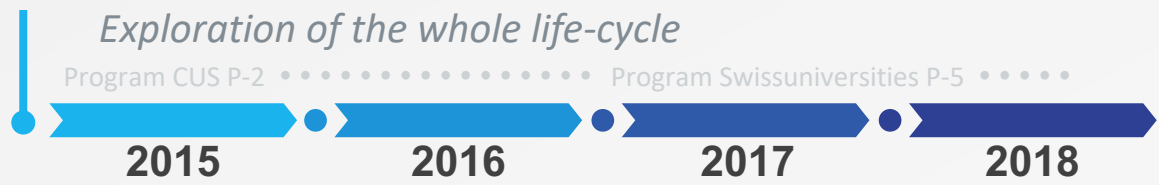


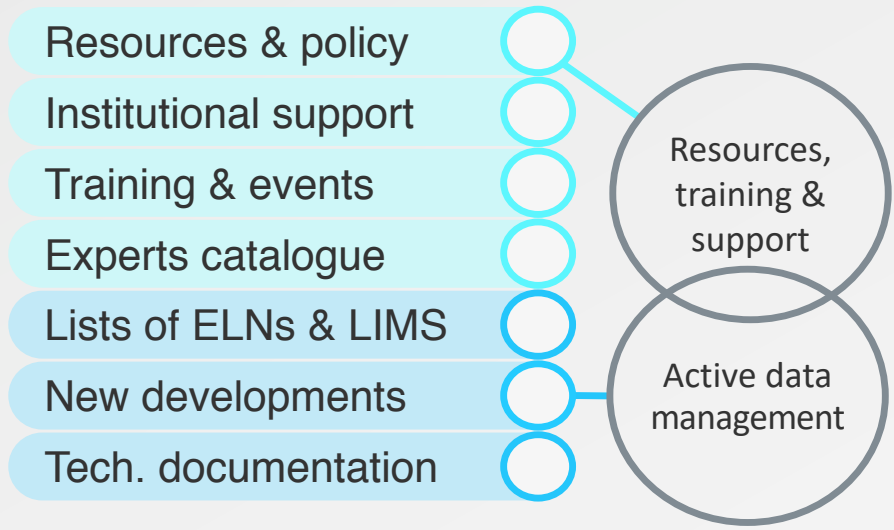


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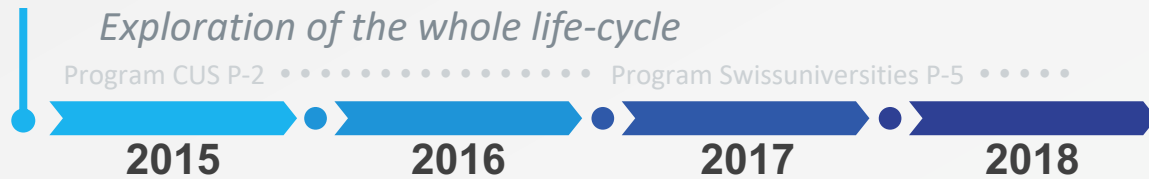




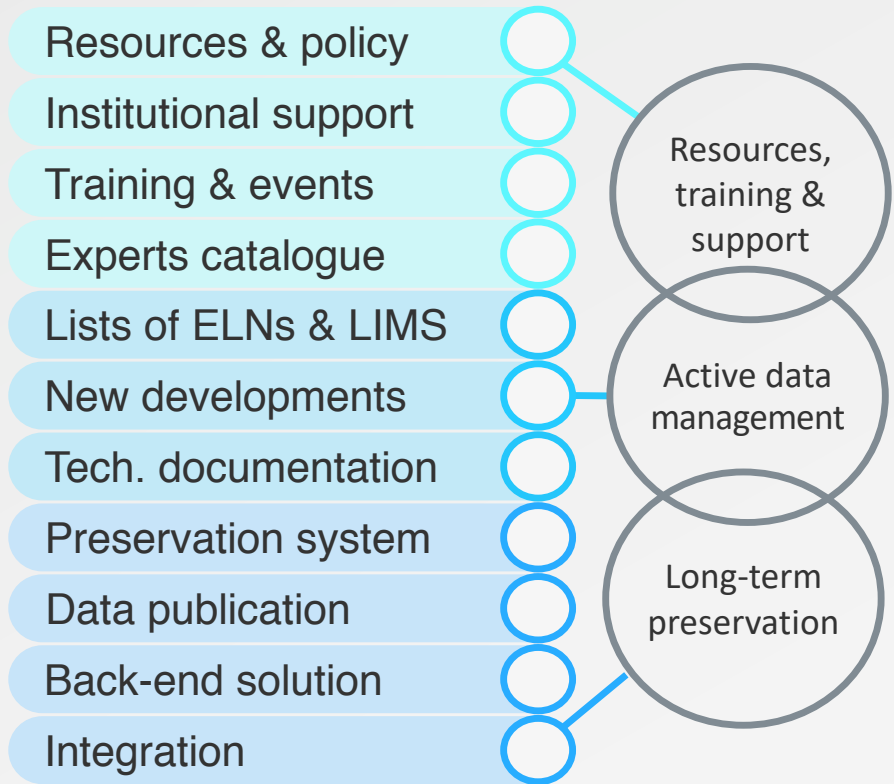
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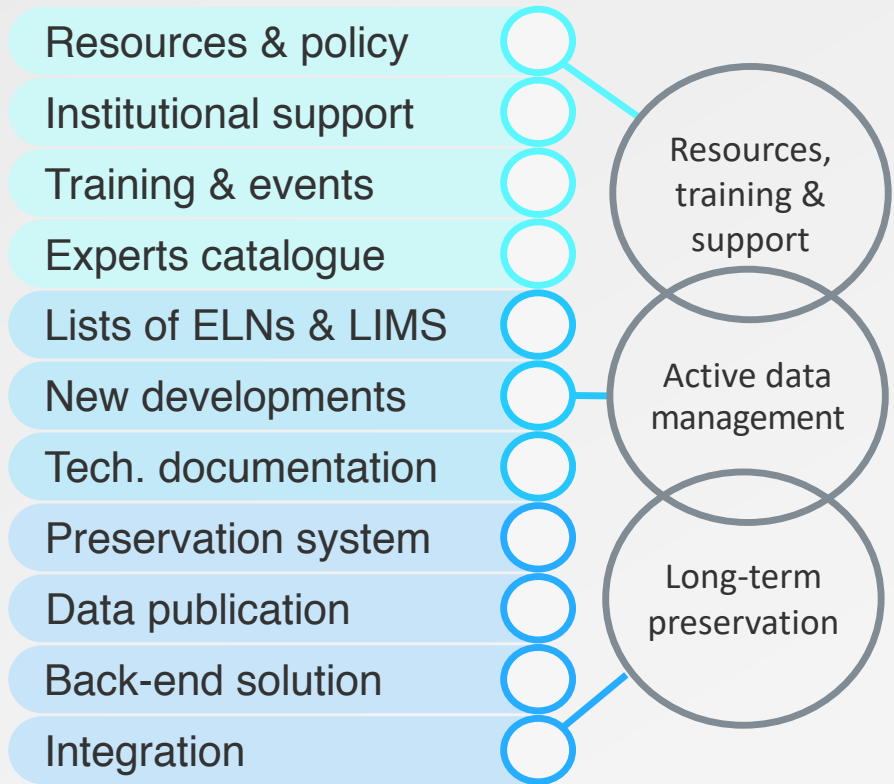


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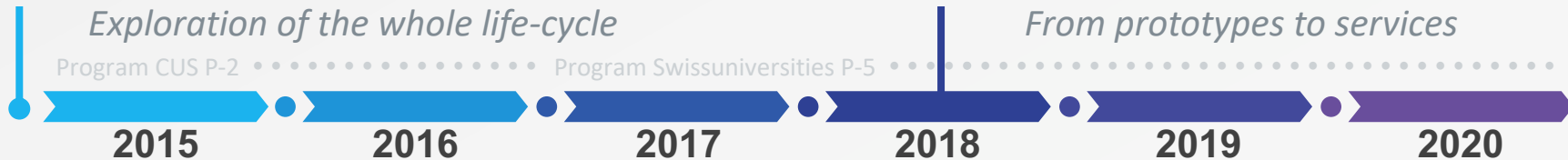
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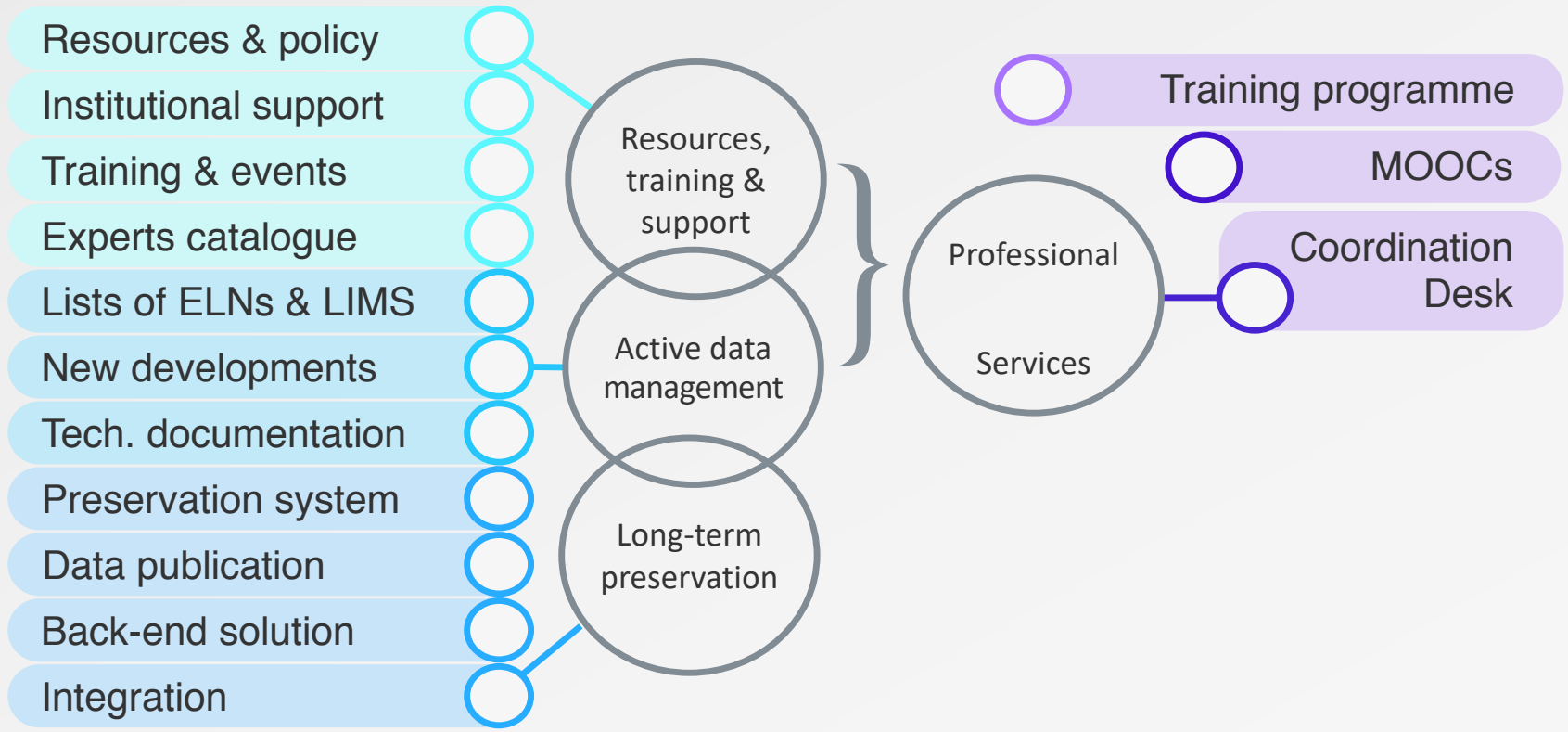
*Exploration of the whole life-cycle*

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**DLCM 2.0 (01.08.2018-31.12.2020)**

*From prototypes to services*





**DLCM Phase 1 (01.08.2015-31.07.2018)**

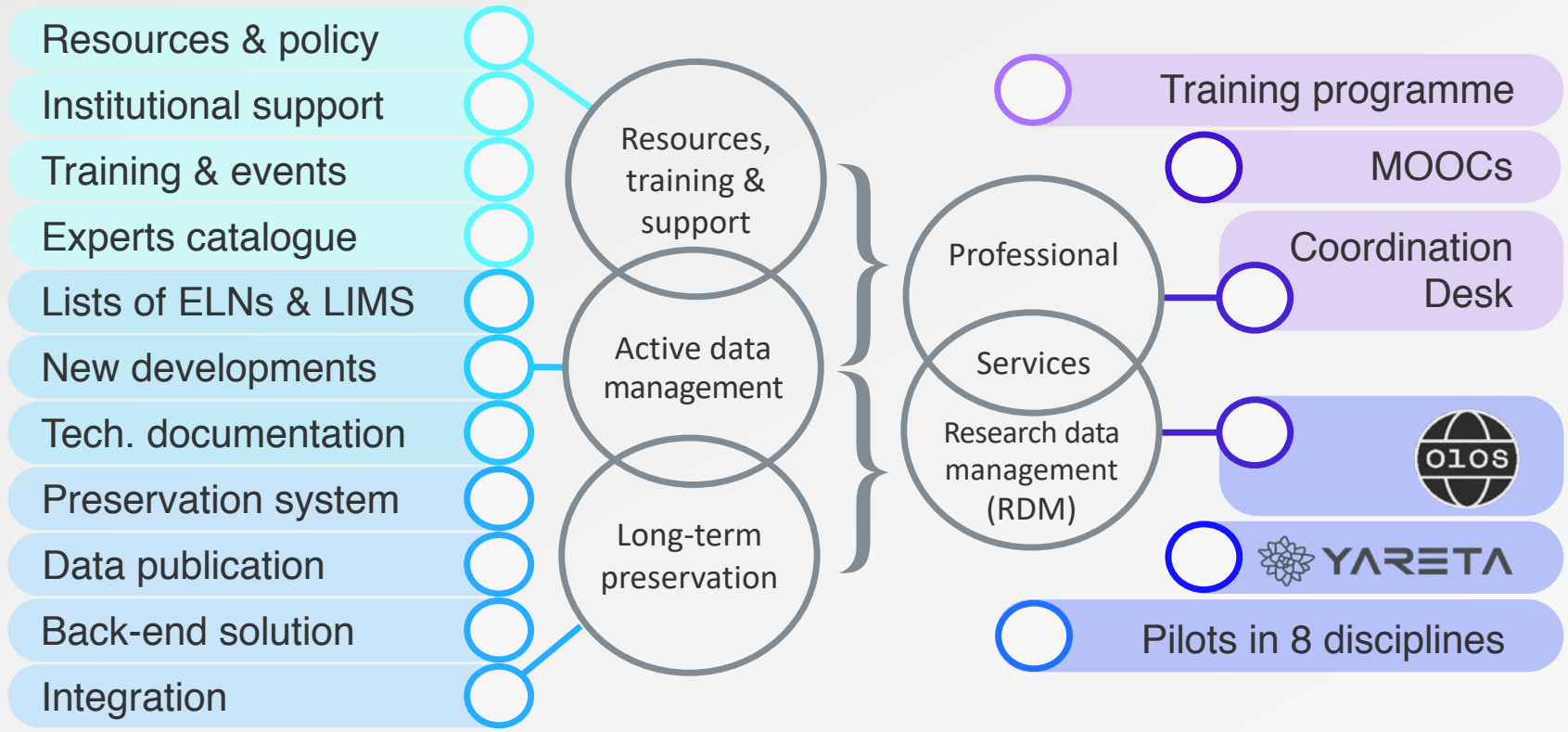
*Exploration of the whole life-cycle*

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*From prototypes to services*

Program CUS P-2 ..... Program Swissuniversities P-5 .....





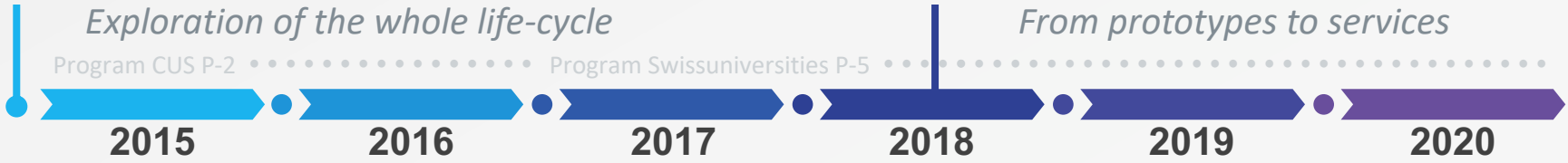
**DLCM Phase 1 (01.08.2015-31.07.2018)**

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*From prototypes to services*



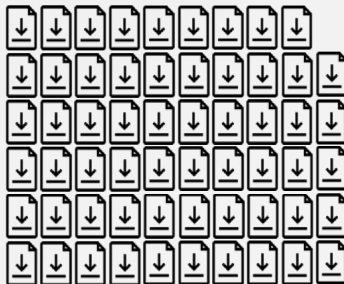
# 2015-2018

# Phase 1

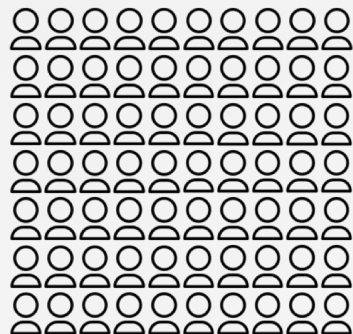
**25+** presentations in national & international conferences

**2** Swiss Research Data Days

**23** articles & book chapters



**59**  
deliverables

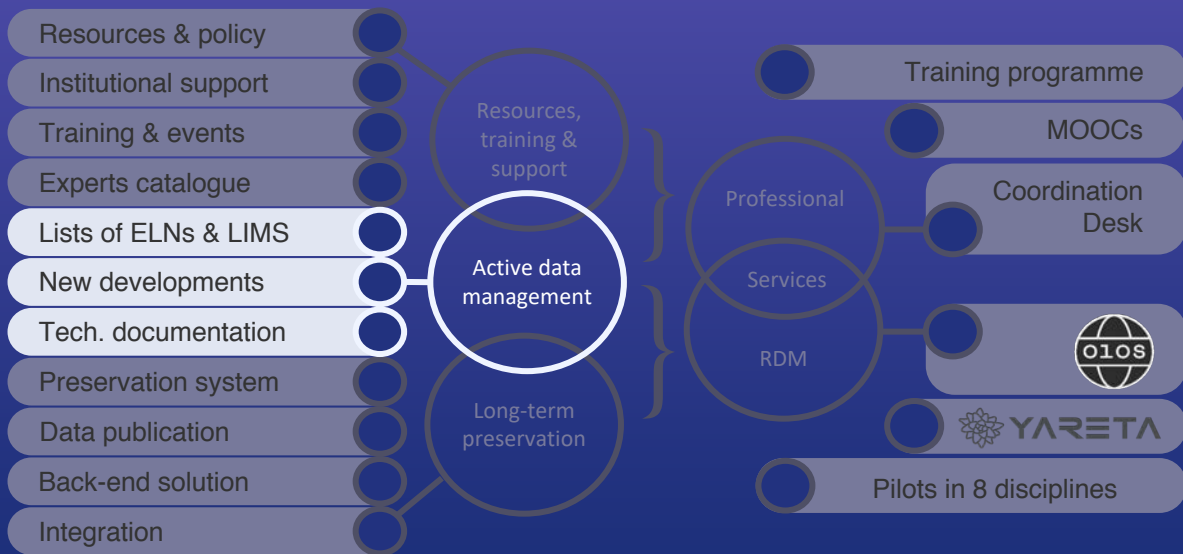


**115** workshops, lectures & training sessions

**60** training sessions on the DMP of the SNSF

**70**  
members

**1'969** researchers trained in RDM & DMP



# Active Data Management

*Phase 1 (2015-2018)*

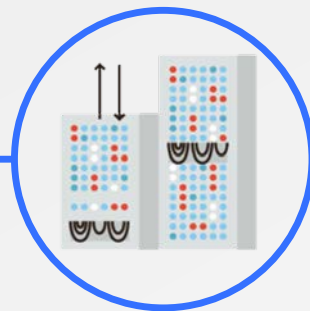
# Active Data Management



Sample preparation



Measurement



Analysis



Publication

*Research workflow in experimental & computational labs*

ELNs: Electronic Lab Notebooks  
LIMS: Laboratory Information  
Management Systems



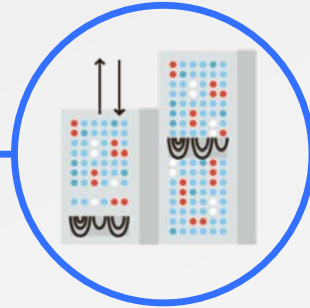
# Active Data Management



Sample preparation



Measurement



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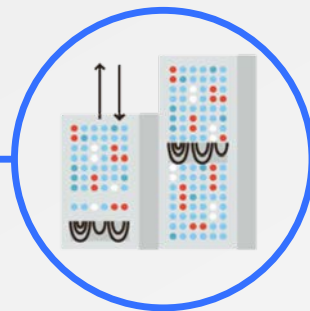
# Active Data Management



Sample preparation



Measurement

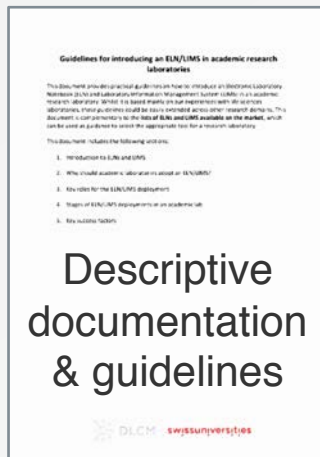
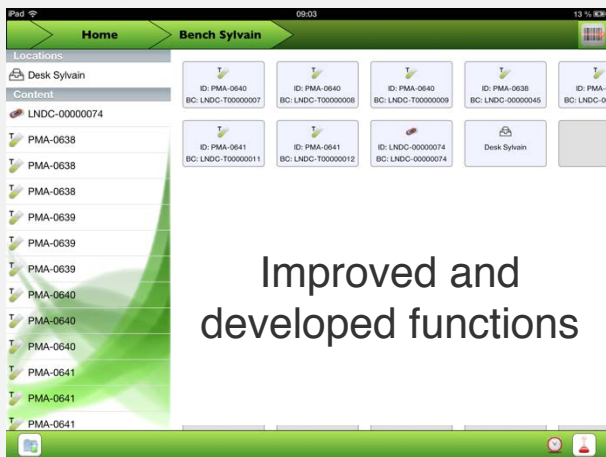


Analysis



Publication

*Research workflow in experimental & computational labs*



Descriptive documentation & guidelines



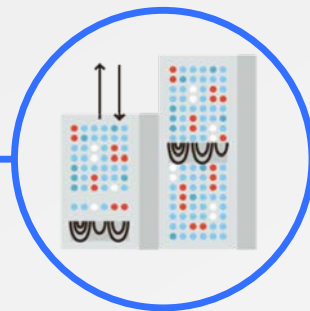
# Active Data Management



Sample preparation



Measurement

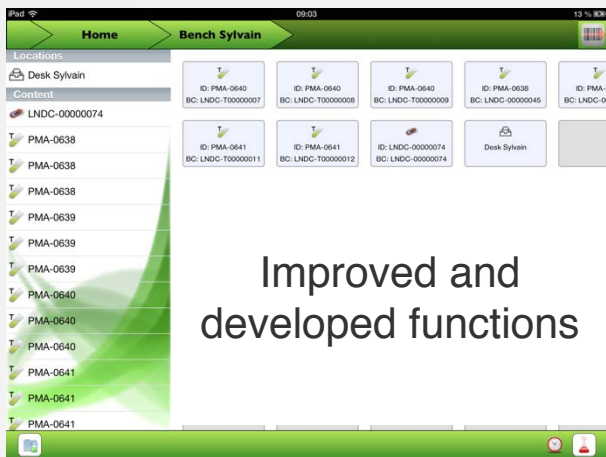


Analysis

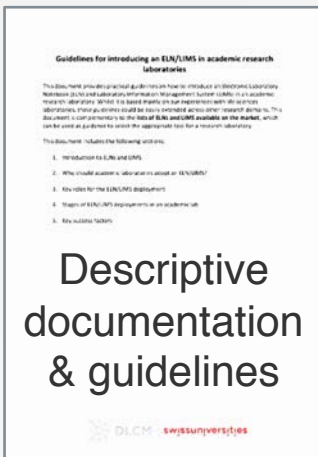


Publication

*Research workflow in experimental & computational labs*

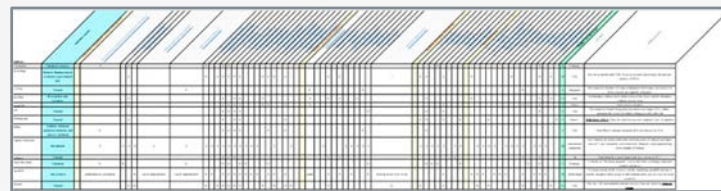


Improved and developed functions



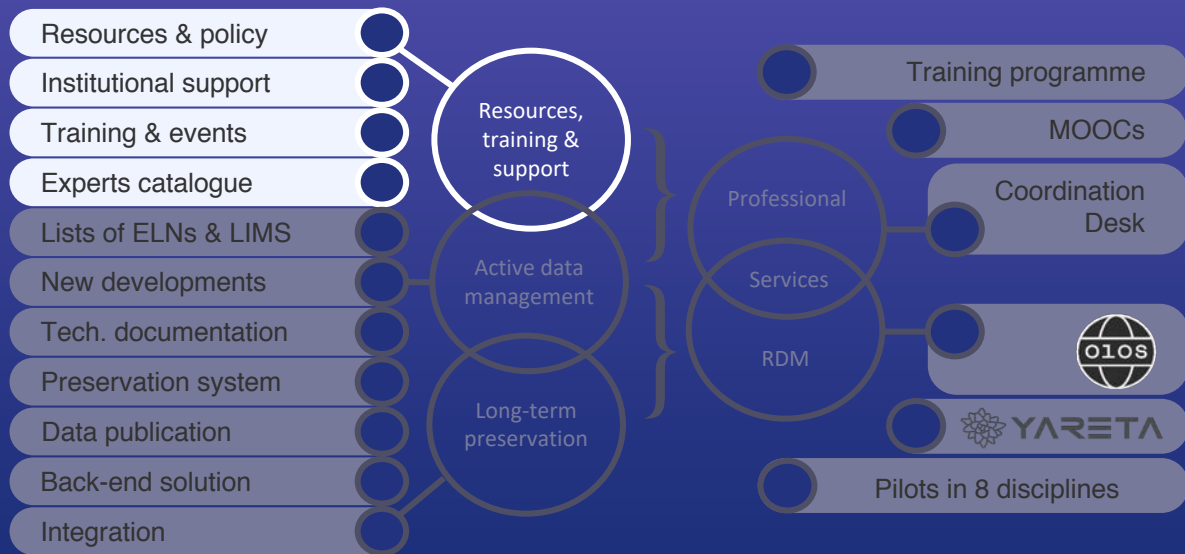
Descriptive documentation & guidelines

ELNs: Electronic Lab Notebooks  
LIMS: Laboratory Information Management Systems



2 lists of ELNs & LIMS solutions

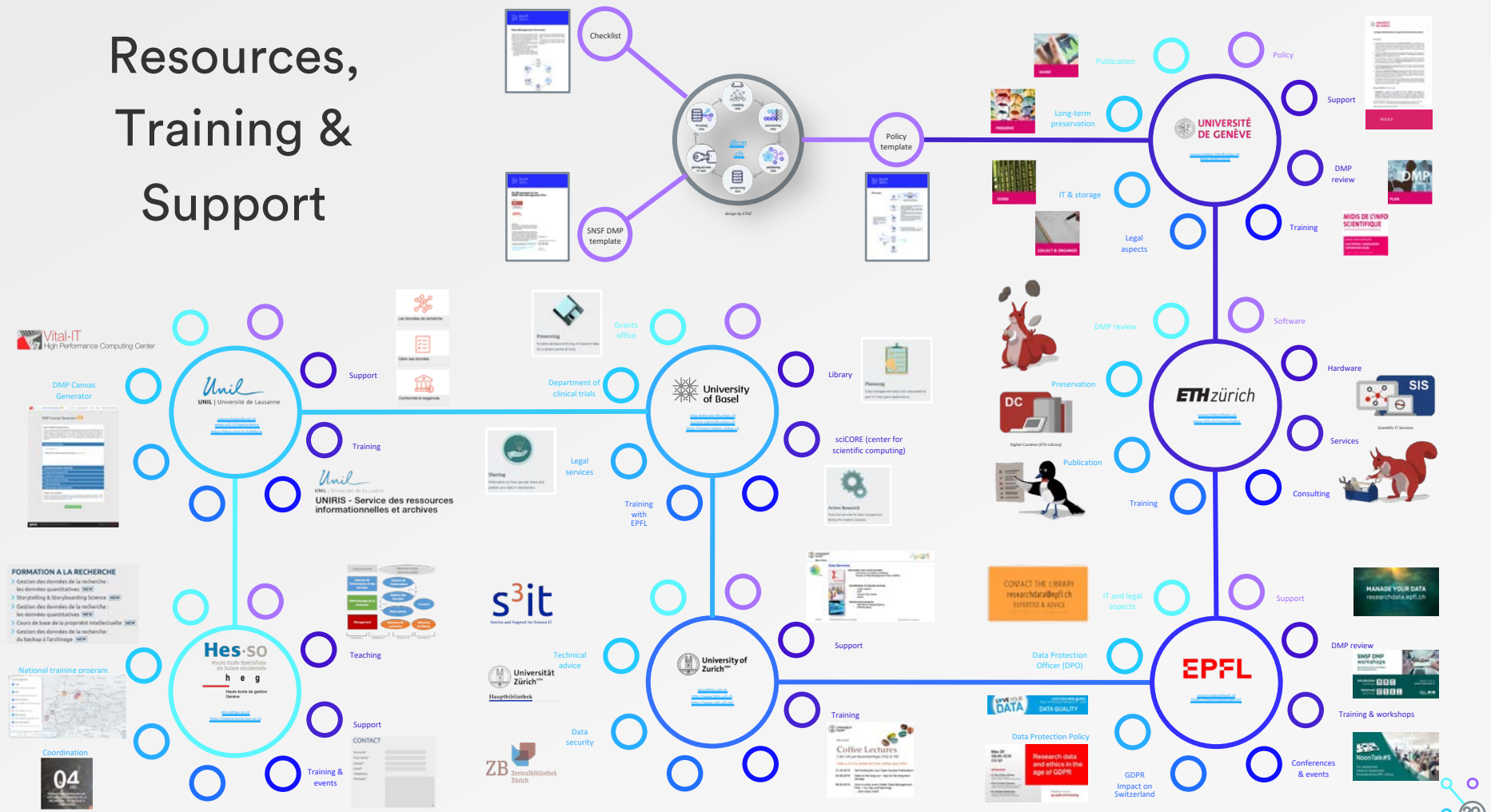




# Resources, Training & Support

*Phase 1 (2015-2018)*

# Resources, Training & Support



# Resources

Checklist



[dlcm.ch](http://dlcm.ch)

Policy template

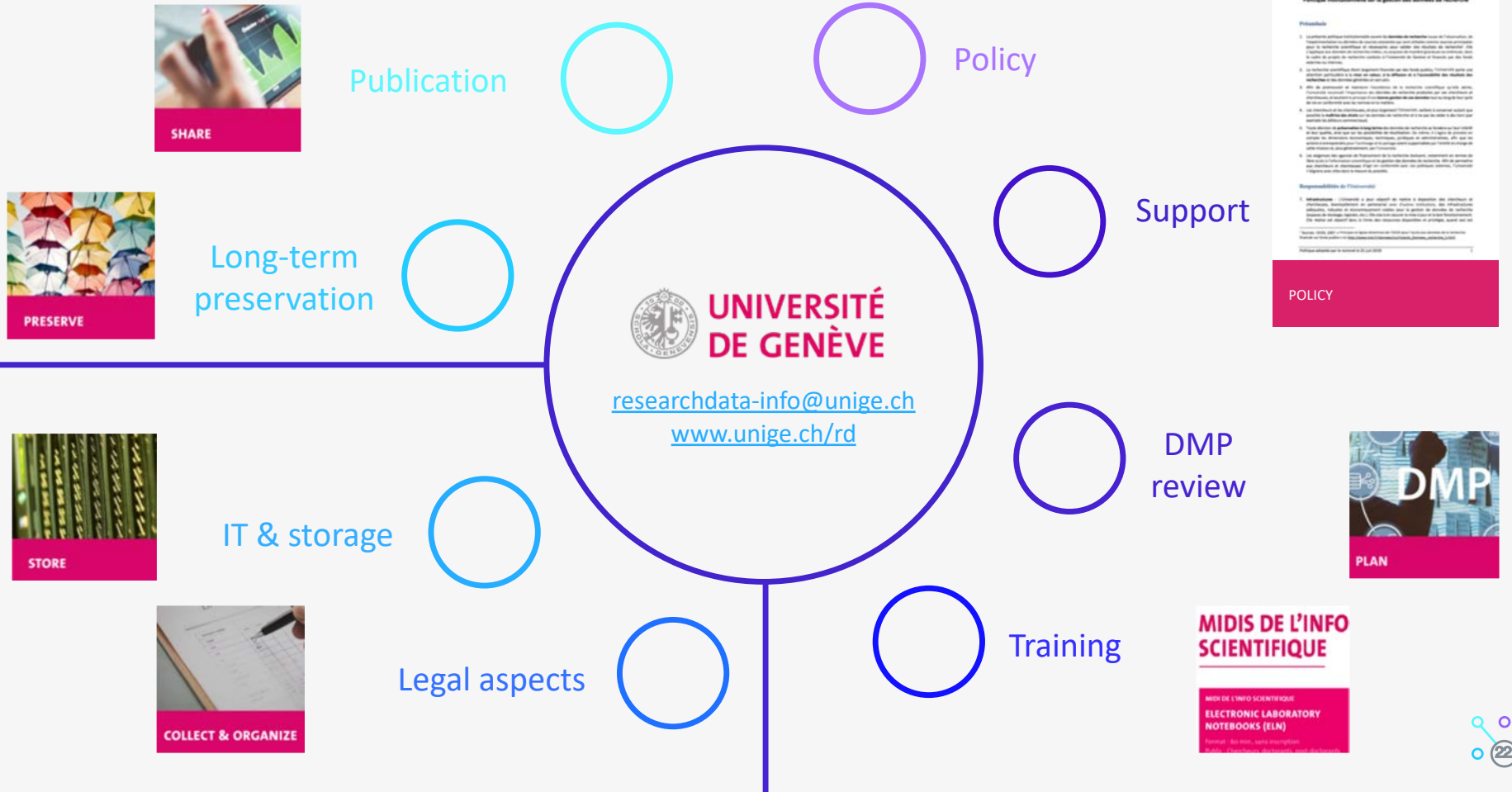
SNSF  
DMP  
template



design by ETHZ



# Institutional support in 2015-2018 | Phase 1





DMP review



Software



Hardware



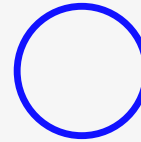
Scientific IT Services



Services



Consulting



Training



Publication



Digital Curation (ETH Library)



Preservation



**ETH** zürich

[researchdata@ethz.ch](mailto:researchdata@ethz.ch)  
[www.ethz.ch/researchdata](http://www.ethz.ch/researchdata)

CONTACT THE LIBRARY  
researchdata@epfl.ch  
EXPERTISE & ADVICE

IT and legal  
aspects

Support

MANAGE YOUR DATA  
researchdata.epfl.ch

Data Protection  
Officer (DPO)

DMP review

**EPFL**

[researchdata@epfl.ch](mailto:researchdata@epfl.ch)  
<https://researchdata.epfl.ch/>

**NSF DMP  
workshops**  
Swiss National Science Foundation  
Data Management Plan



Introduction  
workshops 14 AUG 16 AUG 17 AUG

Register now on  
[researchdata.epfl.ch](https://researchdata.epfl.ch)

Advanced  
workshops 27 AUG 4 SEP 6 SEP 7 SEP

BIBLIOTHEQUE

Training & workshops

Data Protection Policy

NoonTalk#5

For researchers  
Made by researchers  
Empowered by EPFL Library

GDPR Impact  
on Switzerland

Conferences  
& events



May 28  
08:45-12:15  
CO 121

Research data  
and ethics in the  
age of GDPR

**SPEAKERS**

- **Dr. Paul-Olivier Dehayo**  
Professor of Personalization  
Board member at MyData Global Network
- **Prof. Carmela Troncoso**  
Head of the EPFL Research Unit focused on  
secure and privacy-preserving systems
- **Dr. Caroline Vandevyver**  
Head of the EPFL Research Office  
President of the EPFL School Assembly

Register now on  
[go.epfl.ch/training](https://go.epfl.ch/training)



# s<sup>3</sup>it

Service and Support for Science IT



Universität  
Zürich<sup>UZH</sup>

Hauptbibliothek

ZB  
Zentralbibliothek  
Zürich

Technical  
advice

Data  
security



University of  
Zurich<sup>UZH</sup>

[data@hbz.uzh.ch](mailto:data@hbz.uzh.ch)

<http://www.data.uzh.ch>

<https://www.s3it.uzh.ch/>

Support

Training

University of Zurich<sup>UZH</sup>  
Main Library

### Data Services

- Information and communication**
  - Individual counselling (Infodesk)
  - Review of Data Management Plans (DMPs)
- Coordination of relevant services**
  - Legal support
  - S3IT
  - Clinical Trial Center
  - others
- Infrastructure projects**
  - NIE -INE for Digital Editions
  - SWISSUBase

5/10/2019 UZH Meet Us! Open Access in your research! Photo: Open Source via unsplash.com

University of Zurich<sup>UZH</sup>  
Main Library

### Coffee Lectures

1:30-1:45 pm Dozentenfoyer (Y22-G-74)

Take a 15 min break for free coffee and info!

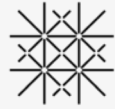
- 21.05.2019 Get funding for your Open Access Publication
- 05.06.2019 Data on the long run – tips for the long-term storage
- 06.06.2019 How to write (even) better Data Management Plan – Our tips and learnings ... and many more!



**Preserving**  
Funders demand archiving of research data for a certain period of time.

Grants office

Department of clinical trials




**University of Basel**

[Silke.Bellanger@unibas.ch](mailto:Silke.Bellanger@unibas.ch)

[scicore-admin@unibas.ch](mailto:scicore-admin@unibas.ch)

<https://researchdata.unibas.ch>


Library



**Planning**  
Data management plans are requested as part of most grant applications.

sciCORE (center for scientific computing)

Legal services



**Sharing**  
Information on how you can share and publish your data in repositories.

Training with EPFL



**Active Research**  
Tools and services for data management during the research process.

## DMP Canvas Generator



The screenshot shows the 'DMP Canvas Generator' web application. At the top, there is a navigation bar with 'UNIL CH' and 'DMP Canvas Generator' on the left, and 'Home', 'Administration', 'Help', and 'Contact' on the right. The main content area is titled 'DMP Canvas Generator' and includes an 'About the DMP Canvas Generator' section. Below this, there are several sections: 'Project name and description' with a text input field, 'A. Data that will be collected / generated', 'B. Analysis that will be generated', 'C. Questions on data collection', 'D. Data documentation and metadata', 'E. Ethics and legal issues', and 'F. Data preservation, sharing and reusability'. At the bottom, there is a 'Contact us for questions' section and a 'Download DMP Canvas 3' button.



Les données de recherche



Gérer ses données



Conformité et exigences

Support

Training



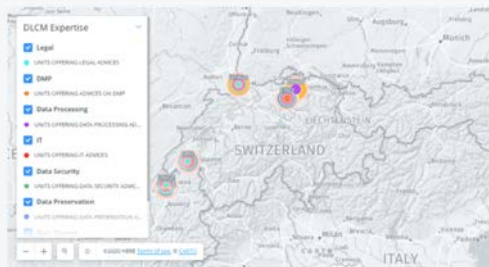
UNIL | Université de Lausanne

**UNIRIS - Service des ressources  
informationnelles et archives**

## FORMATION A LA RECHERCHE

- > Gestion des données de la recherche : les données quantitatives **NEW**
- > Storytelling & Storyboarding Science **NEW**
- > Gestion des données de la recherche : les données quantitatives **NEW**
- > Cours de base de la propriété intellectuelle **NEW**
- > Gestion des données de la recherche : du backup à l'archivage **NEW**

## National training program



## Coordination Desk



# Hes·SO

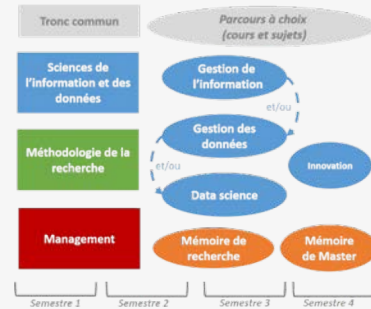
Haute Ecole Spécialisée  
de Suisse occidentale

h e g

Haute école de gestion  
Genève

[d lcm@hes-so.ch](mailto:d lcm@hes-so.ch)

<https://openscience.hes-so.ch>



## Teaching

## Support

## Training & events

### CONTACT

Surname\*

First name\*

School\*

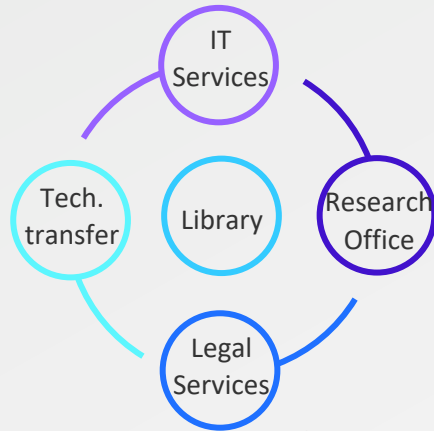
Email\*

Telephone

Message\*

# Institutional support – Organisation

2015-2018 | Phase 1



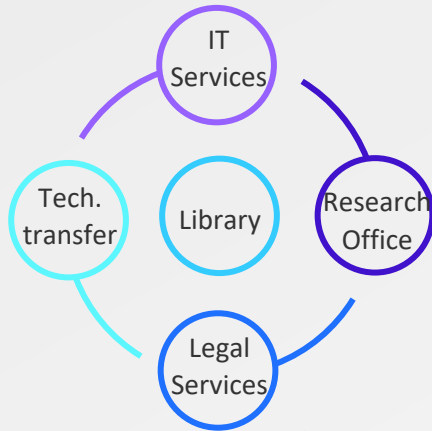
**EPFL**



UNIVERSITÉ  
DE GENÈVE

# Institutional support – Organisation

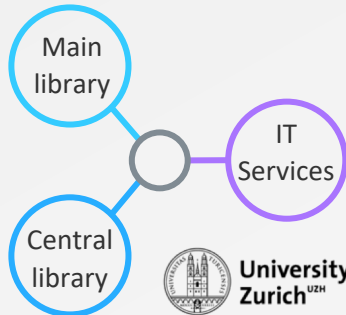
## 2015-2018 | Phase 1



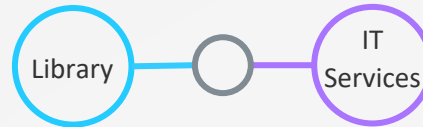
**EPFL**



UNIVERSITÉ  
DE GENÈVE



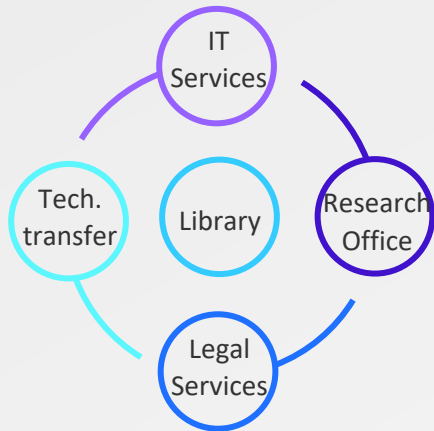
University of  
Zurich <sup>UZH</sup>



**ETH** zürich

# Institutional support – Organisation

## 2015-2018 | Phase 1



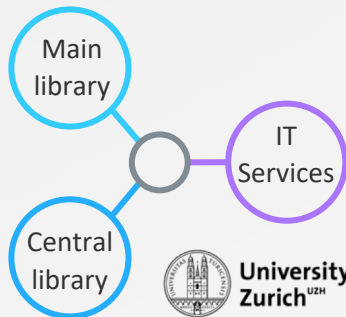
**EPFL**



UNIVERSITÉ  
DE GENÈVE



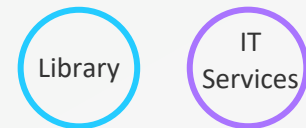
University  
of Basel



University of  
Zurich <sup>UZH</sup>



**ETH** zürich

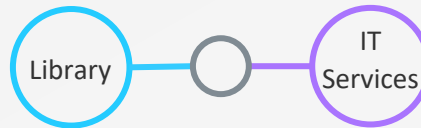
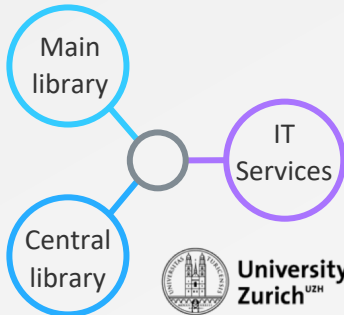
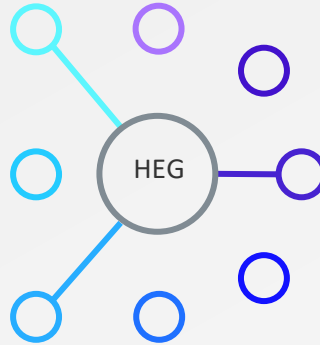
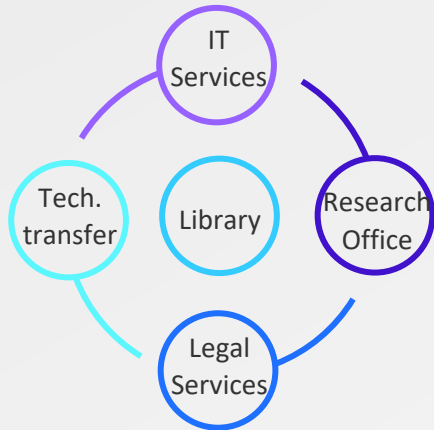


*Unil*

UNIL | Université de Lausanne

# Institutional support – Organisation

## 2015-2018 | Phase 1



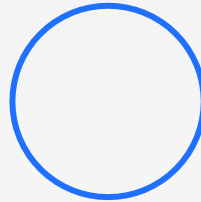
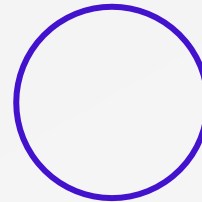
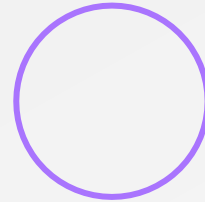


# Training & events – Typology

## 2015-2018 | Phase 1

### Interactive Workshop

- General overview of RDM & DMP
- 1.5 hours
- 2 x per year & upon request
- English, German & French

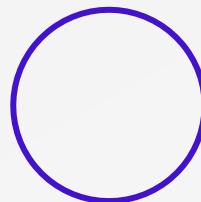


# Training & events – Typology

## 2015-2018 | Phase 1

### Interactive Workshop

- General overview of RDM & DMP
- 1.5 hours
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- English, German & French



### Tailored Training

- Comprehensive training on RDM
- 0.5-1 day
- 2 x per year & upon request
- In collaboration with IT Services

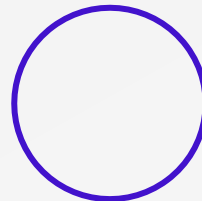


# Training & events – Typology

## 2015-2018 | Phase 1

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### Tailored Training

- Comprehensive training on RDM
- 0.5-1 day
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### Coffee lectures

- Specific RDM topics
- 15-30 minutes
- During lunch or coffee break

# Training & events – Typology

## 2015-2018 | Phase 1

### Interactive Workshop

- General overview of RDM & DMP
- 1.5 hours
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### Tailored Training

- Comprehensive training on RDM
- 0.5-1 day
- 2 x per year & upon request
- In collaboration with IT Services



### Webinars

- Specific RDM topics
- 30 minutes lecture
- 30 minutes Q&A

### Coffee lectures

- Specific RDM topics
- 15-30 minutes
- During lunch or coffee break

# Training & events – Typology

## 2015-2018 | Phase 1

### Interactive Workshop

- General overview of RDM & DMP
- 1.5 hours
- 2 x per year & upon request
- English, German & French



### One-in-one consulting

- RDM in general or DMP review
- 1 hour
- On demand



### Tailored Training

- Comprehensive training on RDM
- 0.5-1 day
- 2 x per year & upon request
- In collaboration with IT Services



### Webinars

- Specific RDM topics
- 30 minutes lecture
- 30 minutes Q&A

### Coffee lectures

- Specific RDM topics
- 15-30 minutes
- During lunch or coffee break

# Training & events – Numbers (1)

## 2015-2018 | Phase 1



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DE GENÈVE**

**EPFL**

**ETH** zürich

**Hes·SO**

Haute Ecole Spécialisée  
de Suisse occidentale

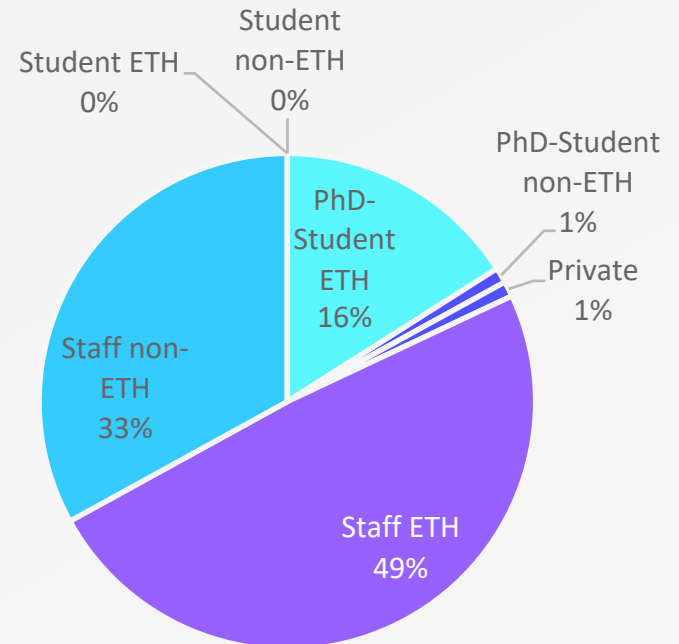
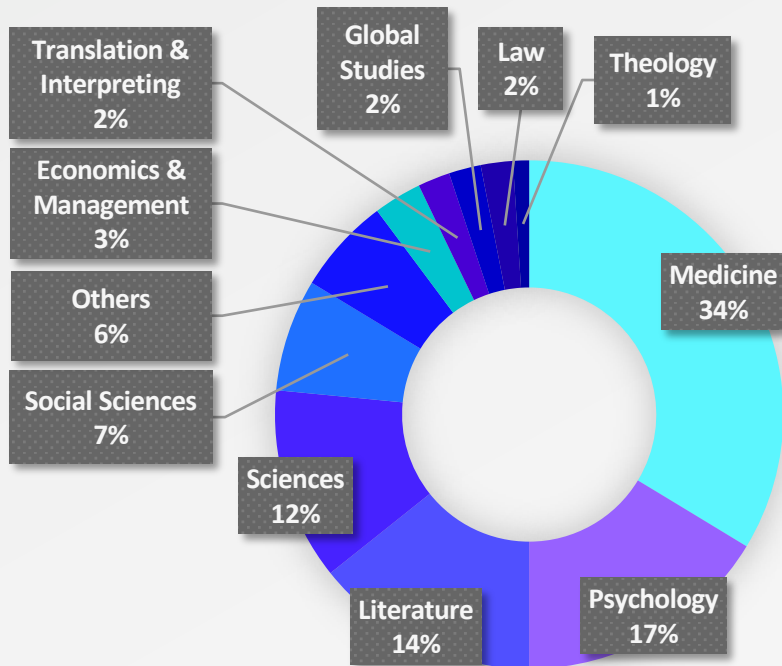
**h e g**

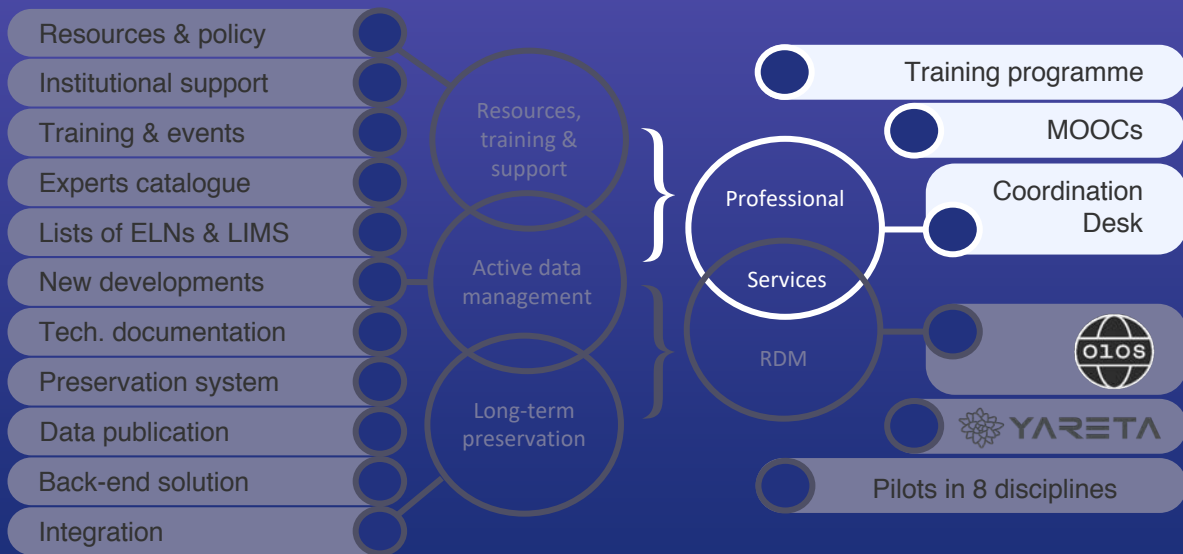
Haute école de gestion  
Genève

	UNIVERSITÉ DE GENÈVE	EPFL	ETH zürich	Hes·SO Haute Ecole Spécialisée de Suisse occidentale h e g Haute école de gestion Genève
<b>Training 2017</b>	<b>8</b> sessions <b>86</b> participants	<b>12</b> sessions <b>68</b> participants	<b>8</b> sessions <b>434</b> participants	<b>14</b> sessions <b>28</b> participants
<b>Training 2018</b>	<b>12</b> sessions <b>134</b> participants	<b>8</b> sessions <b>95</b> participants	<b>10</b> sessions <b>428</b> participants	<b>2</b> events <b>118</b> participants
<b>Support 2017</b>	<b>36</b> requests	<b>92</b> requests	<b>90</b> requests	<b>5</b> requests
<b>Support 2018</b>	<b>42</b> requests	<b>59</b> requests		<b>3</b> requests

# Training & events – Numbers (2)

## 2015-2018 | Phase 1





# Professional Services

*Phase 2 (2018-2020)*



# Professional Services



## Coordination desk

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Free 1<sup>st</sup> level of  
support

Multi-language

Resources (DMP,  
policies...)

[dlcm@hes-so.ch](mailto:dlcm@hes-so.ch)

Tailored training

# Professional Services



## Coordination desk

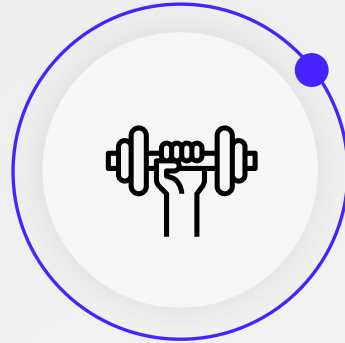
Free 1<sup>st</sup> level of support

Multi-language

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[dpcm@hes-so.ch](mailto:dpcm@hes-so.ch)

Tailored training



## Training program

[Publier en Open Access  
Intellectual property and sensitive data](#)  
8 November 2019

[Quantitative data](#)  
21 February 2020

[Qualitative data](#)  
8 April 2020

[From data backup  
to long-term preservation](#)  
4 December 2020

# Professional Services



## Coordination desk

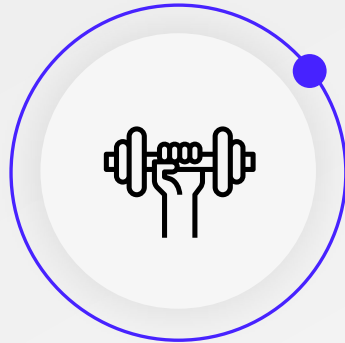
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[dpcm@hes-so.ch](mailto:dpcm@hes-so.ch)

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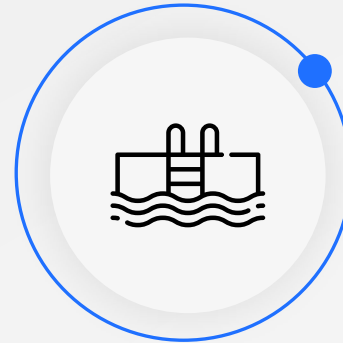
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## 3rd edition of #SRDD2020

“Emergent Approaches For  
Open Science”

22 October 2020

At HEG/HES-SO Geneva

# Professional Services



## Coordination desk

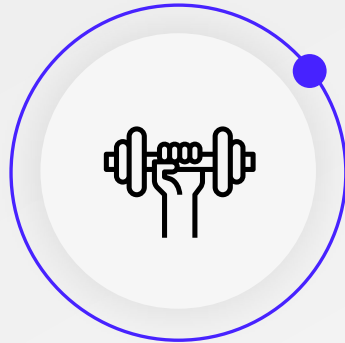
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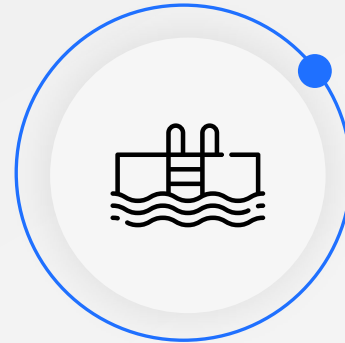
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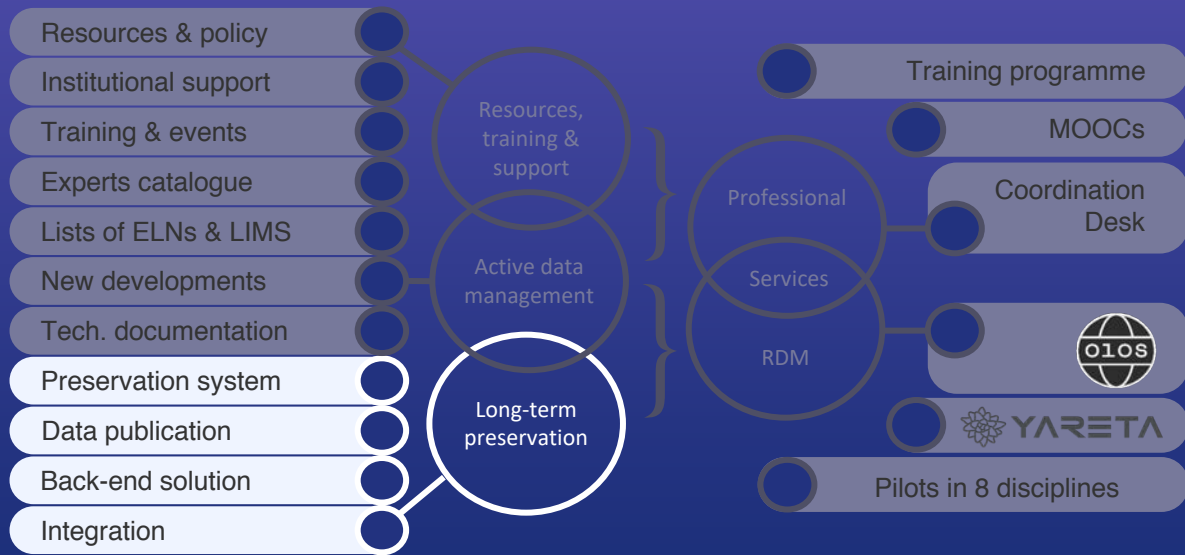
At HEG/HES-SO Geneva



## MOOC

Design of modules

Expert interviews



# Long-term preservation

*Phase 1 (2015-2018)*

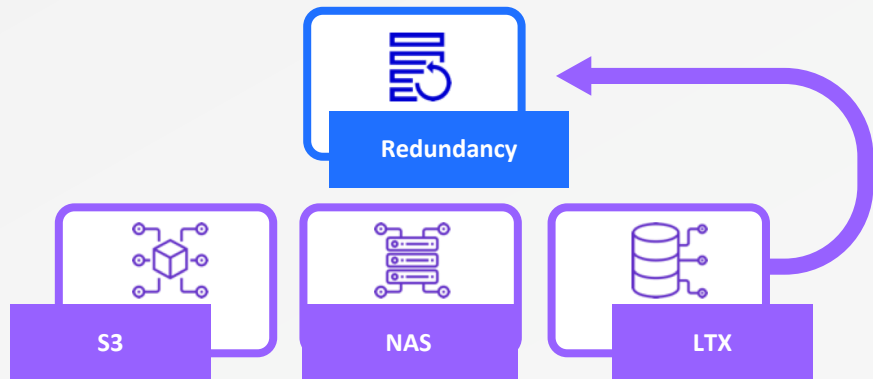
# Backup vs. Archiving

---

## BACKUP

**Insurance policy against unforeseen system failures**

- Incremental
- Multiple snapshots
- Retained on short periods of time
- Not searchable



# Backup vs. Archiving



## ARCHIVE

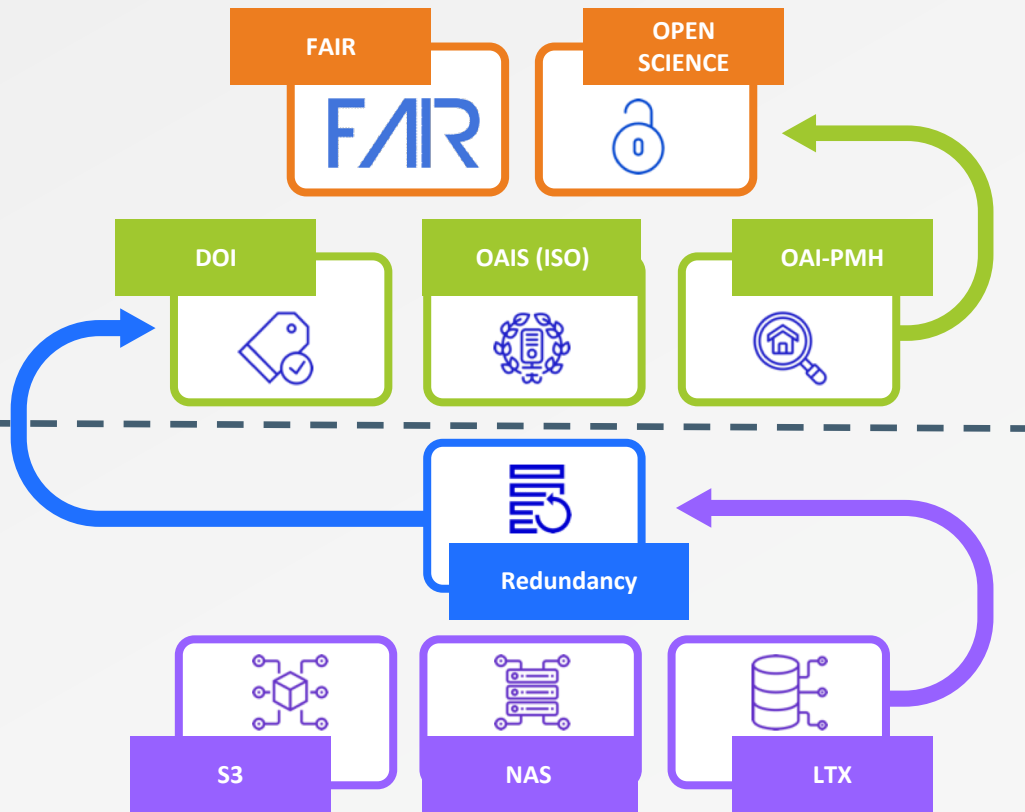
Preserve information as required by regulations and institutional policies

- Auditable
- Follows a life cycle
- Self-described
- Data integrity

## BACKUP

Insurance policy against unforeseen system failures

- Incremental
- Multiple snapshots
- Retained on short periods of time
- Not searchable

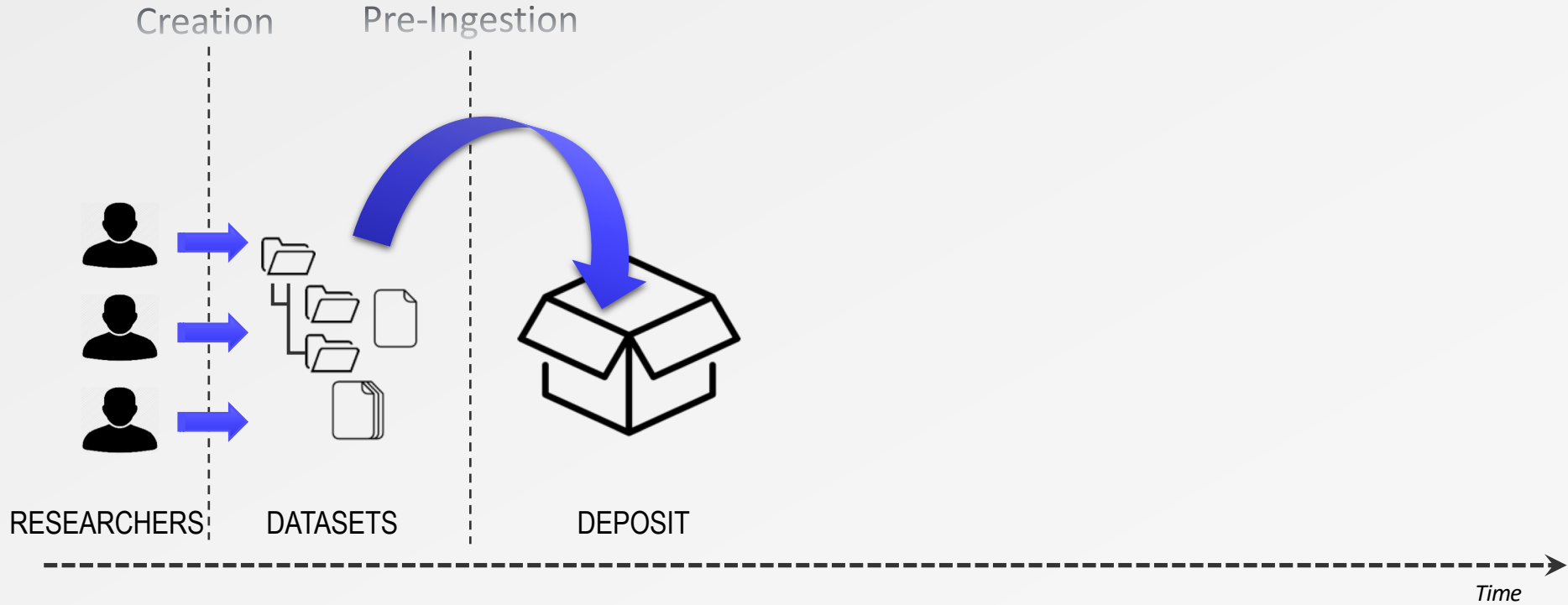


# Preserving Data

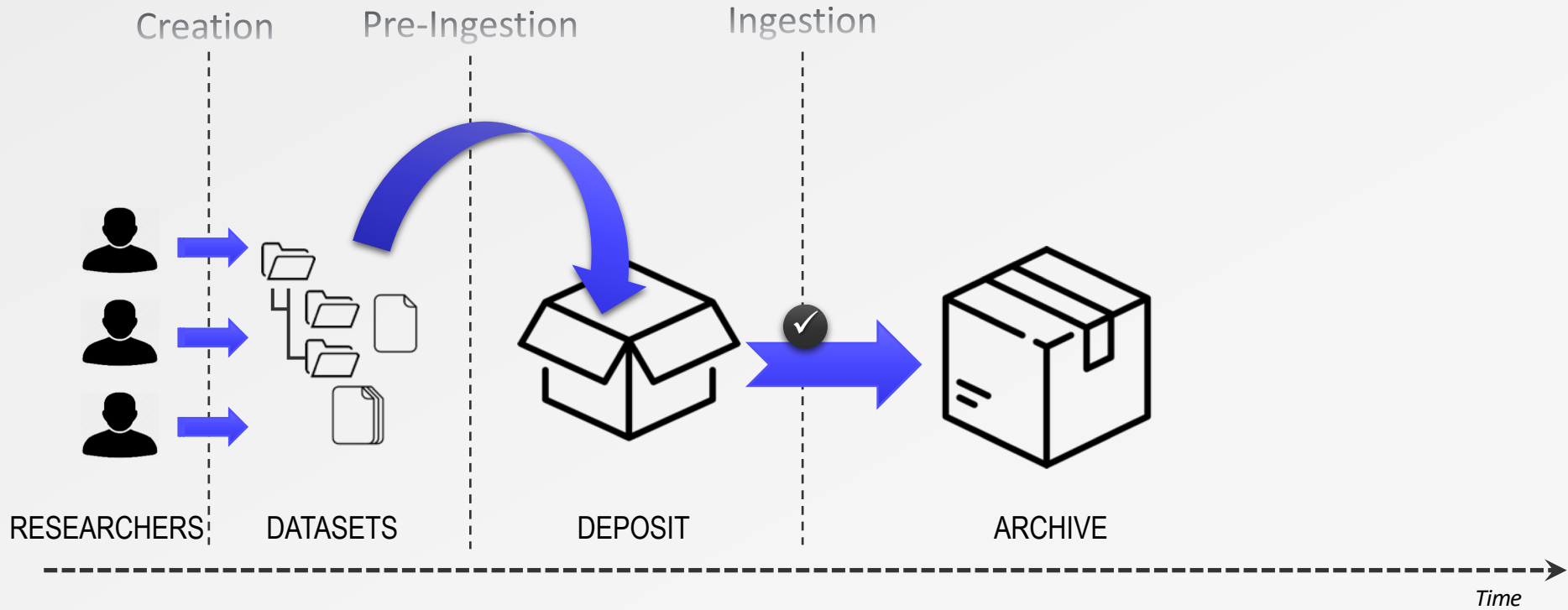




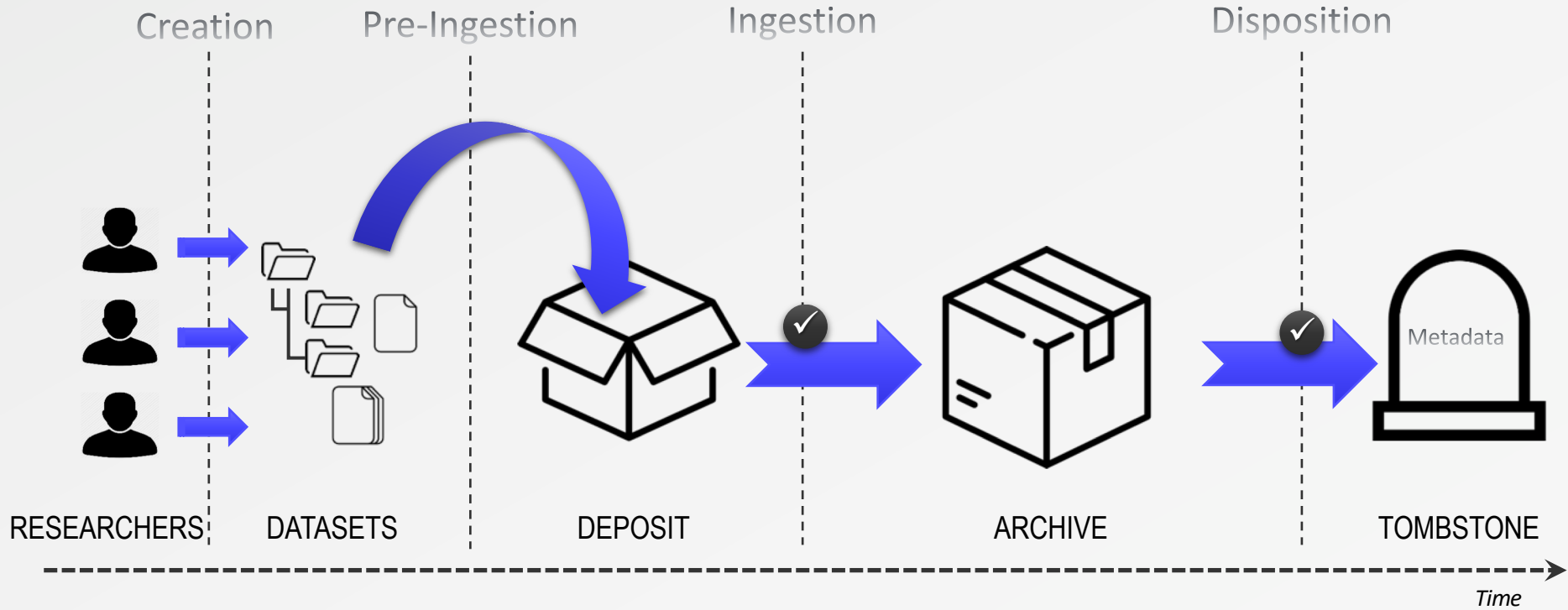
# Preserving Data



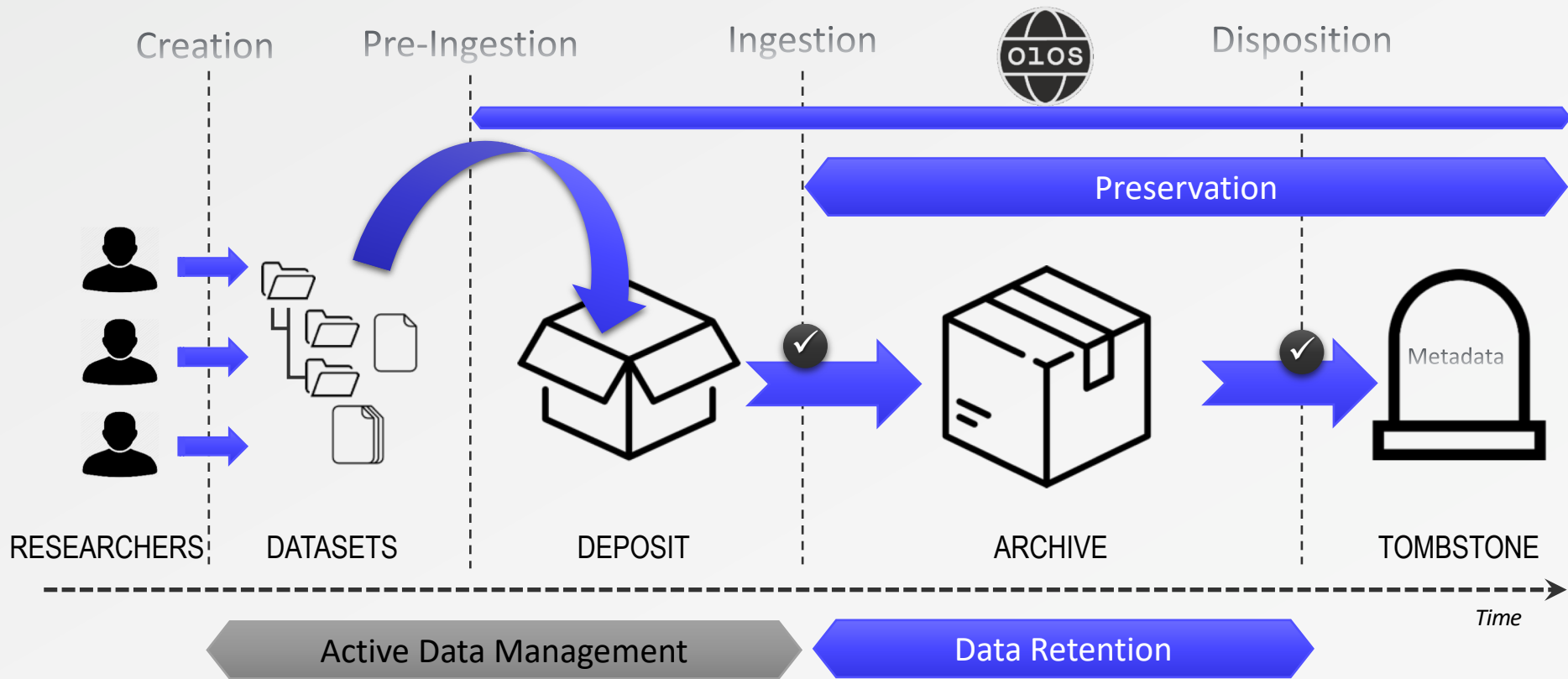
# Preserving Data



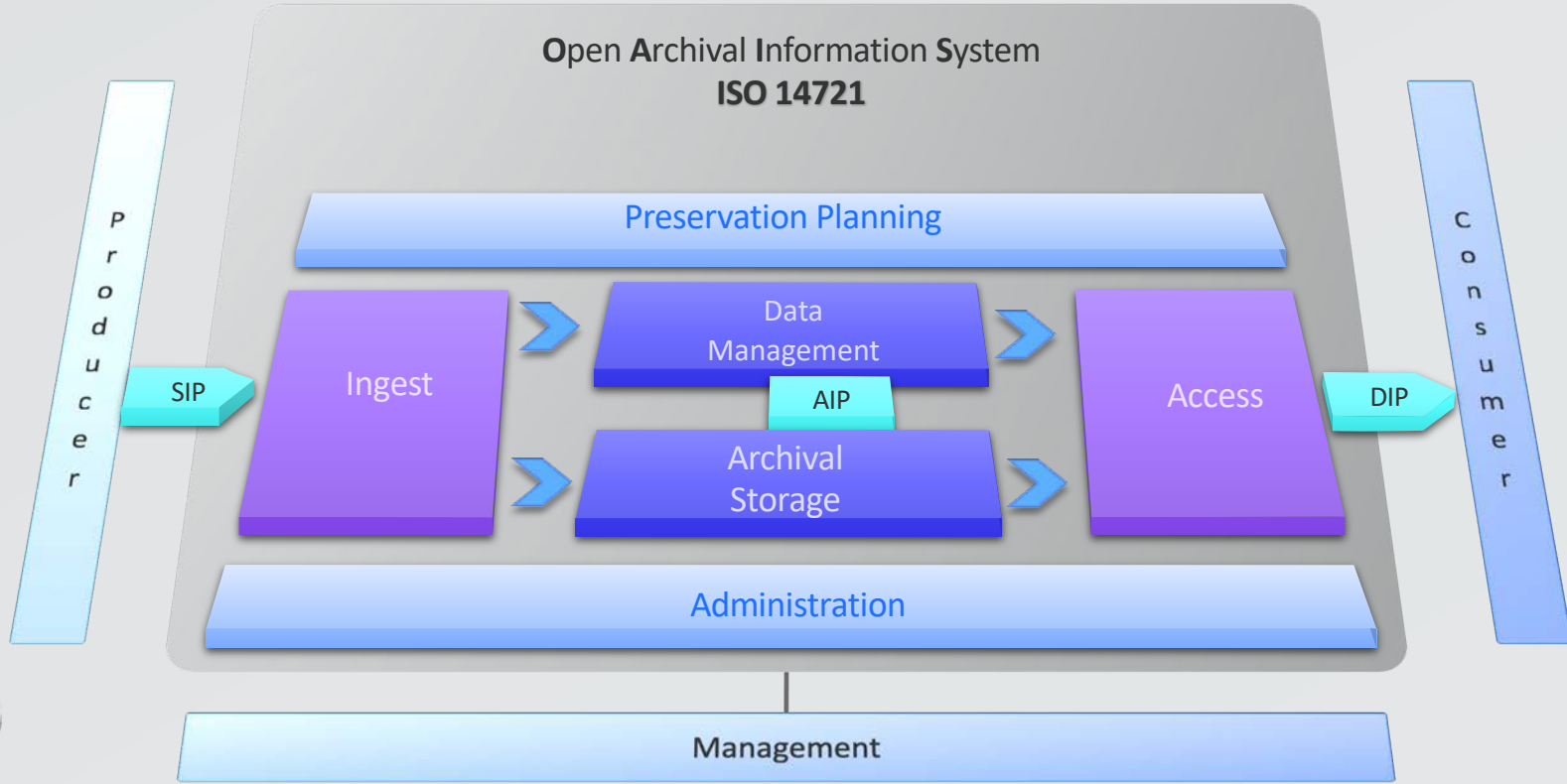
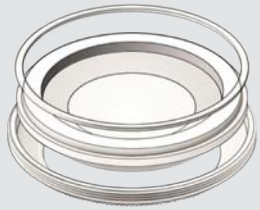
# Preserving Data

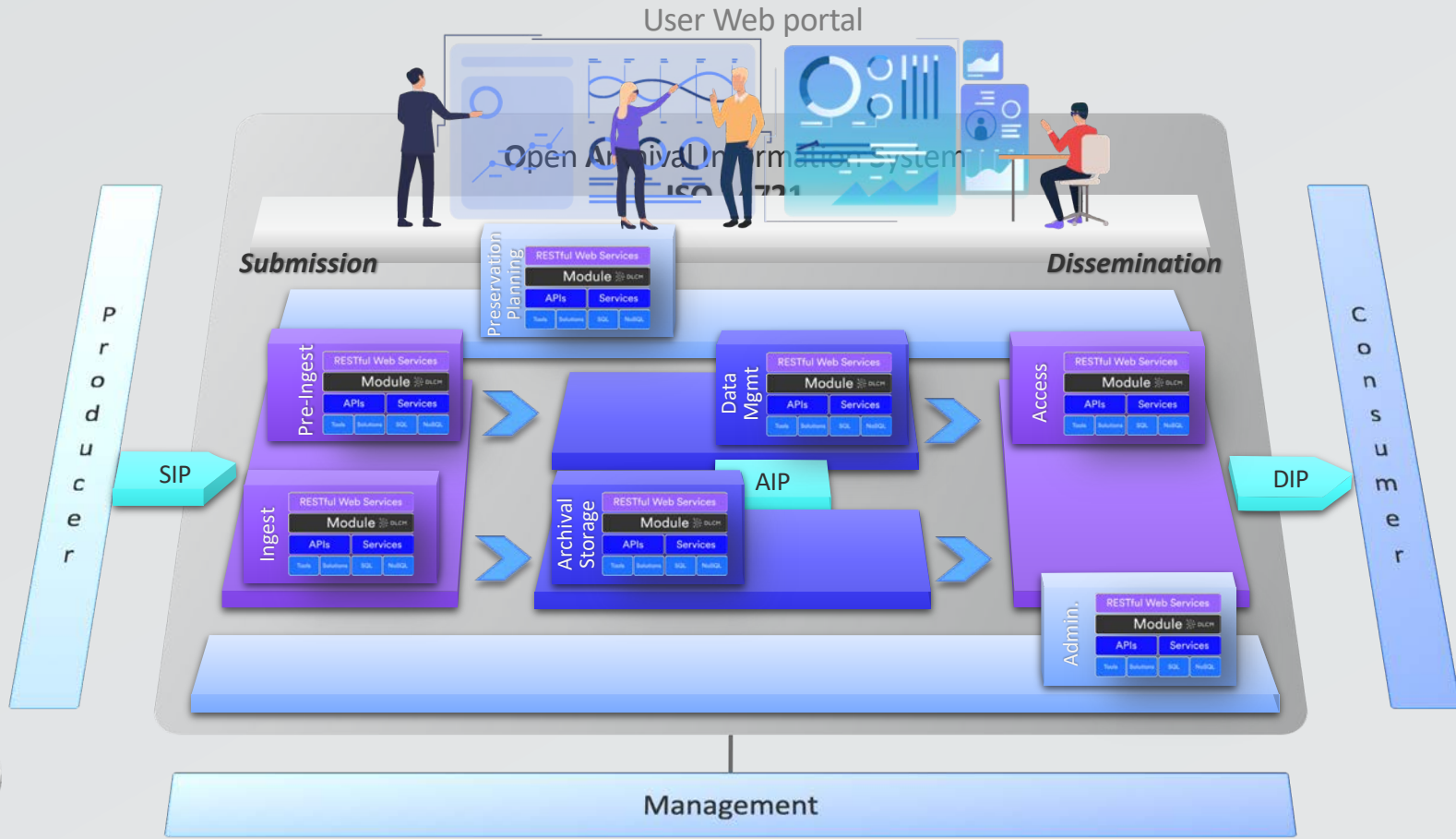


# Preserving Data



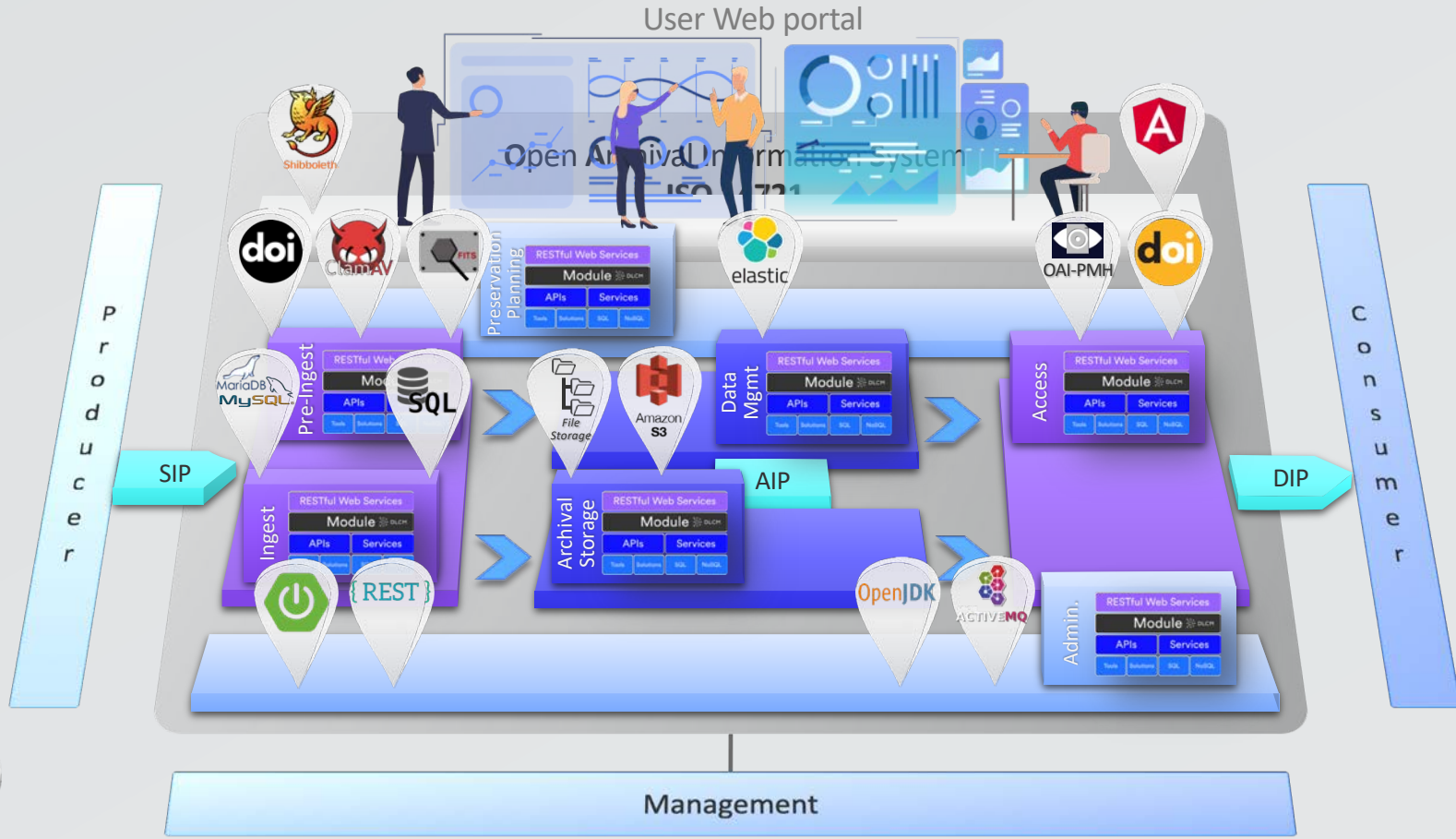
Based on [OAIS](#) Model (Open Archival Information System, ISO 14721)





# Innovative Design

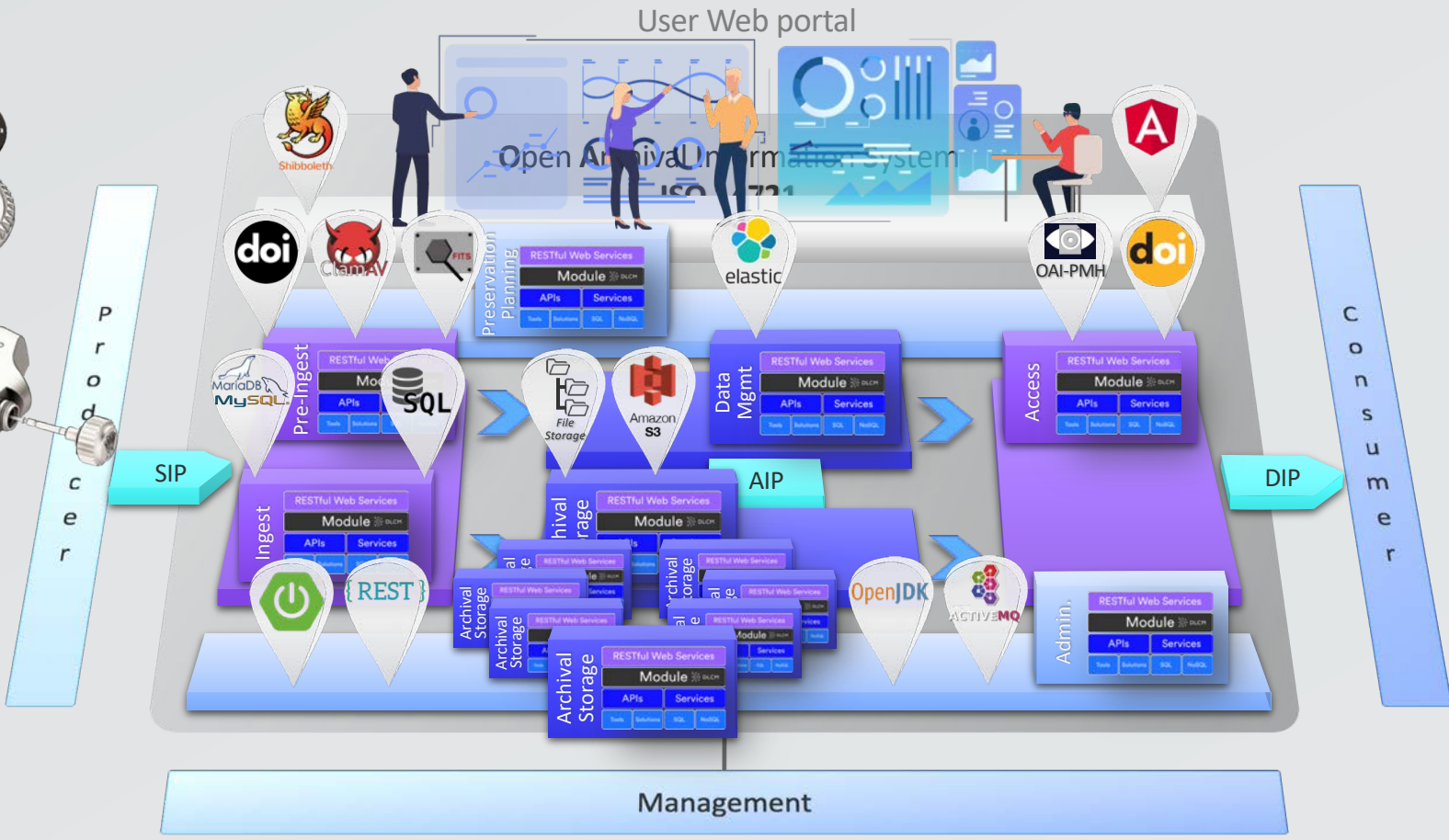
OAIS Model + Modular Architecture



# Innovative Design

OAIS Model + Modular Architecture + Open Tools

Image by Painting Valley, CC BY-NC 4.0

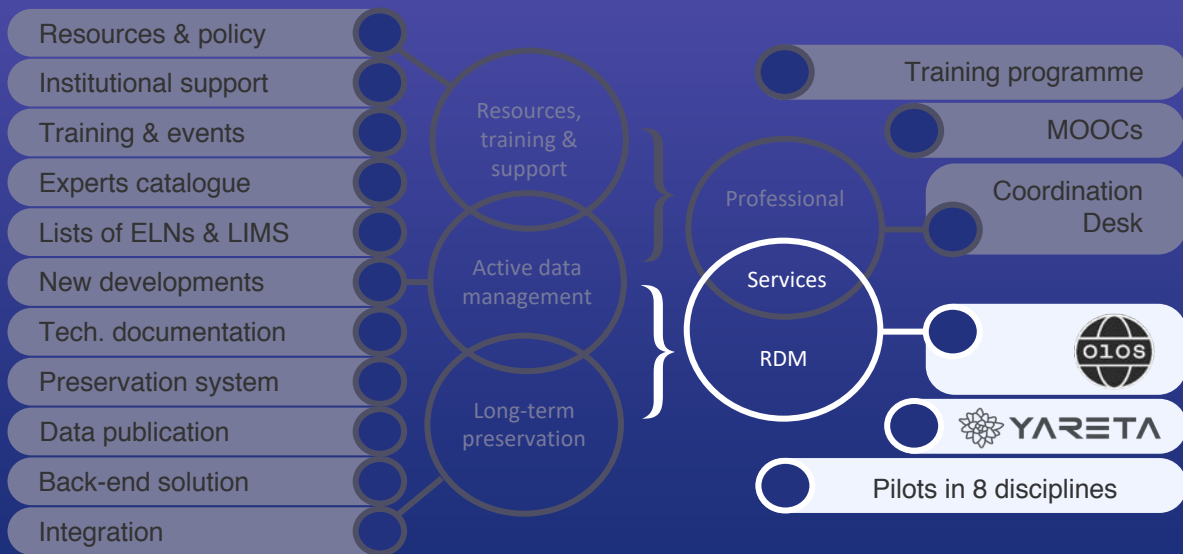


# Innovative Design

OAIS Model + Modular Architecture + Open Tools + Storage Network







# Research Data Management Services

*Phase 2 (2018-2020)*

# Research Data Management services

2015

Phase 1

2019

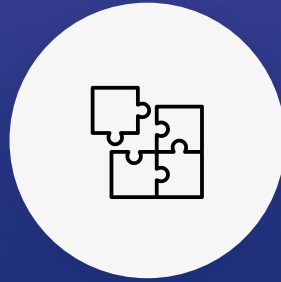
Phase 2

2020



## Preservation system

On-premise  
Cloud  
Back-ends



## Integration

Solution providers  
(eg. LIMS)  
Data centers  
Repositories



## Data publication

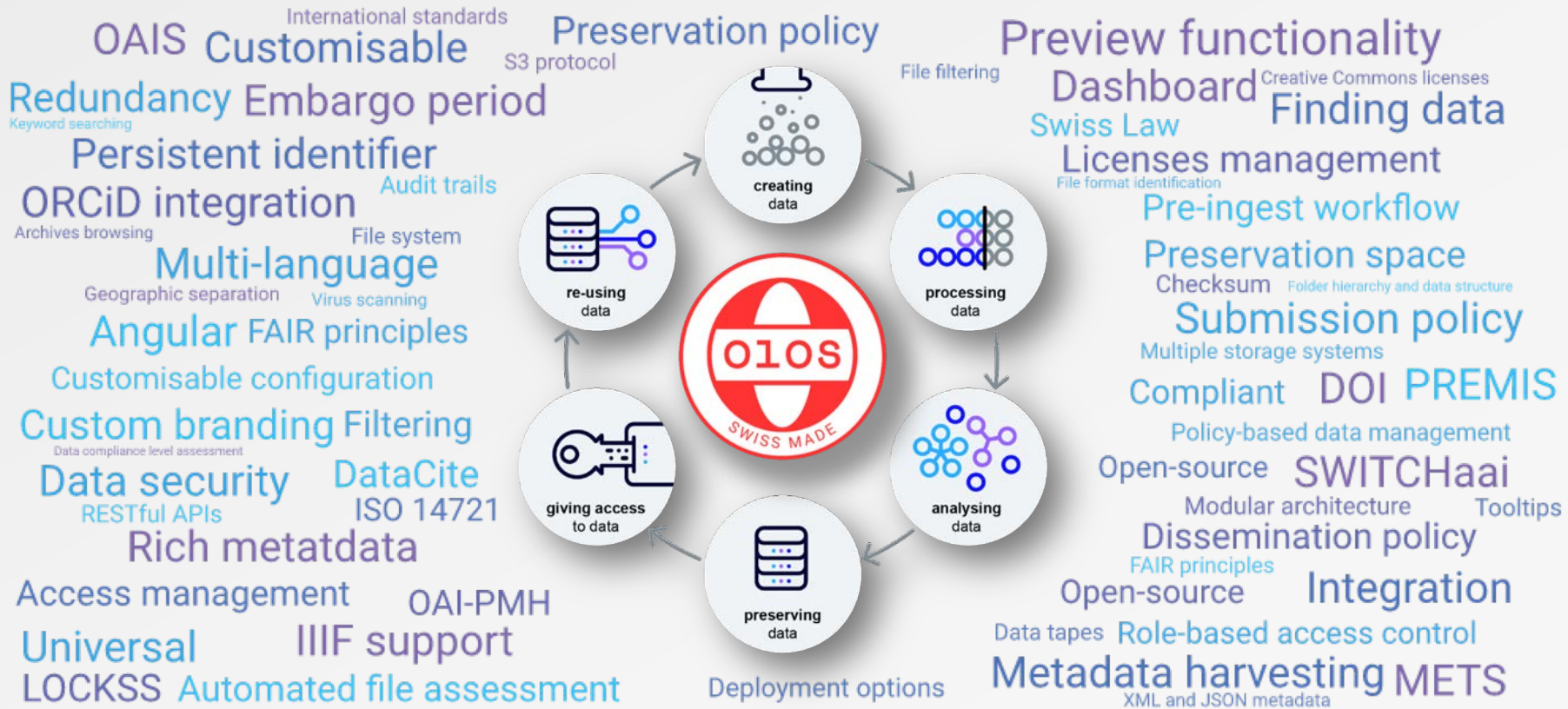
Unique identifier  
(DOI)  
Referencing  
OAI-PMH



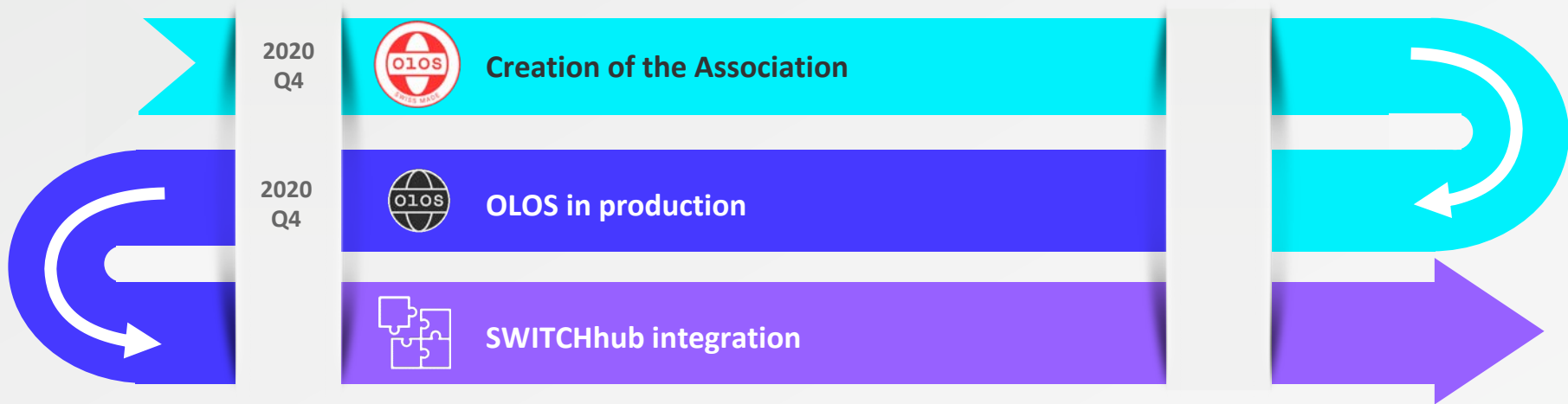
## Web portal

Submission  
Access  
Search  
Dashboard

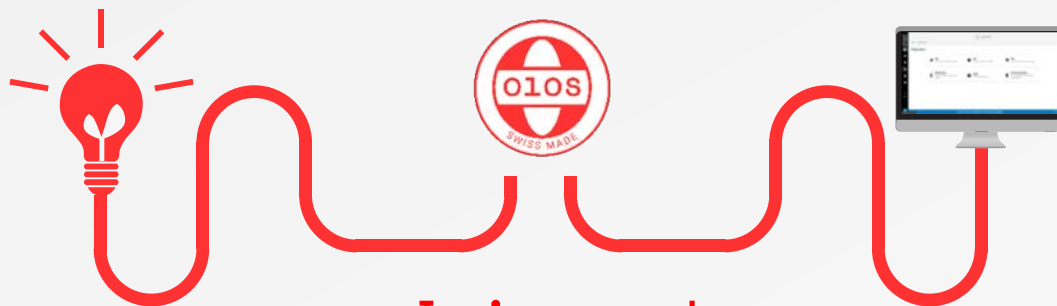
# OLOS . SWISS



# What next ?



Become a member of the Association!



Join us!

Become an OLOS beta tester!

# Become an beta tester



Go to <https://sandbox.dlcm.ch/>



## Angular Frontend

<https://sandbox.dlcm.ch/portal/>



## Applications

Administration ⓘ

Ingestion ⓘ

Storage 1 ⓘ

Storage 2 ⓘ

Access ⓘ

OAI-PMH



## DLCM Guides

Integration Guide

RESTful API Guide

DLCM Tools Guide

1. Log in with your institutional ID or SWITCH edu-ID
  - Choose the Angular Frontend (beta)
2. Send us an email so we can add you to a preservation space
3. Try it out and send us your feedback!

Email us at [info@dlcm.ch](mailto:info@dlcm.ch)

Note: DLCM Sandbox is a test environment. Data and metadata are not preserved and may be purged without prior notice. DOI numbers are fake.

# OLIOS . SWISS



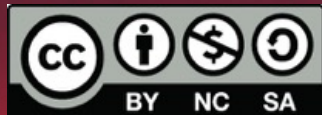
## The Swiss solution for managing research data



DLCM<sup>®</sup> | Mandated by **swissuniversities**

Lydie Echernier

[lydie.echernier@unige.ch](mailto:lydie.echernier@unige.ch)



Projet DLCM

Dr. Aude Dieudé, EPFL Library, 2018

Dr. Ana Sesartic Petrus, RDM and Digital Curation @ ETH Library, 2019

Bibliothèque de l'UNIGE, 2019

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