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# DARIAH-ERIC Towards a sustainable social and technical European eResearch Infrastructure for the Arts and Humanities

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► **To cite this version:**

Tibor Kalman, Eveline Wandl-Vogt. DARIAH-ERIC Towards a sustainable social and technical European eResearch Infrastructure for the Arts and Humanities. e-IRG Workshop, Nov 2014, Rome, Italy. hal-01081479

**HAL Id: hal-01081479**

**<https://inria.hal.science/hal-01081479>**

Submitted on 12 Nov 2014

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# DARIAH-ERIC

Towards a  
sustainable social and technical  
European eResearch Infrastructure  
for the Arts and Humanities

[DARIAH-ERIC](#) VCC1 e-Infrastructures Co-Heads  
Tibor Kálmán, [GWDG](#) & Eveline Wandl-Vogt, [AAS](#)

@ [eIRG](#) Workshop: Rome (IT), 10.11.2014



# Outline

- General Overview  
DARIAH-ERIC &  
Conceptual Outline  
eInfrastructures @ DARIAH-ERIC:  
history, administration,  
mission, challenges
- Technical Insight  
eInfrastructures @ DARIAH-ERIC:  
affiliated projects, collaboration,  
outcomes, results

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# General Overview DARIAH-ERIC

# Mission

DARIAH-ERIC aims to

enhance and support  
digitally-enabled research and teaching  
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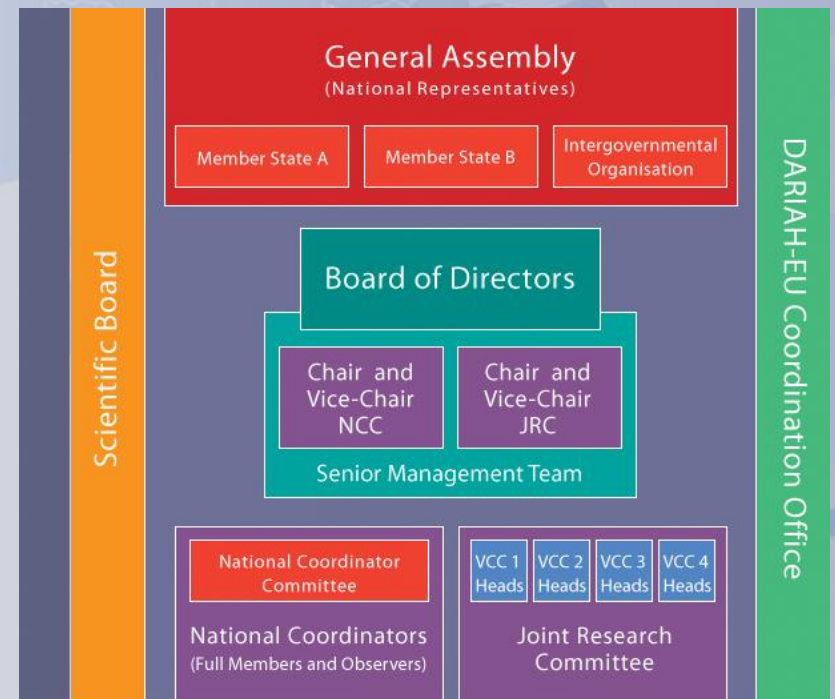
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# Organisational Framework

DARIAH-ERIC: a social & technical Infrastructure

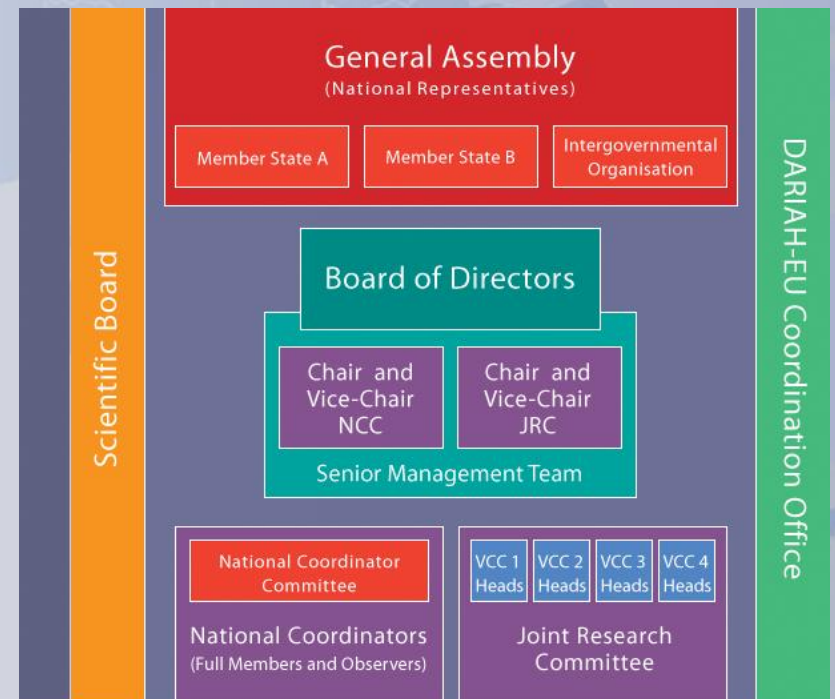
- People
- Information
- Expertise
- Knowledge
- Content
- Methods
- Tools
- Technologies



# Organisational Framework

DARIAH-ERIC: a **social** & **technical** Infrastructure

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# Brief history

- **2006**  
DARIAH @ ESFRI Roadmap
- **2008 – 2011:**  
Preparatory Phase project:  
*Preparing DARIAH*
- **2011 – 2013:**  
Transition Phase  
establishing the DARIAH-ERIC  
integrating national activities
- **2014-:**  
DARIAH-ERIC



# Funding members

| Founding Members |   |
|------------------|---|
| Austria          |    |
| Belgium          |    |
| Croatia          |    |
| Cyprus           |    |
| Denmark          |    |
| France           |    |
| Germany          |   |
| Greece           |  |

| Founding Members |  |
|------------------|--|
| Ireland          |   |
| Italy            |   |
| Luxembourg       |   |
| Malta            |   |
| Netherlands      |   |
| Serbia           |   |
| Slovenia         |  |

| Candidate countries |   |
|---------------------|---|
| Lithuania           |  |
| Poland              |  |
| Portugal            |  |
| Spain               |  |
| Switzerland         |  |



# Conceptual Overview eInfrastructures @DARIAH-ERIC



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DARIAH is providing ...

- guidance,  
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# Examples on the latest trends 2014

## Arts and Digital Humanities



# Arts

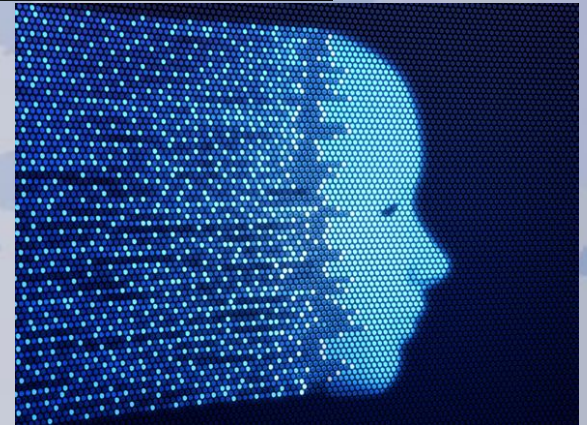
Example 1:  
Media art

existing prototypes

to be connected

e.g. Archive of Digital Art ([ADA](#))

→ [Liverpool declaration](#)



# Humanities

Example 2:  
eLexicography

**EUROPEAN  
NETWORK OF  
e-LEXICOGRAPHY**

existing communities of practice  
to be connected  
e.g. COST IS 1305 [ENeL](#)



→ DARIAH Working Group proposal



# Social Sciences

## Example 2: Social Innovation

existing communities of practice  
to be connected

e.g. European School on Social Innovation ([ESSI](#))

→ DARIAH Working Group proposal





# Challenges for DARIAH and A+H-eResearch-Infrastructures

# Current challenges

Framework:

Arts and Humanities @ Cyberscience

- Data | Information
- Dicipines, Scientific Paradigms
- People



**Change**

# Challenges

- Big Data in the Humanities
- Inter-, transdisciplinary Humanities
- Knowledge Societies
- Citizen Science
- Open Access, Open Data, Open Science
- Open Innovation
- Inclusive Innovation:  
Technological and Social Innovation
- Sustainability
- Funding

**Change**



# Technical Insight DARIAH-ERIC



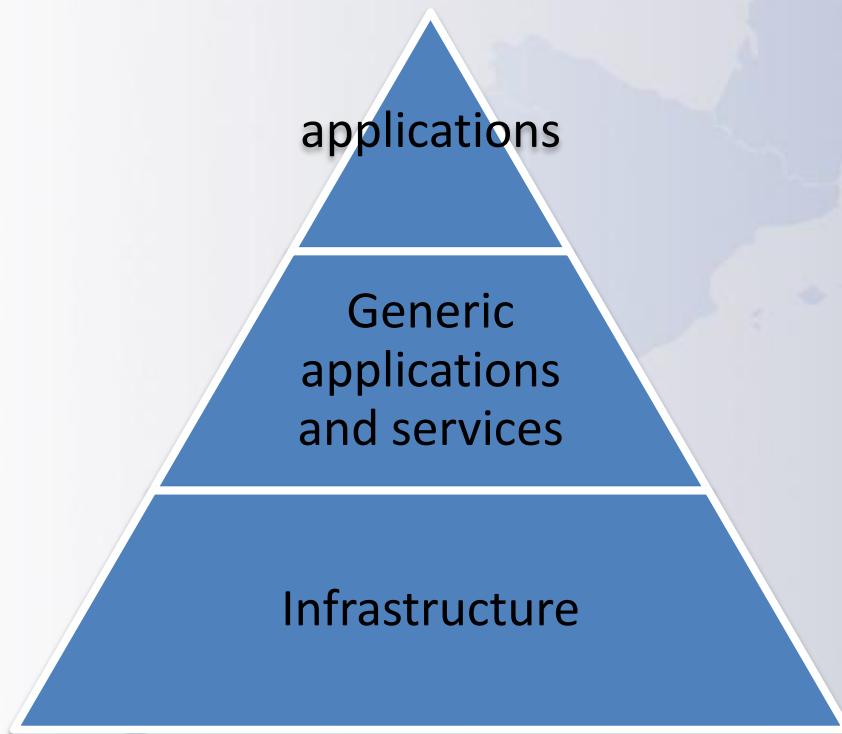
# **Collaboration with European infrastructures**



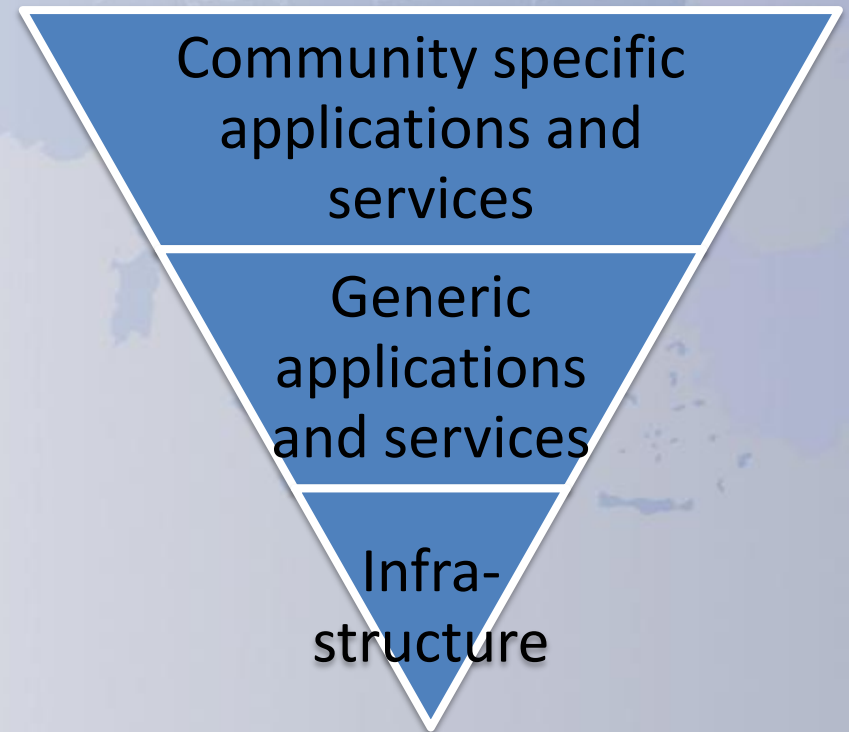


# Different Interests in Research Infrastructures

**Computing- and Data Centres**



**Research Institutes / Scholars**



# Network of affiliated projects (1)



Archaeologists



Medieval and  
Modern Historians



Digital Textual  
Scholarship



EUROPEAN HOLOCAUST  
RESEARCH INFRASTRUCTURE

Holocaust  
Researchers



Cultural Heritage  
conservation



Digital Methods



# Network of affiliated projects (2)

- Enable discipline-specific infrastructures
  - Integrating activities
    - e.g. ARIADNE, CENDARI, CHARISMA, EHRI
- Research into e-Research, analysis of methods:
  - NeDiMAH (Network for Digital Methods in the Arts and Humanities)
  - TaDiRAH (Taxonomy of Digital Research Activities in the Humanities)

# Example affiliated project: Cendari

- CENDARI: *“is a research infrastructure project aimed at integrating digital archives for the medieval and World War one eras.”*
- What does CENDARI get from DARIAH?
  - DARIAH[-DE] technical environment (e.g. collaboration tools, long-term archiving, virtual machines)
  - Expertise in data modeling and standards for (meta-) data interoperability
  - Sustainable infrastructure and sustainability plan for CENDARI results
- How does DARIAH benefit from CENDARI?
  - Close links with historians, their research questions and methods
  - Access to a wide network of European archives
  - Good practices in formats and standards for archival description (EAG, EAC, EAD)



# DARIAH e-Infrastructure

- The DARIAH e-Infrastructure needs to support
  - Collaboration
  - Sharing
  - Contributions
- What is the technical background for it?



# Collaboration on the Technical infrastructure

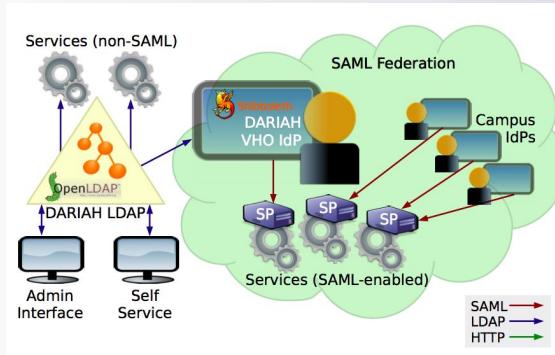


# Collaboration on the Technical Infrastructure

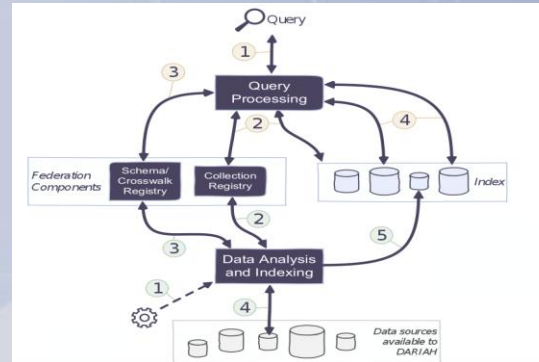
- Collaboration with other (European) infrastructures
- The DARIAH e-Infrastructure aims interoperability
- DARIAH utilizes existing standards and existing services
  - Examples

# Examples of Collaboration on the Technical Infrastructure

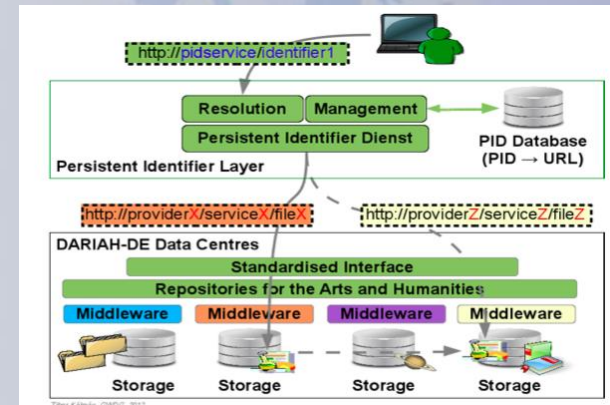
## AAI Infrastructure



## Federated, Generic Search



## Collaboration Tools



## Persistent Identification

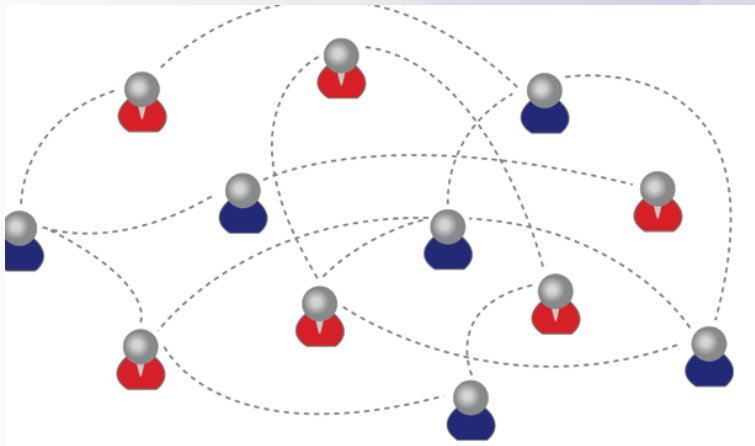


# DARIAH AAI

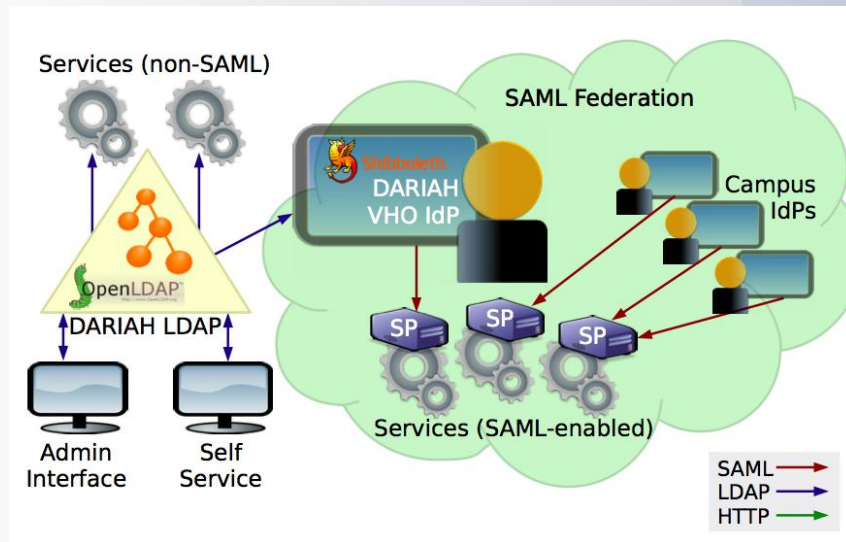


DARIAH is a Network of ...

- a wide variety of research communities across the arts and humanities
- affiliated projects in the wider DARIAH landscape, e.g. EHRI, CENDARI, ARIADNE
- working communities of practice



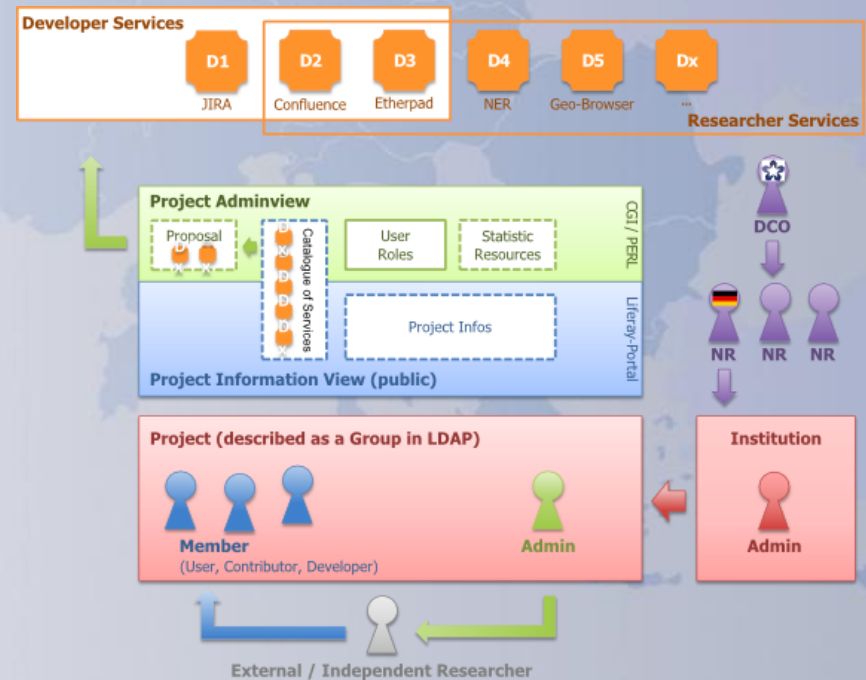
# DARIAH AAI (2)



- In Whom We Trust?
- “A connected network of people, information, tools, and methodologies for investigating, exploring and supporting work across the broad spectrum of the digital humanities”
  - Find and use a wide range of research data
  - Work across domains and disciplines
- Group and attribute management integration with DARIAH AAI

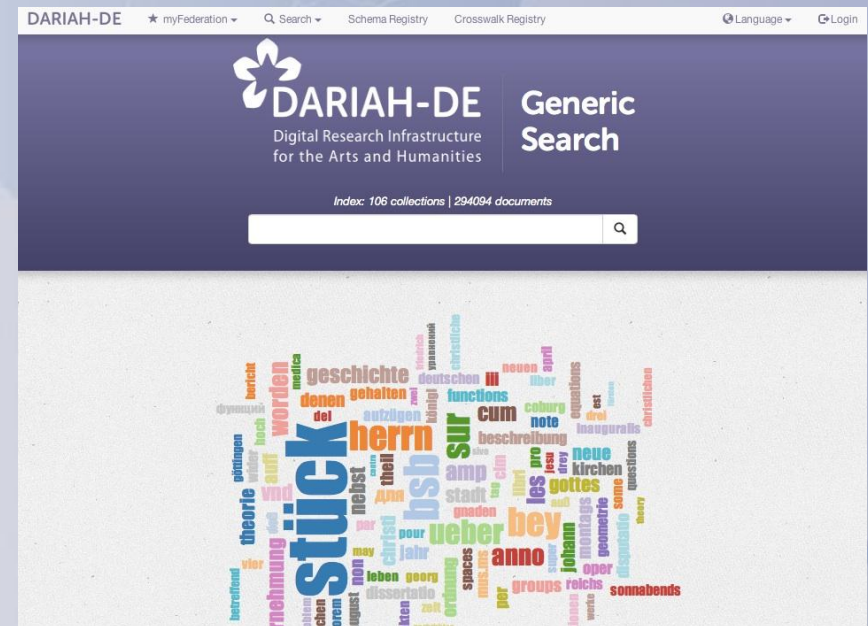
# DARIAH AAI (3)

- Possible ways for DARIAH:
  - Own federation for the Arts and Humanities
  - Federation of federations
    - eduGAIN is a good approach to pan European AAI for DARIAH
    - DARIAH would like to see more and reasonable attributes available
    - Combination of eduGAIN and community specific DARIAH homeless-IdP and attribute authority
    - Support safe attribute release via GÉANT Code of Conduct

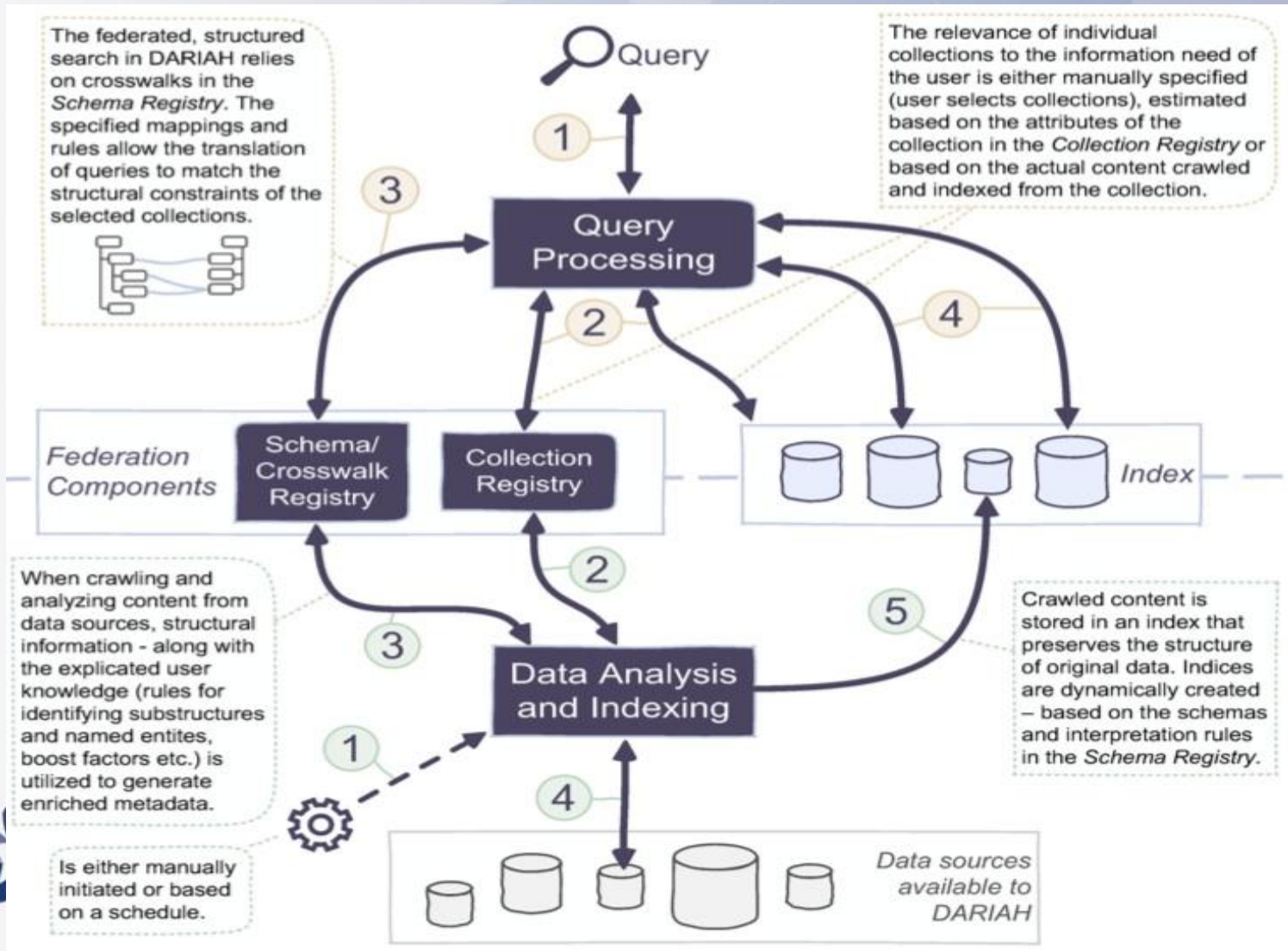


# Federated, Generic Search

- Schema/Crosswalk Registry
  - Federated search relies on crosswalks
  - Mappings and rules allow transforming the queries to match the constraints of sources
- Collection Registry
  - Data sources (collections)
- Indexes
  - Store crawled and analyzed content
  - Dynamically created based on crosswalks

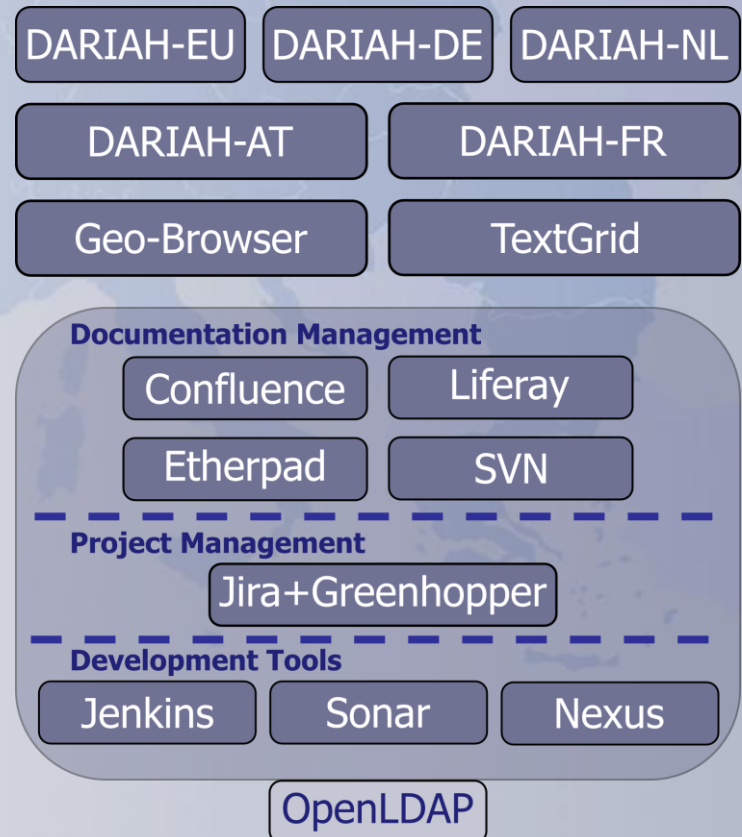


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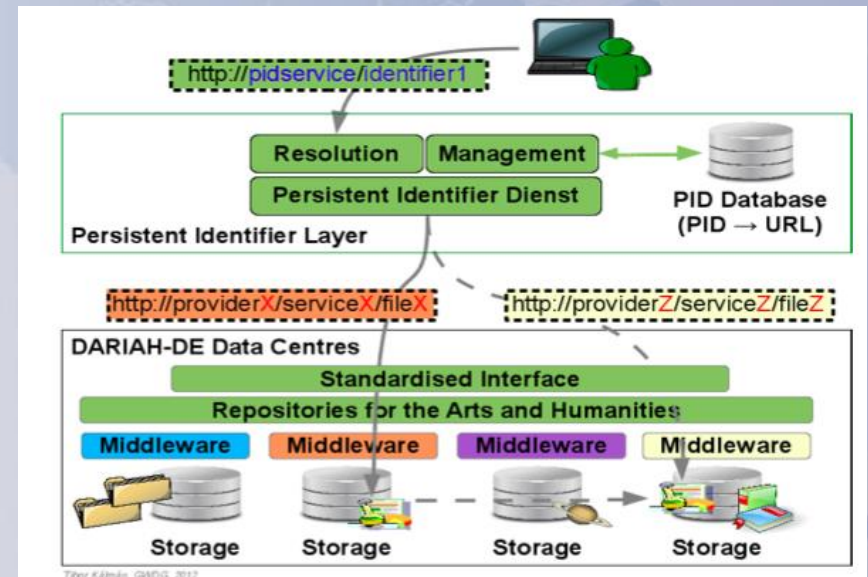
# Collaboration Tools

- Technical Infrastructure
- Project Management, Code Hosting, Revision Control, Software Testing, Documentation, Communication, Issue Tracking System with software (e.g. Etherpad, JIRA, Jenkins, Greenhopper among others)



# Basic Services – Persistent Identifier

- Persistent identification of digital objects
  - for publishing and referencing
- It requires standards and services
- DARIAH applies existing standards and services
  - Handle ([www.pidconsortium.eu](http://www.pidconsortium.eu)), URN, etc
  - Globally distributed resolution
- Service operated by DARIAH partners



# Summary

- Productive infrastructure and services are available and widely used.
- DARIAH can serve as a blueprint for other A+H infrastructures and research domains.
- Long-term perspective:  
Increase number of “commodity” services.
- Network: Lower the barrier for projects and communities to connect / join in!
- Funding: Creating a sustainable ecosystem is costly: sustainable funding structures are needed!





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