



# e-Humanities and e-Heritage Research Infrastructures: Beyond tools

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Submitted on 13 Mar 2018

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PARTHENOS

Pooling Activities, Resources and Tools  
for Heritage E-research Networking,  
Optimization and Synergies

# eHumanities and eHeritage Research Infrastructures: Beyond Tools

(Steven Krauwer & Stefan Schmunk)



A Webinar of the PARTHENOS  
eHumanities and eHeritage Series

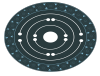
Picture: CC0 PARTHENOS

Webinar start: **22.02.2018, 11:00 CET**  
Moderation: Ulrike Wuttke  
(University of Applied Sciences Potsdam)

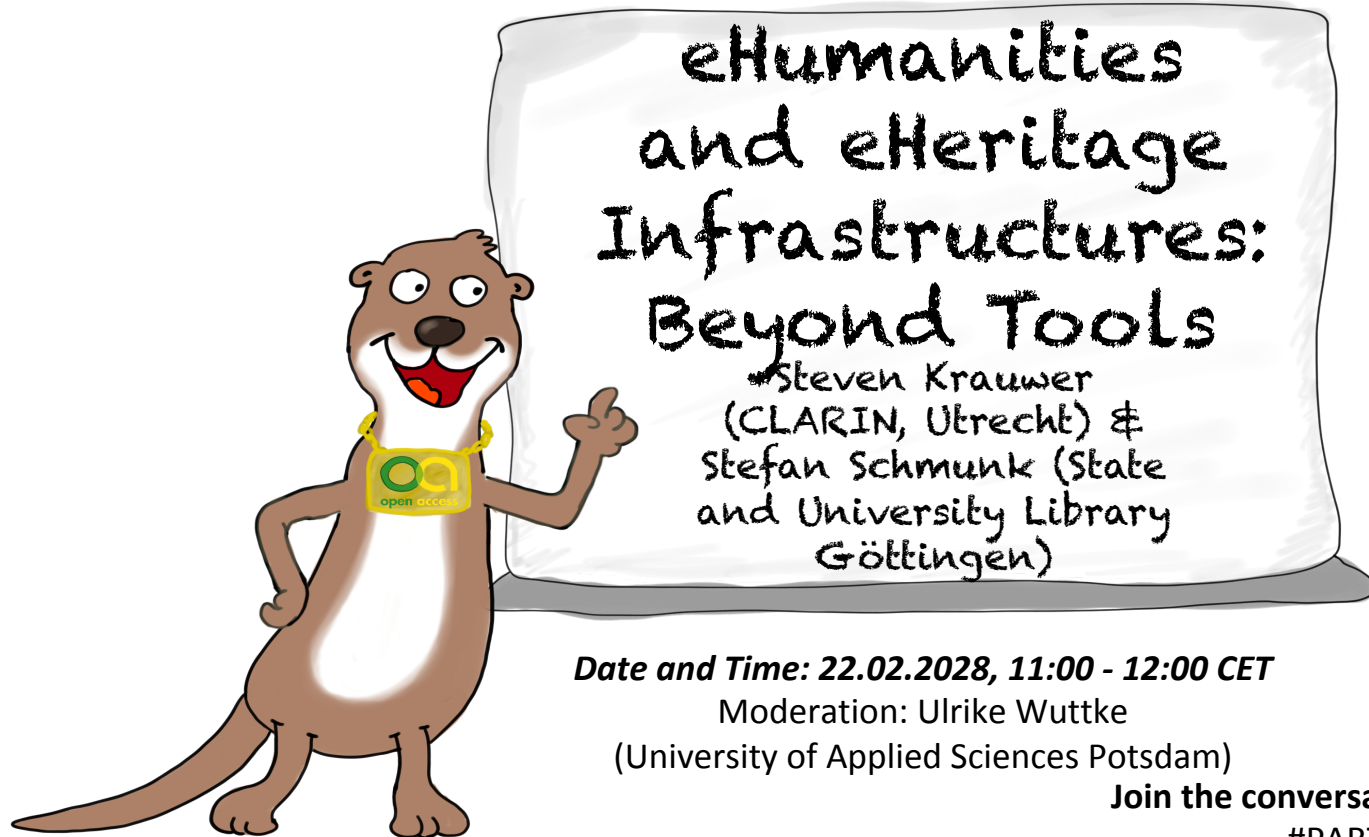
**FH;P**

Fachhochschule Potsdam  
University of  
Applied Sciences

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# PARTHENOS eHumanities and eHeritage Webinar Series



**Date and Time: 22.02.2028, 11:00 - 12:00 CET**

Moderation: Ulrike Wuttke

(University of Applied Sciences Potsdam)

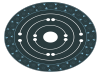
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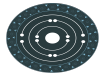
Graphic: Otto, the Open Access Otter CC-BY 4.0, Katja Diederichs



# Some Housekeeping...

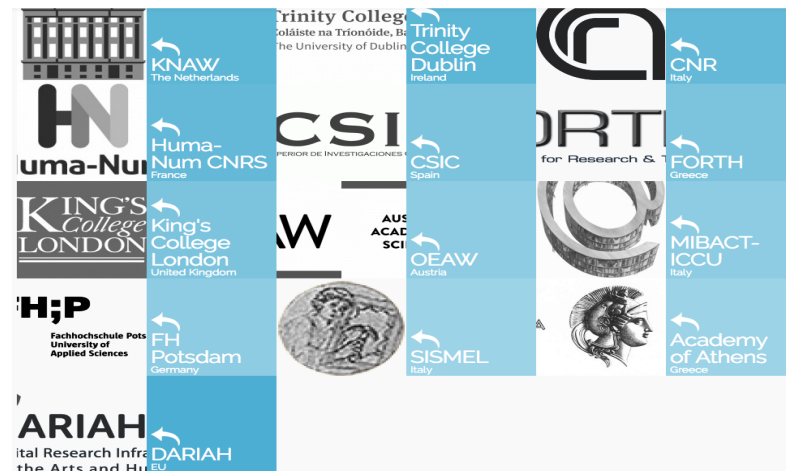
- As a participant you will be **muted** and not be seen throughout the webinar.
- For **questions** and **remarks** please use the **chat**. For questions, please use the word **question**.
- Your questions are going to be answered by the trainers during / after the presentation.
- If you have **sound problems**, please test your technical settings. You have to click on the **speaker symbol** on top to be able to hear (it has to be **green**).
- **Help us improve:** Follow up e-mail with a link to a short **feedback survey**.

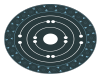




# Some words about PARTHENOS...

- **PARTHENOS** stands for: Pooling Activities, Resources and Tools for Heritage eResearch Networking, Optimization and Synergies
- PARTHENOS is a **Horizon 2020** project with the aim to **strengthen the cohesion of Heritage related E-research**
- Running time: 1 May 2015 - 30 April 2019
- PARTHENOS has 16 partners from 9 European countries
- PARTHENOS Coordinator: PIN Scrl (Italy)
- The PARTHENOS webinar series is a **cross PARTHENOS training effort**

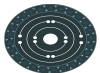




# Which country are you participating from?



Cartography OpenStreetMap, licensed as CC BY-SA ([copyright page](#)).



# eHumanities and eHeritage Infrastructures: Beyond Tools

## Trainers



**Steven Krauwer**  
(CLARIN, Utrecht)



**Stefan Schmunk**  
(State and University Library  
Göttingen, Germany)

## Moderation

**Dr Ulrike Wuttke**  
(University of  
Applied Sciences  
Potsdam, Germany)



# eHumanities and eHeritage Research Infrastructures: Beyond tools - General Introduction ...

A Webinar in the PARTHENOS eHumanities and eHeritage Series

by Steven Krauwer & Stefan Schmunk



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# Prologue

Research and Science have changed in many ways by digital transformation during the last three decades ...

# Paradigm Shifts in Science and Research - history of science in 1 slide

Before enlightenment - before 17th century:  
Empirical Science: Describing natural phenomena



Claudius Ptolemäus,  
Encyclopedia Margarita  
Philosophica by Gregor  
Reisch, 1503 - CCo

Age of Reason (Enlightenment) - 17th to 20th century:  
Development of Theories and Models and Generalization



Sébastien Leclerc I,  
Louis XIV Visiting the  
Royal Academy of  
Sciences - CC0

Last Decades - middle of 20th century:  
Computerization and Simulation of complex phenomena

Today - since 1990ies:  
Data driven Science - joining Theory, Analysis,  
Experiment, and Simulation

by Jim Gray, eScience Group, Microsoft Research



# Changing Arts and Humanities - eHumanities and eHeritage

Digital transformation changes research in the Arts and Humanities fundamentally, this concerns:

- Research methods → getting more and more digital
- Research data → are increasingly digital and larger volumes
- Scholars need new abilities → changes of curricula and staffing at universities
- Change of theoretical approaches → must be adapted and modified
- Change in research practices → more interdisciplinary and collaborative



# The Digital Turn in the Arts and Humanities is like a



Giant Wave in Hawaii, 1971  
[www.goodfreephotos.com](http://www.goodfreephotos.com) CC0

# The Digital Turn in the Arts and Humanities is like a

It is not only a challenge ...  
... it is an opportunity

Arts and Humanities  
should ride the wave ...

Giant Wave in Hawaii, 1971  
[www.goodfreephotos.com](http://www.goodfreephotos.com) CC0

# In this webinar, we will investigate ...

... how Research Infrastructures can assist the research process in the Social Sciences, Arts, Humanities, and Cultural Heritage (SSH & CH)

... which opportunities and challenges SSH & CH and Digital Research Infrastructures (RI) offer for research(ers)

... how different stakeholders can engage with Digital Research Infrastructures - community engagement and user engagement

# What are Research Infrastructures (RIs)

Research infrastructures (RIs) are facilities, resources and services used by the science community to conduct research and foster innovation. {...}

They include: major scientific equipment, resources such as collections, archives or scientific data, e-infrastructures such as data and computing systems, and communication networks.

RIs can be **single-sited** (a single resource at a single location), **distributed** (a network of distributed resources), or **virtual** (the service is provided electronically).

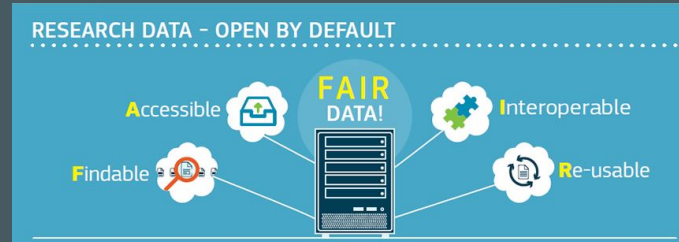


Source:

[https://www.youtube.com/watch?v=-YCZcDqLybM&list=PLKq1q7snsFGcAm9Y\\_kKi09n\\_8xsktBvBG&index=2](https://www.youtube.com/watch?v=-YCZcDqLybM&list=PLKq1q7snsFGcAm9Y_kKi09n_8xsktBvBG&index=2)



# Infrastructures for researchers - “Analogue” and digital



FAIR principles -  
<https://www.openaire.eu/open-research-data-the-new-norm-in-2020>



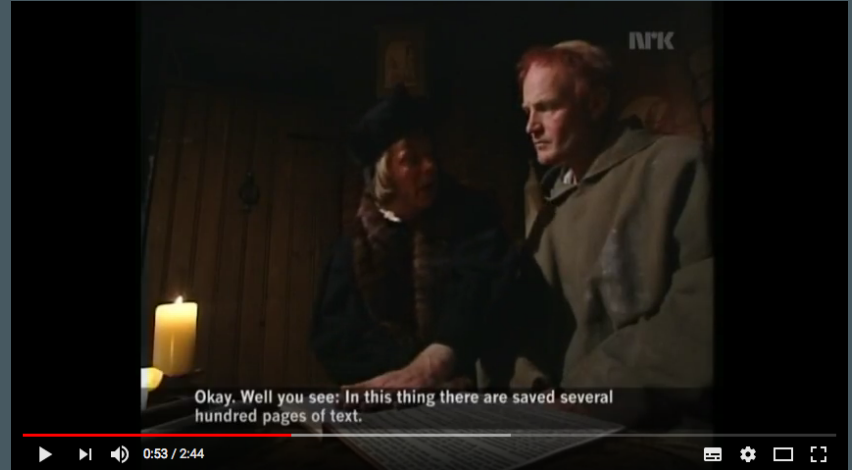
GLAM: Galleries, Libraries, Archives & Museums

# RIs started in the humanities!

Libraries are probably the oldest research infrastructures in the world.

Notable examples:

- Royal Library of Alexandria  
(between 300 and 201 BC)
- Library of Ashurbanipal in Mosul  
(between 668 and 630 BC)
- National Library of France in Paris  
(since 1368)
- University of Oxford's Bodleian  
Libraries (since 1602)



Medieval HelpDesk:

<https://www.youtube.com/watch?v=pQHx-SjgQvQ>

# RIs for the hard sciences

In recent times physical installations have become more prominent, especially for the hard sciences, such as:

- Particle accelerators (CERN, Geneva, since 1954)
- “New” ocean research vessels (Polarstern, since 1982)
- Hubble space telescope (somewhere in space, since 1990)



CERN Linac - Florian Hirzinger, [www.fh-ap.com](http://www.fh-ap.com),  
CC BY-SA 3.0



Research Vessel Polarstern arriving Reykjavik -  
Bruce McAdam, CC BY-SA 2.0



Hubble Space Telescope (HST) -  
Public Domain



# New trends since late 1990ies

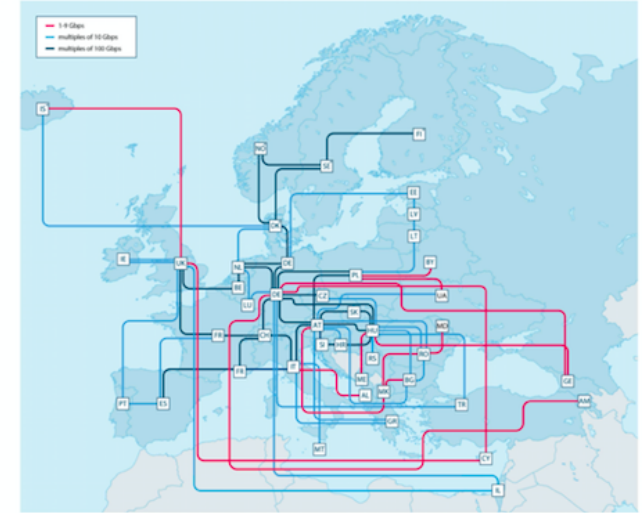
→ Domain independent computing infrastructures (such as academic networks and high performance computing) - eg Eduroam, EGI

→ Domain specific data infrastructures in all disciplines

- Environmental and Earth Sciences
- Biological and Medical Sciences
- Energy
- Material Sciences and Analytical Facilities
- Physical Sciences
- Mathematics and ICT
- Social Science and Humanities



GÉANT's pan-European **research and education network** interconnects Europe's National Research and Education Networks (NRENs). Together we connect over **50 million users** at 10,000 institutions across Europe.



GÉANT's pan-European network is funded by the GÉANT Project (G4-2). This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 731122. The map shows topology as at August 2017. The G4-2 partners are listed below.



\*Connections between these countries are part of NORDUnet (the Nordic regional network)



This document has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of GÉANT and can under no circumstances be regarded as reflecting the position of the European Union.

geant.org

Source:

<https://www.geant.org/Resources#maps>

# And you?

If you do not see the poll, please exit the full screen.

# What do we in SSH & CH expect from RIs?

“In humanities and social sciences, there is a need for research infrastructures from two points of view:

(1) On the one hand, scientists are hoping for facilitation of their practical work and generally improved working conditions, e.g. in terms of access to specialist scientific information, from research infrastructures ...

(2) On the other hand, the development of infrastructures is frequently a pre- condition for a response to forward-looking scientific and social issues through concrete research projects focused on specific topics. ...”

Source: Wissenschaftsrat 2011 (Edt.): Recommendations on Research Infrastructures in Humanities and Social Science, p. 9. [https://www.wissenschaftsrat.de/download/archiv/10465-11\\_engl.pdf](https://www.wissenschaftsrat.de/download/archiv/10465-11_engl.pdf)

# A brief history of RIs at the European Level

Based on an initiative of the European Commission ESFRI: European Strategy Forum on Research Infrastructures, started 2002

→ Scope: Support excellent, collaborative and international research in the European Research Area (ERA)

Since 2002 some 50 European RIs have been set up under the auspices of ESFRI in a broad variety of disciplines: e-Infrastructures, Energy, Environment, Health & Food, Physical Sciences & Engineering, and Social and Cultural Innovation

# Research infrastructures under the auspices of ESFRI



Source:

[https://ec.europa.eu/research/infrastructures/index\\_en.cfm?pg=mapri\\_european](https://ec.europa.eu/research/infrastructures/index_en.cfm?pg=mapri_european)

## Infrastructures

European Research Infrastructures

Home About Policy Funding e-Library

4 December 2017

### Dedicated Information session for ESFRI RIs and ERICs on EOSC and long-term sustainability of Research Infrastructures

The European Commission organized a dedicated information session to clarify specific topics of the [Horizon 2020 RI Work Programme](#) calls, namely on the European Open Science Cloud and Long-term sustainability.

The event was held on the 27th November at the Auditorium Karel Van Miert.

The programme comprised 2 sessions:

- Session 1 covered the EOSC Governance, national initiatives and interface, as well as the technical development
- Session 2 focused on the long term sustainability of RIs and the Individual Support to ESFRI and other world-class research infrastructures

[More information](#)

### Success Stories

[Review, reflect, recommend and innovate for conflict prevention](#)



In a bid to improve the EU's conflict-prevention and peacebuilding interventions, EU-funded researchers are assessing the EU's past and ongoing initiatives in several countries around the world.

# European RIs for SSH & CH

RIs set up under the auspices of ESFRI, each based on national consortia of universities, libraries, museums, archives etc.:



In addition a number of past or ongoing EC supported Infrastructure Projects, such as



# How can RIs assist the research process? (1)

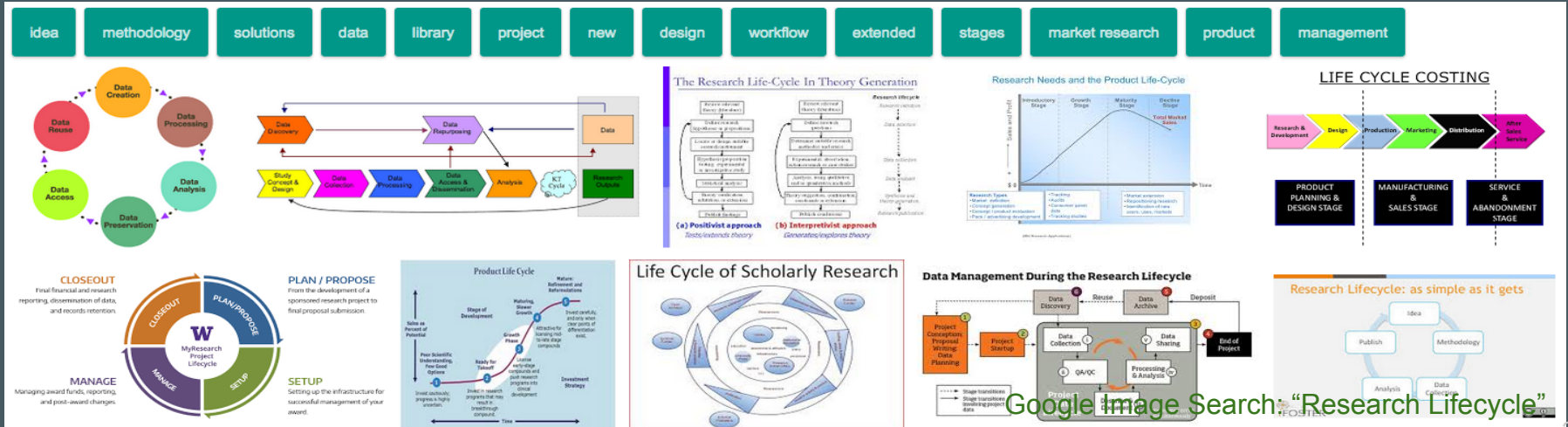
First we will take a closer look at the various stages of the research process and then we will show where and how RIs can be of assistance. For the characterisation of the research process we will adopt the Research Life Cycle model used by the PARTHENOS project.

It should be noted that our interpretation of the term ‘research process’ will be very broad in that this will not just refer to scientific research in the very strict sense, but also to research conducted by professionals working in e.g. cultural heritage institutions, where the main objective may not be to write academic papers in scientific journals but rather to improve the quality of the collection and the way it is documented, preserved and presented



# How can RIs assist the research process? (2)

We will first show the PARTHENOS model, and then present two examples of RIs for SSH & CH, and when we describe their specific features and activities we will indicate for each of them which of the phases of the Research Life Cycle it supports, and illustrate it with examples.



Google Image Search "Research Lifecycle"

# PARTHENOS - Research Life Cycle



Source:

<http://training.parthenos-project.eu/sample-page/intro-to-ri/sustainability/data-lifecycle-and-curation/>

# CLARIN and DARIAH as examples of RIs





[www.clarin.eu](http://www.clarin.eu)



[www.dariah.eu](http://www.dariah.eu)

# DARIAH - European network of researchers



ABOUT ▾ ACTIVITIES ▾ TOOLS & SERVICES ▾ NEWS – EVENTS ▾ 

Working Groups













## Working Groups

Working groups are joint activities in DARIAH. They are self-organized and work in a strategic area that is defined by DARIAH's Virtual Competence Centers.

Their activities are complementary to individual groups always have a certain purpose: The scholarly, technical, editorial or organisational extending the DARIAH infrastructure.

### Overview of DARIAH working groups

Below you find a list of DARIAH working groups. Click on contact points to get in touch with the group.

|   |  |   |   |
|---|--|---|---|
| <br>An Integrated Registry Service for the Arts and Humanities | <br>Analyzing and linking biographical data | <br>CENDARI Sustain                                  | <br>Community Engagement |
| <br>DARIAH Futures   | <br>Digital Annotation                      | <br>FIM4D (Federated Identity Management for DARIAH) | <br>GeoHumanities        |
| <br>Guidelines and Standards                                   | <br>Image Science and Media Art Research    | <br>Impact factors and success criteria              | <br>Lexical Resources    |

Join us: [www.dariah.eu](http://www.dariah.eu)

# Main task of DARIAH-DE



Community  
engagement

By  
researchers  
for  
researchers

DARIAH is research driven and an  
**architecture of participation**

# DARIAH-DE - four main tasks of activity

## Teaching (support, training)

- Workshops on methods, expert colloquia, summer schools
- Coordination of national and international curricular developments

## Research Data (research data collections, research data management)

- Best practices for metadata, standardised exchange of data, ontologies
- Development of generic search, collection and schema registry
- Development of a tool based federation architecture for research data

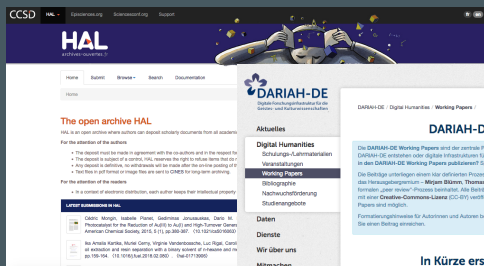
## Research (DH & Information Science)

- DH methods and practices
- Use cases: annotation, big data
- Tools and services
- Bibliography *Doing Digital Humanities*

## Technical Infrastructure (development and provision of infrastructural services)

- Collaborative research environments, eg. TextGrid
- Virtual machines & storage
- Monitoring, authentication and authorization infrastructure
- etc.

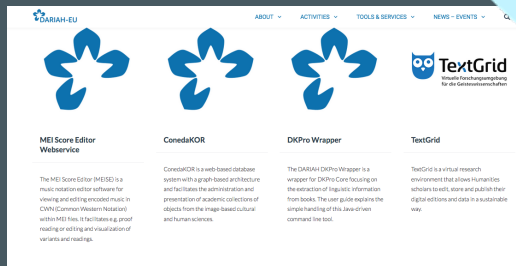
# You want to know more? - DARIAH-EU <https://dariah.eu>



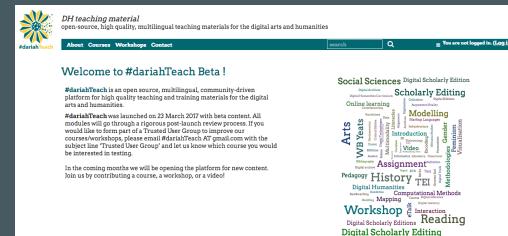
<https://hal.archives-ouvertes.fr/>



<https://de.dariah.eu/working-papers>



<https://www.dariah.eu/tools-services/tools-and-services/>



<https://teach.dariah.eu/>



<https://de.dariah.eu/bibliographie>



## Ausschreibung DARIAH-DE DH-Award 2018

Veröffentlicht von Beate Macho am 20. Februar 2018

DARIAH-DE – Digitale Forschungsinfrastruktur für die Geistes- und Kulturwissenschaften ist der deutsche Beitrag zum europäischen Forschungsverbund „DARIAH-EU – Digital Research Infrastructure for the Arts and Humanities“. DARIAH-DE entwickelt eine digitale Forschungsinfrastruktur für Werkzeuge und Forschungsdaten und unterstützt die mit digitalen Ressourcen und Methoden arbeitenden Geistes- und Kulturwissenschaften in den Digital Humanities. Die 2008 begonnene Entwicklung [...]

weiterlesen



<http://dhd-blog.org/>

# CLARIN ([www.clarin.eu](http://www.clarin.eu)) - what and for whom?

CLARIN is about language in all its modalities, such as written text (from ancient inscriptions to medieval manuscripts and modern printed text), movies, audio or video recordings of people speaking or singing, sign language and web content.



Through its networked federation of repositories in (now) 22 countries it makes digital language resources, tools and expertise available to scholars, researchers, students and citizen-scientists from all disciplines where language plays a role.



# CLARIN - the roles of language - just some examples

Carrier of cultural content: *cultural heritage*

Record of the past: *history*

Main communication instrument within and across societies: *sociology, anthropology*

Preserving and disseminating our knowledge: *all disciplines*

Instrument to formulate rules for society: *law, theology*

Carrier of information: *media studies, journalism, education*

Means of human expression: *literary studies, psychology*

Focus of cognitive processes: *brain studies, psychology*

Component of national or cultural identity: *political sciences*

Object of computer processing: *language and speech technology*

Object of study: *linguistics, phonetics*

# Going through the research life cycle with CLARIN (1)

## Training phase:

- Digital Humanities Course Registry (in collaboration with DARIAH) to help you finding training facilities that suit your needs.
- Video lectures, Summer school sessions, workshops and tutorials.
- Mobility grants to bring researchers and technical experts together.

## Developing research questions and planning your research project:

- The Virtual Language Observatory to discover more than 1.6 million language resources in CLARIN and other repositories by metadata search.
- The CLARIN portal providing a list of showcases and key families of language resources and tools relevant for many disciplines, e.g. historical newspapers, parliamentary records, oral history recordings, social media.
- Best practice documents on a variety of topics, including standards, and IPR.

# Going through the research life cycle with CLARIN (2)

Carrying out your research and analyzing your data:

- Easy access to both open and protected language data in all modalities.
- Web services and applications to explore and analyze your data across repositories with a wide variety of tools that can be combined to perform complex operations.
- Content search within different corpora in different data centres with a single research engine.
- Thematic knowledge centres offering helpdesk services and advice on specific languages, data types, modalities, technologies and other topics.

Publishing your results:

- Depositing services to store your results in a sustainable data centre so that your results remain accessible for you and others after your project has ended.
- Persistent Identifiers to make sure that your data remains findable in the future.

# Don't forget the invisible research infrastructures

We have not explicitly mentioned the so-called e-Infrastructures (such as the academic networks) that are not tied to specific domains or disciplines but that are crucial enablers for the functioning of our RIs by

- connecting researchers with each other to facilitate collaboration
- connecting users with the infrastructures
- connecting nodes of the data networks
- connecting infrastructures across disciplines
- offering platforms for electronic publication of results
- offering platforms for education and training activities

Without those we could not exist as digital RIs for our domains!



... and many  
more ...

# Opportunities and challenges of RIs I

Whereas in the hard sciences the use of computers to collect, analyze and process digital data is anchored in academic curricula this is not generally the case in curricula for the education of researchers and other professionals in SSH & CH. This creates an obstacle for optimal deployment of digital data and tools that are available, and for SSH & CH research to benefit from the continuous evolution of existing and the emergence of new digital technologies in all disciplines. We see at least 3 action lines to remedy the situation

- (1) Work on the development and implementation of courses aimed at digital literacy in SSH & CH curricula
- (2) Offer digital literacy courses to those already working as researchers or educators
- (3) Offer facilities for SSH & CH researchers and technical experts to team up and work together on using digital data and tools to address research questions

# And you?

What do you think are the opportunities and challenges of RIs?  
Just use the chat:

# Take home messages I

In this lecture we have talked about RIs and following the Research Life Cycle we have used two specific RIs for the SSH & CH communities to illustrate how RIs can support the researcher in his or her work. We want to make the following comments:

(1) DARIAH and CLARIN are not the only RIs for SSH & CH, and you may also want to look at what the other European SSH & CH RIs (a number of them are listed on one of the earlier slides), or RIs at the national level can do for you.

(2) SSH & CH RIs (and sometimes even others) may overlap in some of their activities and may be complementary in others. Researchers should see this as a strong, continuous invitation to look over the fence and to cross discipline borders, as this is where innovation comes from.



# Take home messages II

(3) Research infrastructures in SSH & CH are a joint venture of scholars, computer scientist, information experts and representatives of galleries, libraries, archives and museums, and need the impact of these communities.

(4) There is no question "either or": RIs supports researchers who work and research digitally, and at the same time there will be the use of classical methods and practices in the humanities ... and that's good! Form follows function!

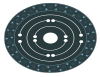
(5) Last but not least: Although research infrastructures are tools for research projects, they are themselves subject of research and therefore living organisms that can only be developed and operated through the active participation of the scientific community.

# Let us ride the Wave ...

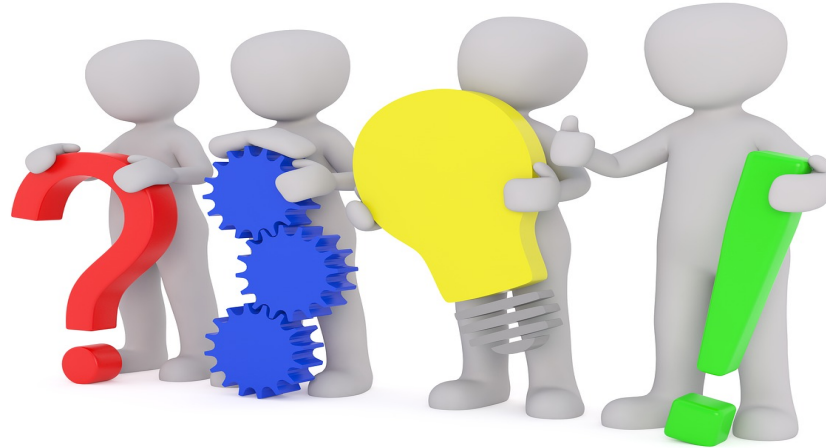


## Thank you for your attention !

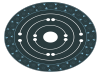
Generating, spreading, preserving knowledge  
and collaborating with others -  
that is the main goal of RIs in the SSH & CH



# Questions & Answers

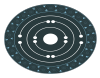


(Picture CC0 <https://pixabay.com/photo-2999583/>)

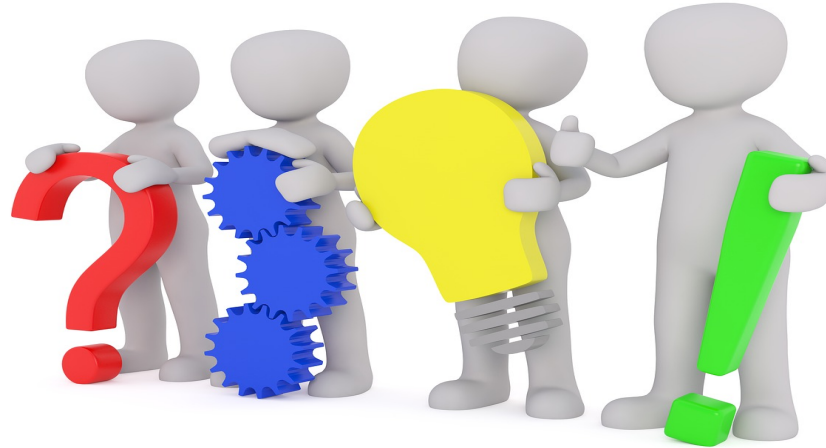


# Announcements

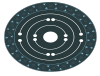
- **Next PARTHENOS webinars:**
  - Boost your eHumanities and eHeritage research with Research Infrastructures (Darja Fišer)
  - Make it Happen – Carrying out Research and Analysing Data (George Bruseker, Carlo Meghini)
- **PARTHENOS Training Suite module:**  
[Introduction to Research Infrastructures](#)
- **PARTHENOS Webinar Workshop** at the European Summer University in Digital Humanities 2018 (ESU), Leipzig



# Questions & Answers



(Picture CC0 <https://pixabay.com/photo-2999583/>)

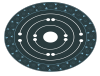


# Thank you for joining us!



- ✓ Please help us improving the PARTHENOS Webinar Series and fill out the short Feedback Survey that we'll sent you in a follow-up e-mail.

(Picture: CCO <https://pixabay.com/photo-1889007/>)



# PARTHENOS eHumanities and eHeritage Webinar Series



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[@Parthenos\\_EU](https://twitter.com/Parthenos_EU)

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