

Göttingen/ **/eResearch Alliance**

The research data life cycle @ Georg-August-Universität Göttingen

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Göttingen State and University Library

Gesellschaft für wissenschaftliche Datenverarbeitung mbH
Göttingen

U4 workshop: Research Data Life Cycle, 3.2.16, Göttingen

U4 Mission

- The ambition of the U4 network is to strengthen the international position and visibility of the individual partner institutions through intensive cooperation in Education, Research and University Management.
- The U4 aims at:
 - broadening the education offer by pooling resources and enhancing the students' international experience
 - strengthening the research output through cooperation and joint projects
 - sharing knowledge and pooling resources with regard to university management



Peer Review Session III
'Research Infrastructures'



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Coordinators

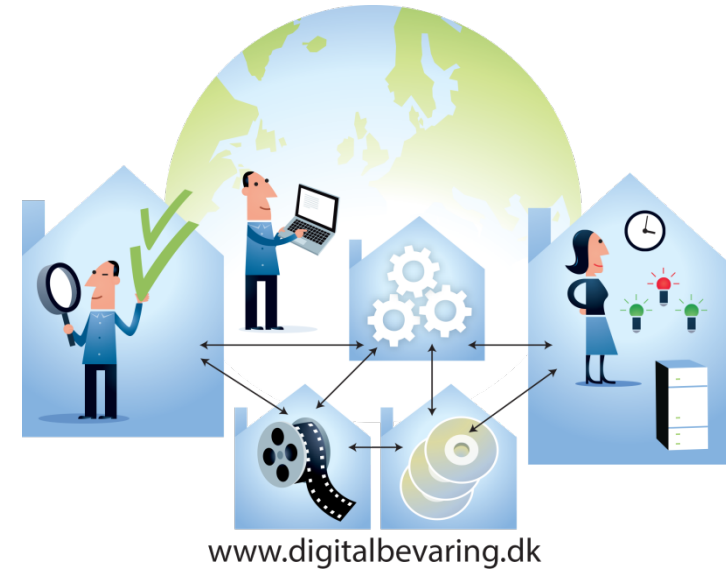
Contents

- Motivation
- The eResearch Alliance
- Services & examples
- Summary and outlook

Cooperation



Distributed resources



Research data management

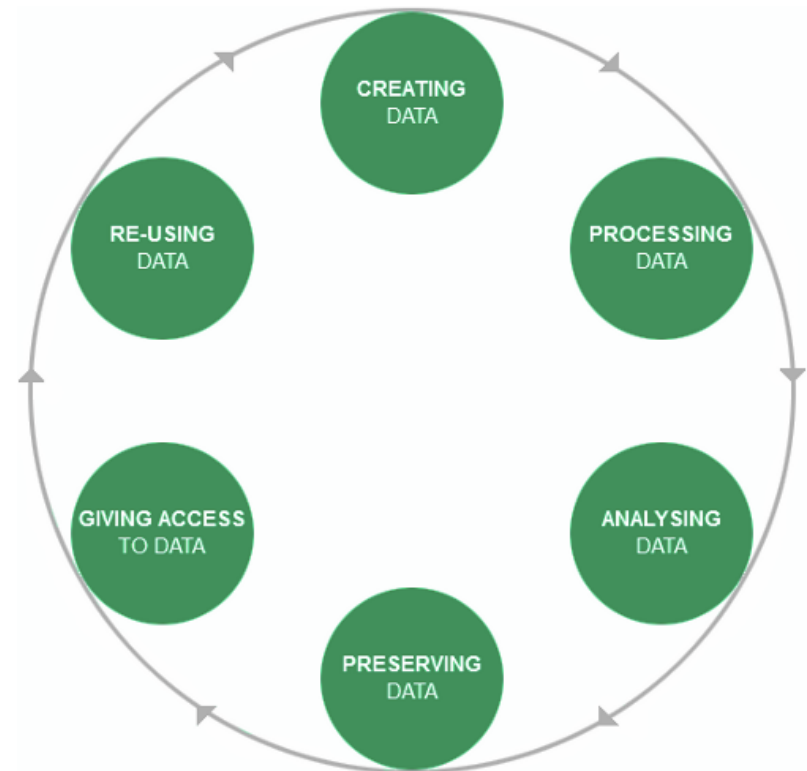
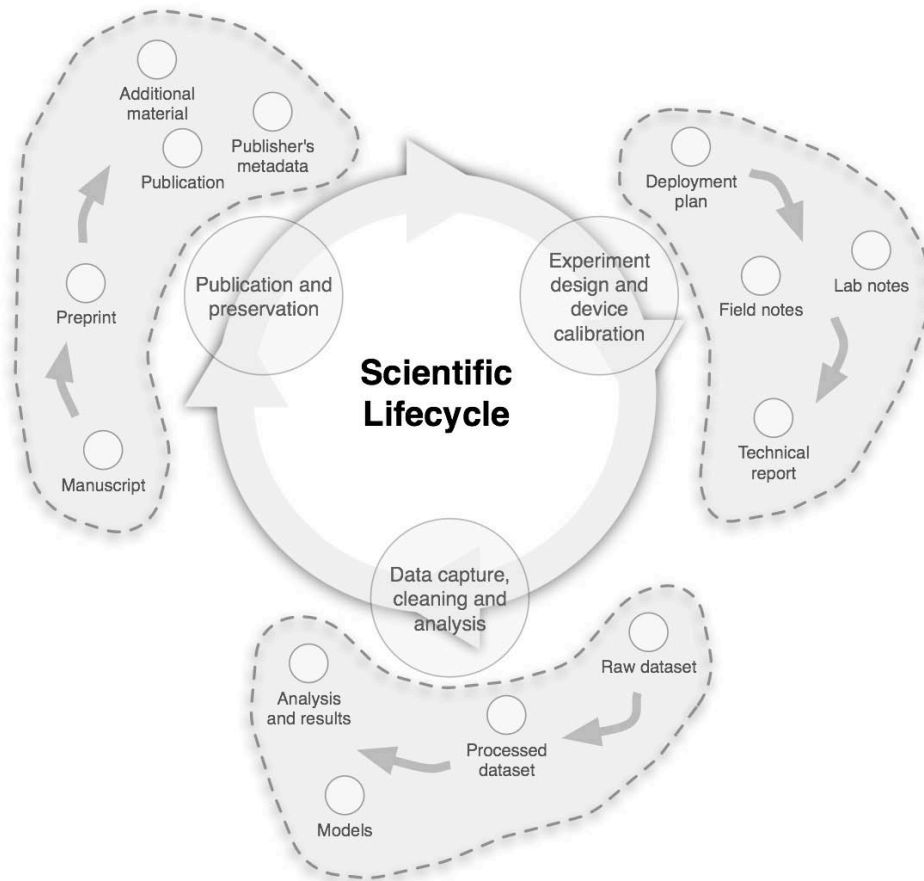


Digitization & Networked research

Share and reuse



→ eResearch = *enhanced*Research → infrastructure



(Pepe et al. 2009)

UK data centre
https://www.ukdataservice.ac.uk/media/132177/data_lifecycle_recolour.png

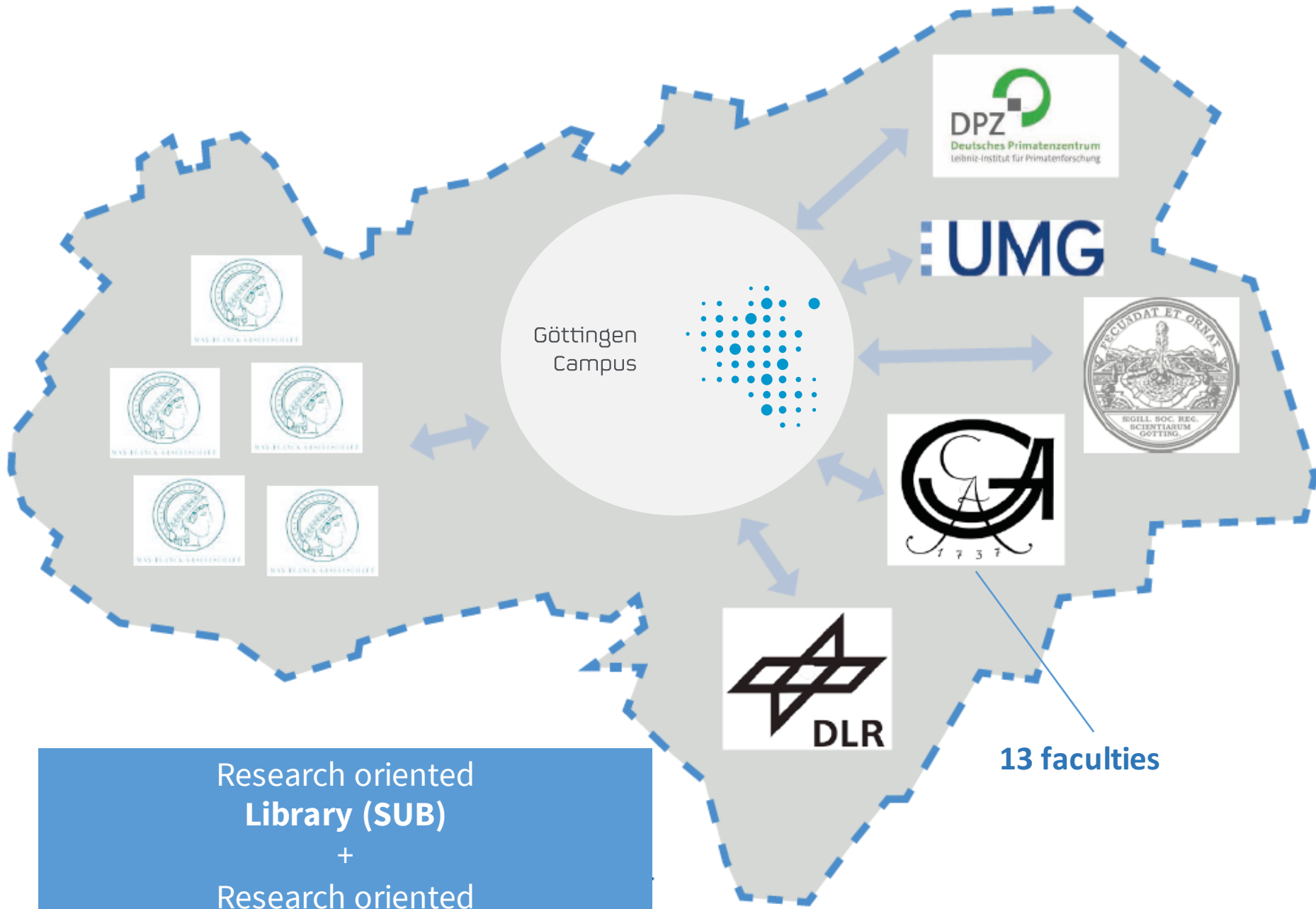
“eResearch refers to the development of, and the support for, advanced information and computational technologies to enhance all phases of research process.”

Richard E. Luce (2008)

In book: No Brief Candle: Reconceiving Research Libraries for the 21st Century,
Chapter: A New A New Value Equation Challenge: The Emergence of eResearch and
Roles for Research Libraries, Publisher: CLIR

eResearch = *enhanced*Research

→ Develop an optimal
information/knowledge infrastructure
for the Göttingen Campus



Research oriented
Library (SUB)
+
Research oriented
Computing Center (GWDG)

CORE INFORMATION SERVICES

exemplary

- GWDG
 - Network, systems, peripherals
 - Support, purchasing, consultancy, virtualisation
 - ICT, storage, preservation, computing, training
- SUB
 - Information access, circulation, rooms, training
 - Digitization, electronic publishing, AV-production
 - Historic and special collections, subject services
- Admin-IT
 - Finances, student system, PC's

Challenges

- Lack of knowledge of existing solutions
- Digital transformation in various stages in individual disciplines
- (Digital) data as central part of research and scholarly communication

Research data policy of the Georg-August University Goettingen (incl. UMG)

Preamble

The Georg-August-University Goettingen is committed to diligently preserve results of scholarship, to produce novel results through research, and to make results **accessible** and **reusable** for academia and the wider society, now and for **future** generations. The management, protection, preservation and sustainable provision of research data must therefore be carried out in accordance with recognized standards, meet high expectations and fulfil legal and ethical obligations. The University acknowledges that the implementation of this guideline will **depend** on the settings and requirements of each subject area.

eResearch Alliance: Basics

- All services for eResearch from one hand
- Co-chaired by Library and IT
 - GWDG: ~ 120 people, 30 in eResearch
 - SUB: ~ 450 people, 40 in eResearch
- Brokering-Office with c. 5 people
 - Team from different disciplines w/ eResearch expertise
 - Actual services and projects in individual organisations
- Participatory Design
 - e.g. Research Office in Steering Committee
 - eResearch Council with official Campus delegates



Konstituierende Sitzung: der eResearch-Rat des Göttingen Campus vor der Historischen Sternwarte der Universität.

Klicken Sie bitte hier, um das Bild in Druckqualität herunterzuladen.

Presseinformation: Rat für digitale Forschungsmethoden gegründet

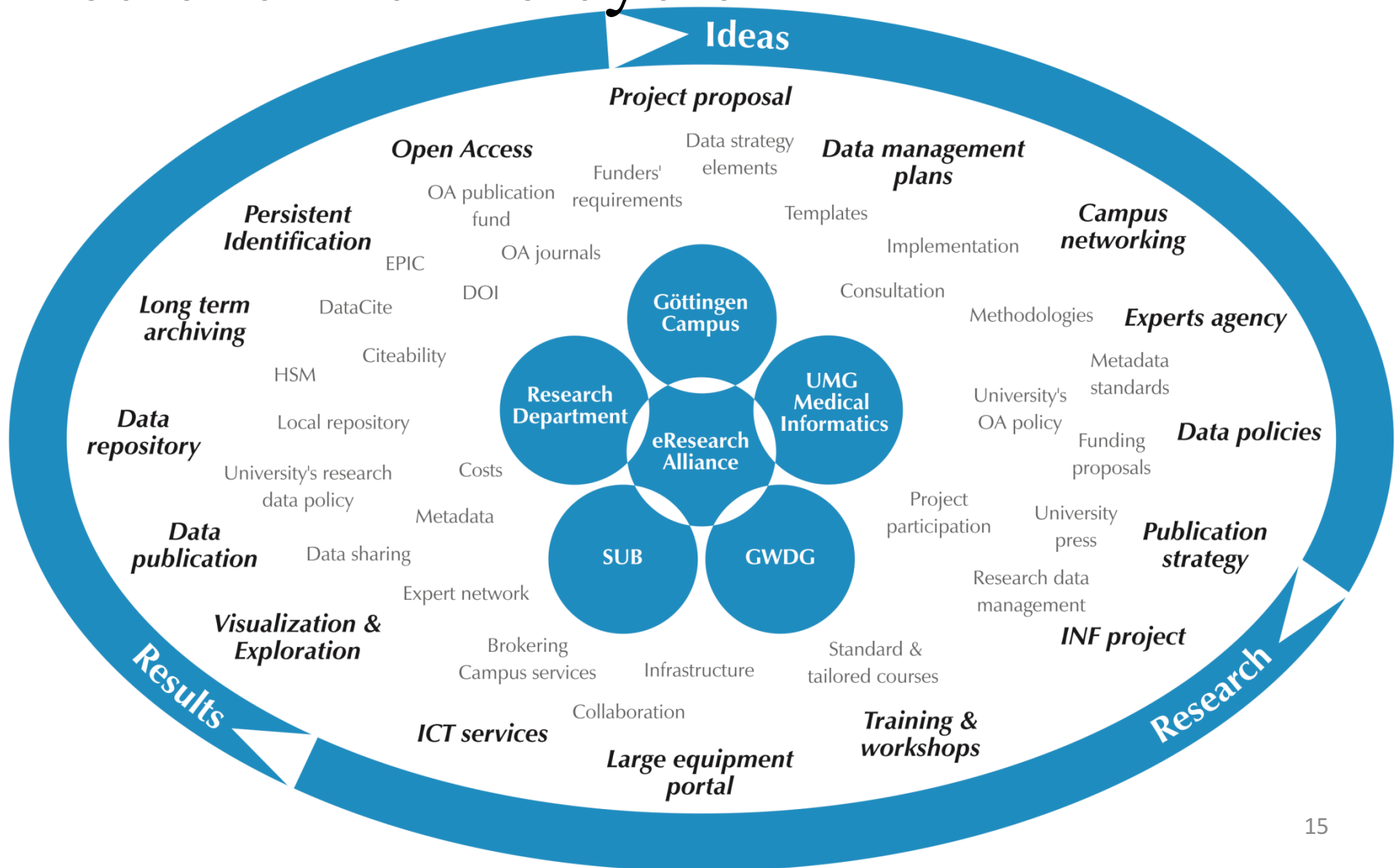
Nr. 134/2015 - 03.06.2015

eResearch-Rat des Göttingen Campus nimmt Arbeit auf – Etablierung und Ausbau von Infrastrukturen

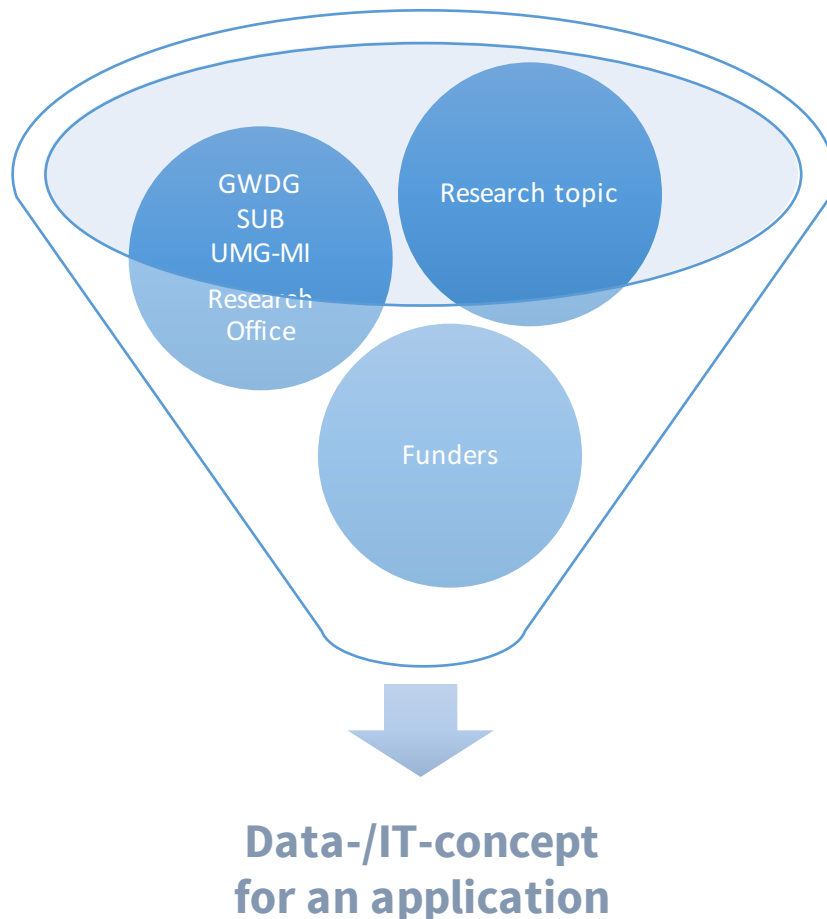
(pug) „eResearch“ unterstützt innovative Forschung durch die optimale Verwendung neuer digitaler und technologischer Methoden. Am 2. Juni 2015 hat der eResearch-Rat des Göttingen Campus mit seiner konstituierenden Sitzung im Tagungszentrum an der Historischen Sternwarte der Universität Göttingen seine Arbeit aufgenommen. Als strategisches Beratungsorgan der Göttingen eResearch Alliance – einem Gremium für Fragen zur digitalen Forschung – wird der eResearch-Rat kontinuierlich disziplin- und institutionsübergreifende Aktivitäten für zukunftsorientierte „eResearch“-Themen und -Methoden für den Wissenschaftsstandort Göttingen begleiten, um sie nachhaltig in Forschung und Lehre zu etablieren. Dem ehrenamtlichen Gremium gehören rund dreißig Vertreterinnen und Vertreter aller Fakultäten der Universität Göttingen und der außeruniversitären Forschungseinrichtungen am Wissenschaftsstandort Göttingen an.

„eResearch ist für die Stärkung der Forschung am Göttingen Campus und die Rolle des Rates für die zukünftige strategische Ausrichtung von enormer Bedeutung“, unterstrich Prof. Dr. Norbert Lossau, Vizepräsident für Infrastrukturen an der Universität Göttingen, auf der konstituierenden Sitzung. Der Göttinger

Support & services along the scientific life cycle



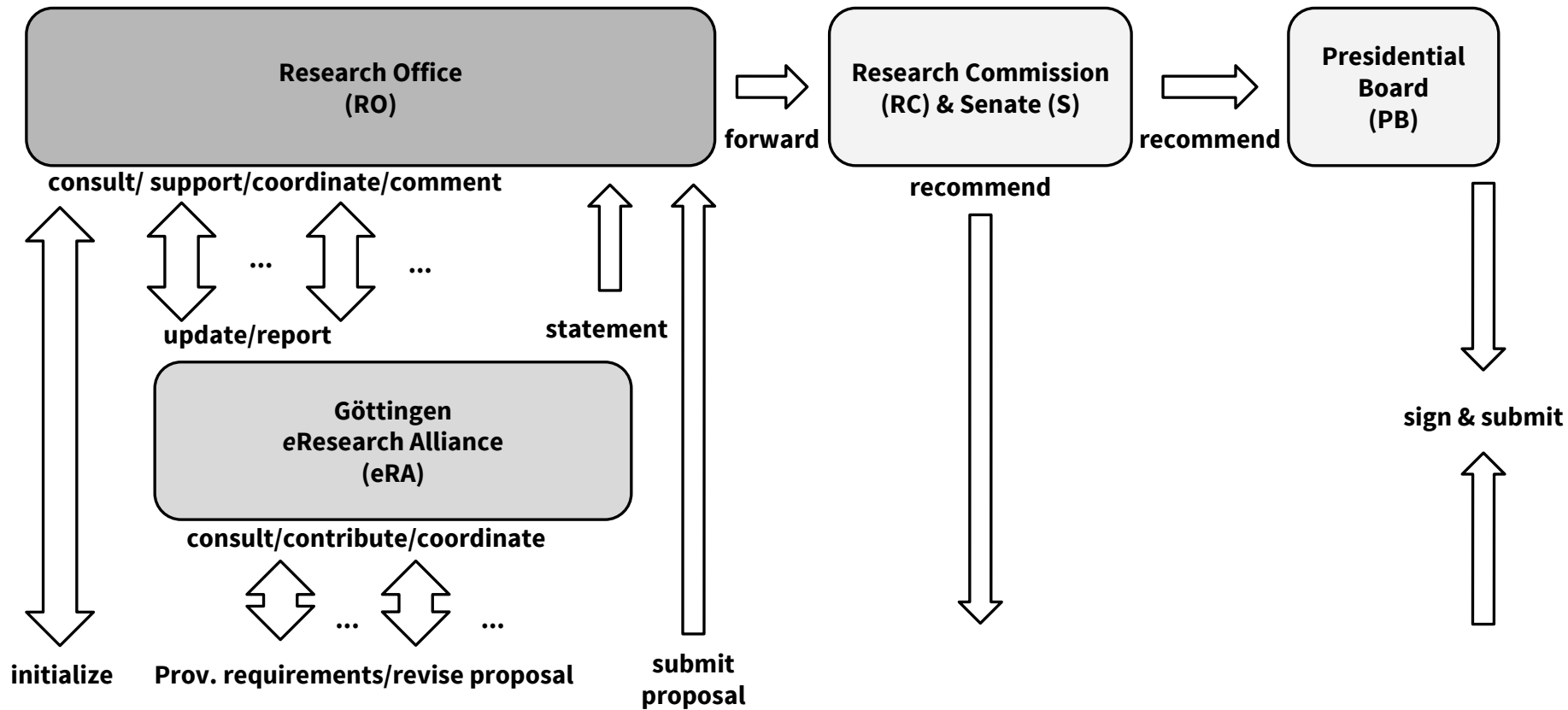


**Funder's requirements**

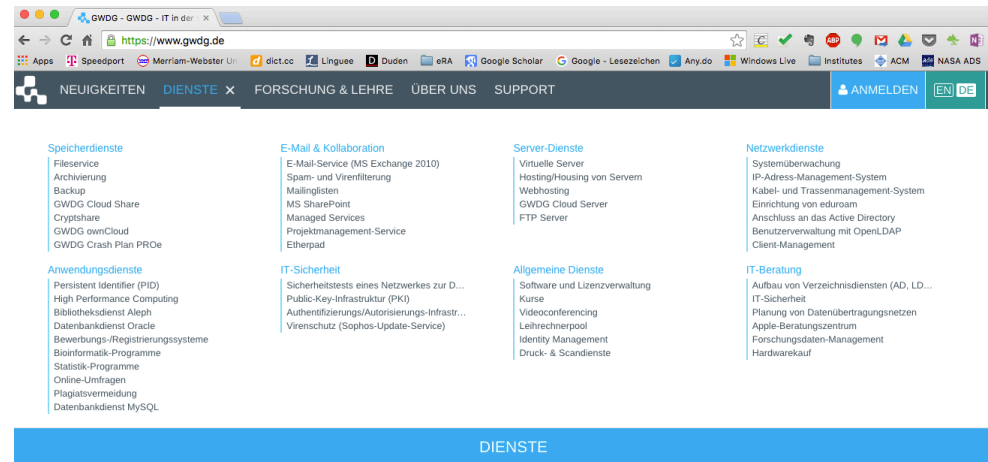
- Local (Uni Göttingen)
- National (DFG)
- International (EU)

Funding programs (#cases)

- AdW (1)
- DFG
 - SFB+TRR (9, 3 w/ INF)
 - GRK (7)
 - FOR (4)
 - 4 newly funded projects



- **Knowledge network:** Resources & experts
- Consulting and brokering
 - Repositories
 - Open Access
 - GWDG IT Services
 - TextGrid, DARIAH
 - PID-Service
 - Visualization
 - Metadata
- Inquiries by
 - Humanities and social sciences
 - DPZ
 - UMG



Consulting

Brokering

Training

Projects

Göttingen/
eResearch Alliance

- Trainings for RDM
 - Tailored courses
 - Research training groups
 - Librarians, national
 - Individual institutions and central administration
- Cooperation w/ university didactics
- Together w/ subject librarians offerings on digital literacy and RDM
- Integration of „data science“ into the curriculum

INFORMATIONSKOMPETENZ - MENÜ FÜR ARBEITSGRUPPEN

ANGEBOTE DER SUB GÖTTINGEN
FÜR DIE FAKULTÄTEN
CHEMIE UND PHYSIK



SUB | NIEDERSÄCHSISCHE STAATS- UND
UNIVERSITÄTSBIBLIOTHEK GÖTTINGEN

- Publication of research data
 - SUB member of DataCite
 - GWDG member of ePIC
 - Currently developing an institutional repository in Göttingen
- Large equipment portal
- Participating in third-party funded projects
 - Research projects
 - 3 CRCs w/ INF sub projects
 - Infrastructure projects
 - Research data management planning tool (running locally)

Text-image-link-editor

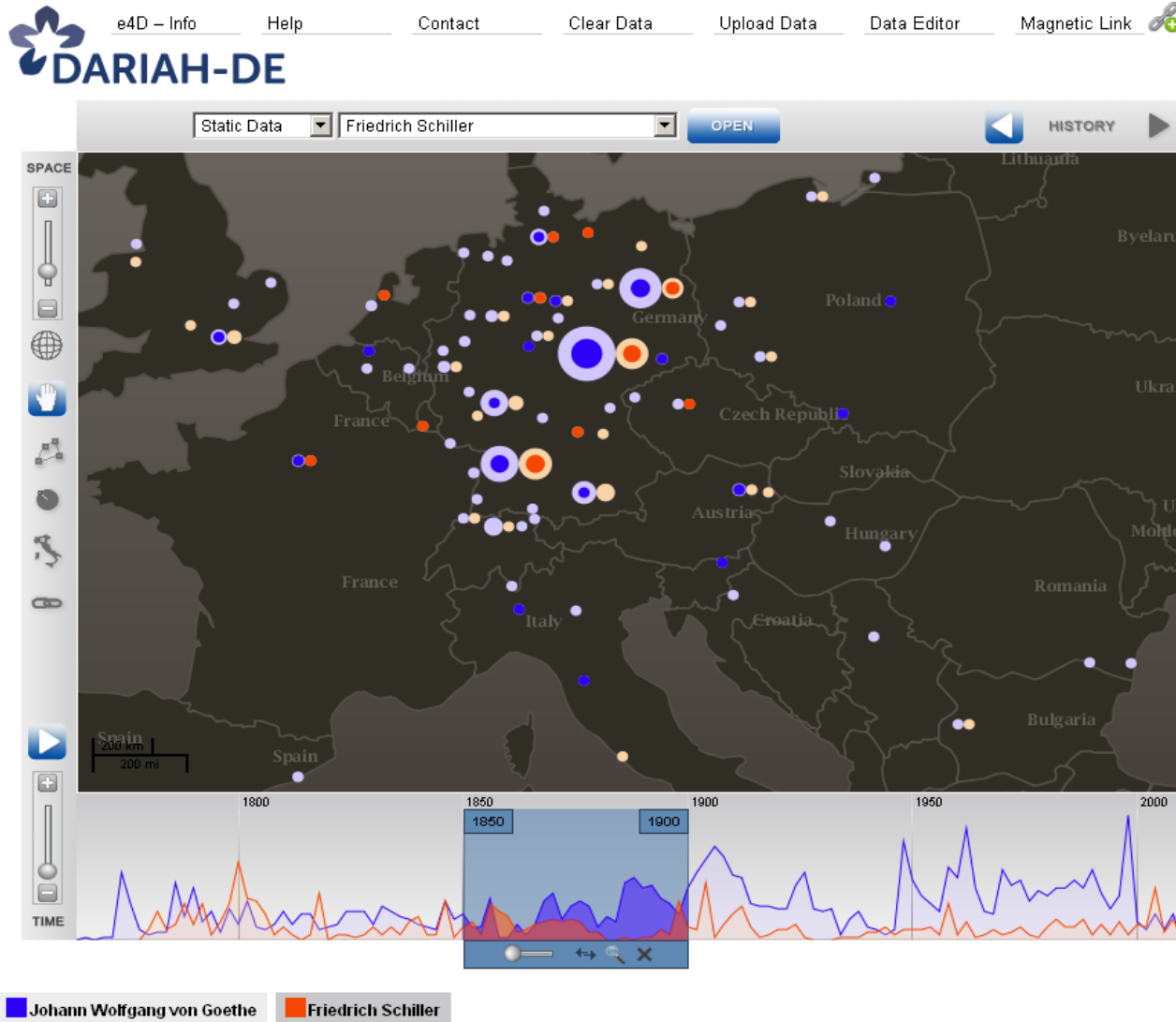
The screenshot displays the TextGridLab application window. The top menu bar includes 'Datei', 'Bearbeiten', 'XML', 'Werkzeuge', 'Fenster', 'Hilfe', and 'XML'. Below the menu is a toolbar with various icons. The left sidebar contains a 'Navigator' pane with a tree view of project files, including 'Homer', 'Biographie: Homer', 'Epen', 'Ilias', 'Odyssee', and a list of authors. A 'Werkzeug' (Tool) pane is also visible, showing a red square and a magnifying glass icon. The main workspace is divided into two panes. The top pane, titled '00013 Erste Seite', shows a manuscript image with a red grid overlay. A large red 'O' is visible on the left. The text is in Latin. A red rectangle highlights a portion of the text, and a red arrow points from this rectangle to the XML code below. The bottom pane, titled 'Ilias.xml', shows the XML markup for the highlighted text. The XML code is as follows:

```
</msIdentifier>
<msContents>
  <msItem n="17">
    <locus>236r-243v</locus>
    <author>Homer</author>
    <title>Ilias</title>
    <incipit>Oram <anchor xml:id="a10_start" />pande<anchor xml:id="a10_end" />mihi pelidae <anchor xml:id="a10_end" />
    <explicit></explicit>
    <colophon></colophon>
    <decoNote></decoNote>
    <note>
      <p></p>
    </note>
    <textLang></textLang>
    <filiation></filiation>
    <listBibl>
      <head></head>
      <bibl>
        <title></title>
        <biblScope></biblScope>
      </bibl>
    </listBibl>
  </msItem>
</msContents>
```

At the bottom of the window, the status bar shows 'Text Grid Author' and 'Ilias / textgrid:qzn.0'.

link text with image

Humanities: Geo-Browser – space-time-visualization



Publications
of/about
Goethe und
Schiller
between
1850-1900,
based on
catalog data
at SUB
Göttingen

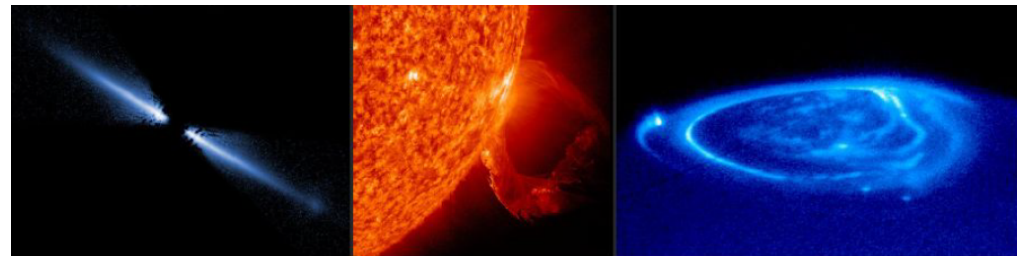
CRC 990 EFForTS: INF-Project

- Large **interdisciplinary** research project (CRC) with integrated service project for information & infrastructure (INF)
- **100+ researchers**, field work: Indonesian Rainforest
- Lots of different data require management
- Provide an information system for research data, write an Excel transformation script, moderate **sharing agreements**, ...
- **Embedded Data Managers** know:
IT Basics, data modelling, concepts of metadata,
...
and how to:
analyse requirements, moderate discussions,
search information, learn new things rapidly ...



Datamanager Fabian Cremer in Indonesia,
photo taken by Heike Neuroth

CRC963 Astrophysical flow instabilities and turbulence



ADIR - CRC 963 Research Archive - Project a12 [Home](#) [About](#) [Logout](#)

SIDEBAR

Oliver Schmitt
(oliver.schmitt@gwdg.de)

[Overview](#)

[Postbox](#)






[Archive](#)

[Transfer Key](#)

[New Transfer Container](#)

[Documentation](#)

Postbox Content

	BH_CND_coevolution	archiving requested
	NyxCode_IDG	archiving requested
	archive_test	owned by other user
	transfer_container_e723dc51-3f77	archiving requested
	MNRAS2013a	owned by other user

Transfer containers are listed, if they contain the file *receipt.json*.
Only owners of transfer containers can edit metadata and archive files.

- Archiving of simulation and experimental data of 16 sub-projects
- Direct data transfer from parallel or lab computers
- Allocation of Persistent Identifiers and annotation of metadata in web browser

The SFB 1002 lab notebook sticker

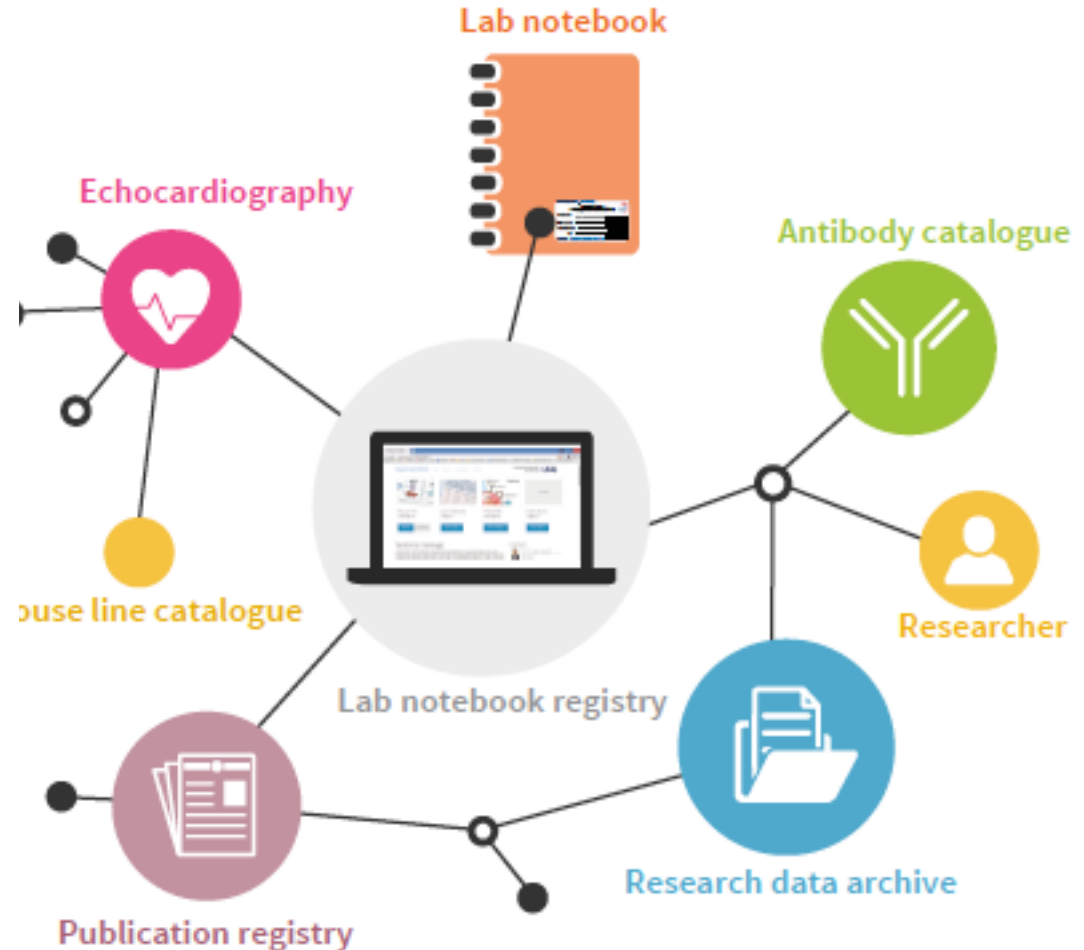
Unique name (EPIC PID)

The EPIC PID is a world wide unique identifying string in the WWW, that uniquely names the registered lab notebooks and makes them citable.

Further info: www.pidconsortium.eu

URL of lab notebook

The URL allows for an easy call of information about the lab notebook on the website of the research data platform.



Sonderforschungsbereich 1002 ■ Lab notebook registry

<https://hdl.handle.net/110222/umg-sfb1002-9999>

Surname: _____

First name: _____

Period: from: _____ to: _____

AG Müller ■ UM Göttingen

Identification of work group

Information about the working group affiliation of the lab notebook.

QR code for easy scanning

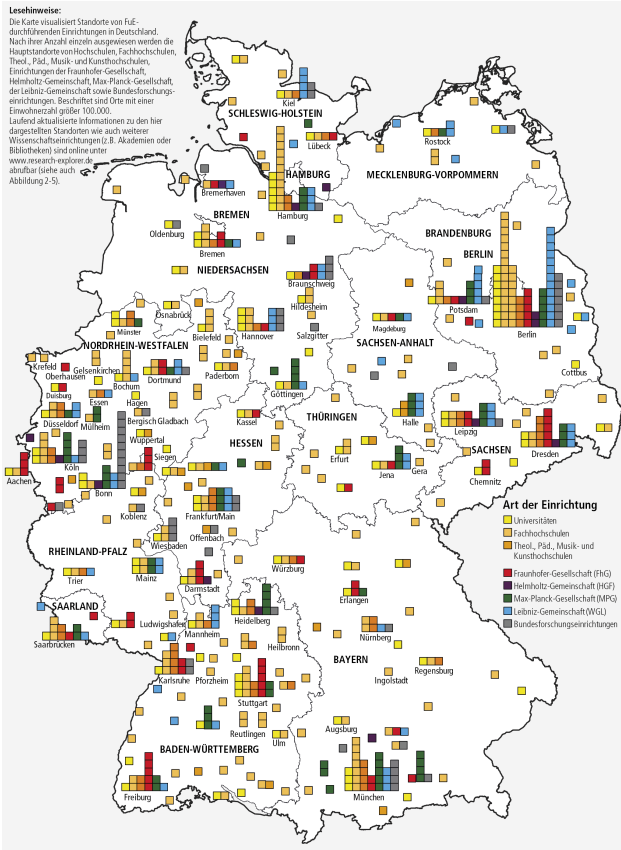
To speed up access, the lab notebook registry website can be called with an QR scanner (e.g. smartphone).

Data of lab notebook author

Surname, first name and the period of time of the lab notebook usage

Wider Dimension – Projects, Shared Services Committees

Abbildung 2-4:
Standorte von Wissenschaftseinrichtungen in Deutschland



© Deutsche Forschungsgemeinschaft (DFG) – Förderatlas 2012

Selected activities in digital infrastructure

- Federation of Biological Data: [GFBIO](#)
 - Ecosystem Research Platform: [BEXIS](#)
 - Big Data: [Mikelangelo](#)
 - High Performance Computing (internal)
 - Digital Humanities Infrastructure: [DARIAH](#)
 - Humanities Data Centre: [HDC](#)
 - Digital Editions Tools: [TextGrid](#)
 - Open Access Infrastructure: [OpenAIRE](#)
 - Confederation of OA Repositories: [COAR](#)
 - Publishing: [Göttingen University Press](#)
- Funding: through projects, c. 50 projects, 80 people > 5Mio p.A. or membership models

Example: German Council for Information Infrastructure


THE COUNCIL
FACTS
DOCUMENTS
DATES
CONTACT

GERMANY TODAY

- › Rapid advancement of IT technologies for Science
- › Germany is well-positioned
- › Leading scientific institutions
- › Successful e-Science initiatives

WHAT'S MISSING?

- › Comprehensive monitoring of the science system at large
- › More dovetailing between initiatives
- › Unlock potential of synergies in the science system

SCIENTIFIC INFORMATION INFRASTRUCTURE ON THE POLITICAL AGENDA

"We will develop a strategy for the digital transformation in science, f.e. for enhanced accessibility of research data. Together with the federal states we will fund a Council for Scientific Information Infrastructures which coordinates stakeholders in the national science system and drives the development of strategies and standards across disciplines and institutions."

*Coalition agreement CDU, CSU and SPD
18. Legislation period, December 2013*

TO FACILITATE AND ACCELERATE DIGITAL TRANSFORMATION IN THE SCIENCES ON A NATIONAL LEVEL

The Council will monitor transitions in the German science system at large and give practical recommendations to Science and Government. It will specifically

- › Provide foresight on the development of digital science
- › Facilitate coordination of existing activities
- › Identify potential synergies between the multitude of actors and new fields of action
- › Facilitate cooperation within the science system
- › Monitor transition on an international scale

International Dimension – an example

- DARIAH as European ESFRI project
- ERIC as legal entity
- Member state commitments
- Central offices in Göttingen



Summary and prospects

- Research-oriented infrastructure providers team up
 - Central point of contact
 - Pooling of existing offerings, resources, and know how
 - Networking locally and on a (inter)national level
 - Collect eResearch requirements
 - *Balance between support for individual researcher and large research consortia*
- Einbindung aller Forschungseinrichtungen am Standort
 - *Governance*

Thank You!

Jens Dierkes

<http://eresearch.uni-goettingen.de>

info@eresearch.uni-goettingen.de

Eine wichtige Referenz hierfür ist unsere Webseite <http://ereseach.uni-goettingen.de>

Göttingen/ **eResearch Alliance**

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Funders' Requirements and Guidelines

Research data policy of Göttingen University Research data policy of DFG (only in German) Horizon 2020 / Open Research Data Pilot BMBF; Data management checklist for...

More

Your research project | Your data | Our services!

We understand eResearch as *enhanced* research, which to us means an optimized usage of **digital technologies and methods for innovative research**. As a single point of contact for scientists and scholars on the [Göttingen Campus](#), we offer information, personal advice and support for key issues related to digital research through all phases of the research life cycle: Ideas, Research, Results!

Ideas

- Project proposal support
- Data management planning
- Expert network

Research

- Workshops & Trainings
- ICT services
- Visualisation & Exploration
- Data strategy implementation

Results

- Persistent Identification
- Data publication
- Long term archiving

more

Guidelines

- Research data policy of the Georg-August-University Göttingen (incl. UMG)
- Open Access Politik der Universität Göttingen (only German)

News

- Neues Zentrum eLabour am Göttingen Campus (Artikel Göttinger Tageblatt)
- Info-Veranstaltung Datenmanagement-Basics (UMG) am 24. Nov. 2015
- eResearch Alliance at the Scientific Integrity and the responsible Conduct of Research DPZ Workshop

www.ereseach.uni-goettingen.de

External Board



Presidial Board

GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

eResearch Council

Göttingen
Campus



*Board of
Directors*

Steering Group

Project Manager

Team

Göttingen/ **/eResearch Alliance**

Summary

1. Key question: Is there an overarching concept or strategy for a digital research infrastructure or e-Research?
 - Embedding in overall Campus 2020 concept
 - eResearch Alliance (eRA) as main activity for digital research infrastructure
2. Key question: What is the role of central units (like IT centers, libraries) and their link to research processes?
 - IT Services and Library as well as Research Office as ‚drivers‘
 - Links to research processes in individual projects and services („brokering“)
3. Key question: How is the relation of local information infrastructure in a national and international context?
 - Many collaborative projects, (shared) services, organisations and committees