Göttingen eResearch Alliance

Report for External Advisory Board

2019/2020

Reporting Period: 06/2019 – 05/2020
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Summary

The Göttingen eResearch Alliance (eRA) is a service unit of the University of Göttingen for the Göttingen Campus with a focus on research data management and related topics. The eRA started in 2014 offering consulting, training, networking and IT services. The report at hand summarizes the results and events between June 2019 and May 2020 for the External Advisory Board of the Göttingen eResearch Alliance.

Overview

The purpose of this document is to summarize the results of the work of the Göttingen eResearch Alliance (eRA) between May 2019 and May 2020. Furthermore, this document provides an outline of the plans of the eRA for the coming months.

Structure of the Report

Following the overview, we provide general feedback on the recommendations provided by the External Advisory Board for the period of 2018/2019. This part is followed by a description of the key performance indicators (KPIs) that have been redefined to better judge and adjust the work and outcome of the Göttingen eResearch Alliance. After that, we report on the results of the four main pillars of the eRA portfolio: (i) consulting, (ii) training, (iii) networking, and (iv) [digital] services. Each section contains selected results for each of the pillars. Next, we describe a number of outreach activities and the results of 3rd party funded projects acquired by the eRA. After a brief description of the eRA team retreat the report is completed by an outlook on the plans for the next reporting period.

eRA Team and Governance

The core staff of the Göttingen eResearch Alliance consisted during the reporting period of:

- Coordination & Management
  - Jan Brase 10% (funded through the SUB)
    - Scientific Coordination
    - Liaison to RDD from SUB Göttingen
    - Management of eRA networking and liaisons
    - Consulting for Humanities & Mathematics
  - Timo Gnadt 100% (**funded fully through the eRA**)
    - General management and coordination
    - Support for GRO.instruments
    - General consulting
    - Training
  - Philipp Wieder 10% (funded through the GWDG)
    - Scientific Coordination
    - Liaison to eScience group from GWDG
    - Management of eRA service development
    - Consulting for Natural Sciences and Life Sciences

- Team and Associated Members
  - Raisa Barthauer 100% (funded through SUB) starting from 06/2020
    - Support for GRO.identifiers
    - DOI help desk
  - Sven Bingert 10% (funded fully through GWDG)
    - Planning and execution of the Data Science Summer School
    - Consulting for Physics and Natural Sciences
    - Technical consulting for research data management projects
  - Marcel Hellkamp 50% (**funded through eRA**)
    - Service architect and service developer (backend)
    - Technical consulting on repository, archival and data management solutions
  - *Claudia Engelhardt 100% (funded through 3rd party funding) until 07/2019*
    - *Project GRACE*

- Péter Király 100% (**funded through the eRA**)
  - Service development and support for GRO.data
  - Technical consulting and integration of project data into GRO.data
  - Consulting for the Humanities & Libraries
  - Consulting on data visualization
  - Training on RDM and GRO.data
- Harald Kusch 10 % (funded through the Medical Informatics Department of the UMG)
  - Liaison to UMG
  - Project manager of menoci.io (Research Data Management platform)
  - Consulting for Medicine and Life Sciences
- *Claudio Leone 100% (funded though SUB) until 03/2020*
  - *Support for GRO.instruments*
  - *Support for GRO.identifiers*
  - *DOI help desk*
- Jens Nieschulze (funded though University of Göttingen)
  - Liaison to the University of Göttingen
  - General consulting
- *Jan Rohden 20% (funded fully through SUB) until 11/2019*
  - *Liaison to DARIAH, contact point for the humanities at campus Göttingen*
  - *General Consulting*
  - *Teaching*
- Lena Steilen 77% (funded through GWDG)
  - General administration and organisation
- Ubbo Veentjer 50% (**funded through eRA**)
  - Developer GRO.data and GRO.plan

Depending on the actual request, other people from Göttingen Campus partners are involved.

Some of the listed persons left the Göttingen eResearch Alliance during the course of the reporting period: Claudia Engelhardt left at the end of July 2019, Jan Rohden left end of November 2019 and Claudio Leone left the eResearch Alliance end of March 2020.

Steering Group

The steering group did not change in any aspect compared to the last report. All steering group members can be found in “Appendix A – Members of the eRA Steering Group”.

Addressing the Feedback from the eRA External Advisory Board 2019

We would like to acknowledge the effort and the time invested by the External Advisory Board to analyse and assess the directions and deliverables of the Göttingen eResearch Alliance. In the following, we address each of the recommendations made by the Board (displayed with grey background) in response to the eRA report from 2019.

General remarks

The board notes very good progress. It has been evident that the team works well together with a notable team spirit and positive ambiance. The progress concerns the strategic topics, policy work and also the technical deliverables and projects. Looking back, eRA has achieved a notable record of accomplishments in the community. The report and presentation made it clear that the leadership and team has considered lessons learned from the past years to improve the services further - and to speak with one voice to the local community. Noting this solid base, it is now important to prepare and execute a strategy for the next years that scales with local, national and international demands. Moreover, it deems important to further address the value of data assets on university level. If the university as a whole integrates data and code into the university brand/marketing and strategy as a Unique Selling Point, this can truly influence the campus´ research culture. This is even more important now that responsible and reproducible research is a talking point everywhere.

The last 12 months have seen major developments on the campus with the respect to research data. The Campus Institute Data Science (CIDAS)[1] is operational with a clear focus on integrating research, education, and services. There is currently an interdisciplinarity discussion on the development of a strategy for reproducible research (including data and code) within CIDAS, in which the eRA is involved.

Coordinate with disciplinary activities

With the growing range of services, it is important to coordinate well with disciplinary activities, e.g. at EBI or other lab facilities around the world. They often have rich data resources that might create additional value to services provided in Göttingen or to any local community and vice versa.

In the last 12 months, eRA has been involved in a number of existing discipline-specific initiatives and has been part of the coordination of new initiatives. These include:

- GFBio[2] & NFDI4BioDiversity[3] for the area of Biodiversity
- CLARIAH-DE[4] & Text+[5] & MINE for the area of Humanities
- NFDI4Health[6] & HiGHmed[7] for the area of Medical Sciences
- Cluster Multiscale Bioimaging (MBExC)[8] for the area of Life Sciences
- eLabour[9] & KonsortSWD[10] for the area of Social Sciences

This effort will be intensified to also reach further activities and market the support and service options provided by the eRA.

1 https://www.uni-goettingen.de/en/611566.html
2 https://www.gfbio.org/
3 https://www.nfdi4biodiversity.org/
4 https://www.clariah.de/indexEN.html
5 https://www.text-plus.org/en/index.html
6 https://www.nfdi4health.de/
7 https://www.highmed.org/
8 https://mbexc.de/
9 http://elabour.de/
10 https://www.ratswd.de/en/konsortswd

Integrate into international frameworks

With the German Research Data Initiative and the European Counterpart (EOSC) Göttingen must technically and organizationally connect to those efforts. The current ROI might not be clear at this moment and so effort invested should continuously be evaluated. However, it might be strategically and technically relevant for the forthcoming years. Particularly noteworthy in this regard are again emerging global disciplinary activities and standards, which need to be on ERAs agenda. ERA needs to serve as an interface here.

In the last 12 months, the eRA has been very active in the establishment of NFDIs as central German research data infrastructures. On the European level, the eRA was active in project proposals related to INFRAEOSC-03[11] and INFRAEOSC-07[12], establishing a regular meeting on campus with the directors of SUB und GWDG as well as people involved in the respective projects and efforts. The aim of this group is to strategically decide where to be involved and how to best join forces. This resulted in participation the following proposals and open calls:

- INFRAEOSC-03 (through OpenAIRE[13], SUB)
- INFRAEOSC-07 (through EUDAT CDI[14], GWDG)
- Archiver -> Archival & Preservation Service for EOSC (through GWDG)

On the global level, eRA is still active in the Research Data Alliance (RDA)[15] and currently engaged in the funding of a joint RDA/CODATA[16] task group focussing on RDM services on campus (its development has been currently postponed due to the measures taken against Covid-19).

Distinguish Monitoring and Strategy more explicitly

ERA presented its first KPIs. We recommend splitting KPIs for monitoring and overall strategy (=targets). The latter requires the definition of specific targets for a year (for example). Monitoring KPIs are surely needed to evaluate performance and progress but need a framework (again: strategy) to become meaningful.

The eRA extended and specified their initial set of KPIs according to the recommendation. Please refer to the subsequent section on “Key Performance Indicators” for details.

Review scalability

It is great to see the increasing demands and service provision by ERA. Following a high-level strategy (presumably coming from the highest boards of the university), it should be prioritized how requests, programs and projects are prioritized and run. It is of course great to see that ERA managed to fundraise several projects. However, this can only help with temporary R&D work and long-term plans need to in place in any case.

The respective governance framework and the high-level strategic planning and steering of execution are already in place. The following next steps are needed to close the gap and will be implemented within the next period:

- Extended requirements gathering from scientific disciplines through council
- Fine-grained steering through KPIs still work in progress

11 https://www.eosc-portal.eu/infraeosc-03-2020-integration-and-consolidation-existing-pan-european-access-mechanism-public

12 https://www.eosc-portal.eu/infraeosc-07-2020-increasing-service-offer-eosc-portal

13 https://www.openaire.eu/

14 https://eudat.eu/eudat-cdi

15 https://www.rd-alliance.org/

16 https://codata.org/

Key Performance Indicators

In early 2019, the eRA defined an initial set of key performance indicators, which were then presented to and commented on by the External Board members. One critical point suggested for improvement was to define the purpose of each evaluator, i.e. whether it should serve for monitoring certain quantitative or qualitative developments, or if it is understood as a target value which should be achieved.
In the past year, the eRA extended and refined their initial set based on these recommendations, their experiences with the initial set and internal requirements for self-evaluation regarding the various eRA activities. In doing so, we pertained to the systematic approach of defining various properties for each KPI, and addressing issues regarding the four eRA pillars (consulting, training, networking, and services) while extending specific KPIs for individual services depending on their function.

There is no generally valid way to specify a KPI. This should be done depending on the strategy of the respective institution and the processes to be assessed. With respect to the eRA, KPIs are defined and measured as input to the strategic process, to evaluate the success of services and actions, as well as to adjust priorities and resource usage. KPIs help, for example, to understand which services are used to which extent and where the eRA has to increase marketing or to check whether the service actually fulfils the needs of the users.

While the resulting set of KPIs in our view has already gained significantly in usefulness and maturity, they will remain subject to change: the eRA will continue to check the feasibility and applicability of its KPIs, adjust them or add further KPIs. For this, we plan a regular exchange and evaluation through the eRA Council, the Steering Group, and the Quality Management Team of the GWDG, which is responsible for the ISO 9001 certified quality management system, and last not least with the External Advisory Board, whom we specifically ask to critically review our current approach.

All KPIs have been defined with the properties ID, Name, Area (relating to the four eRA pillars), Metric (definition of criterion to be evaluated), Target value (where applicable), Source of data, Means of acquisition, Type (Monitoring purpose, Target value definition or planned transition from the first to the latter), and Objective. You can find the full list of 53 KPIs as of June 2020 in the detailed table in “Appendix B – List of extended KPIs”.

Report of eRA activities

In the following sections, we describe the activities and progress for each of the four pillars of the eResearch Alliance portfolio: Consulting, Training, Networking, and [Digital] Services.

As an introduction, we show some numbers and proportions of the eRA activities.

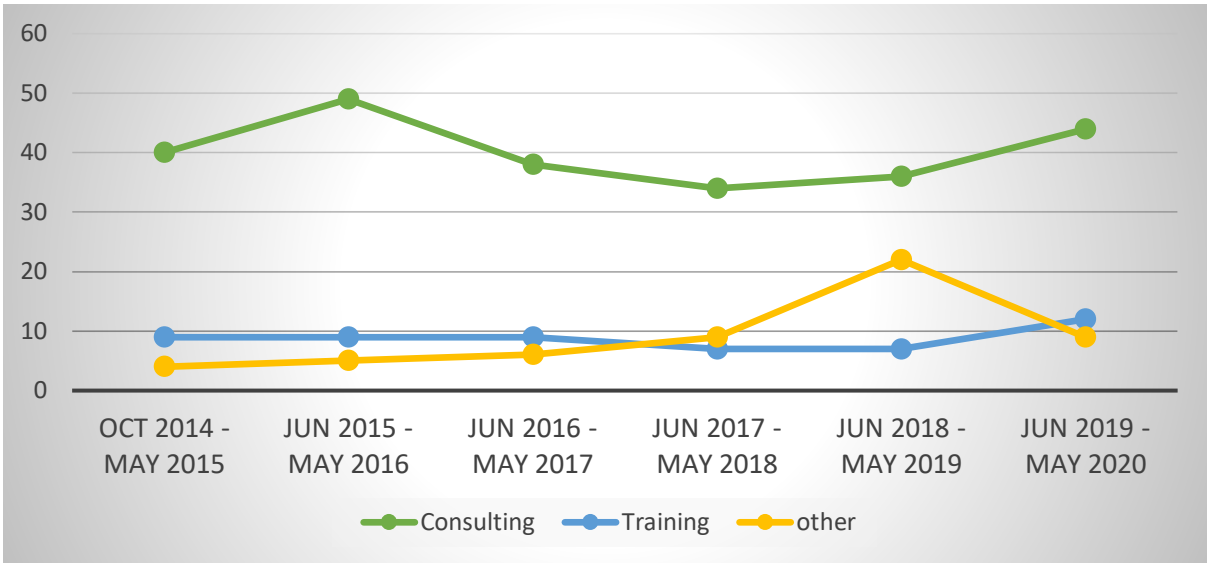

Figure 1: eRA activities per reporting year

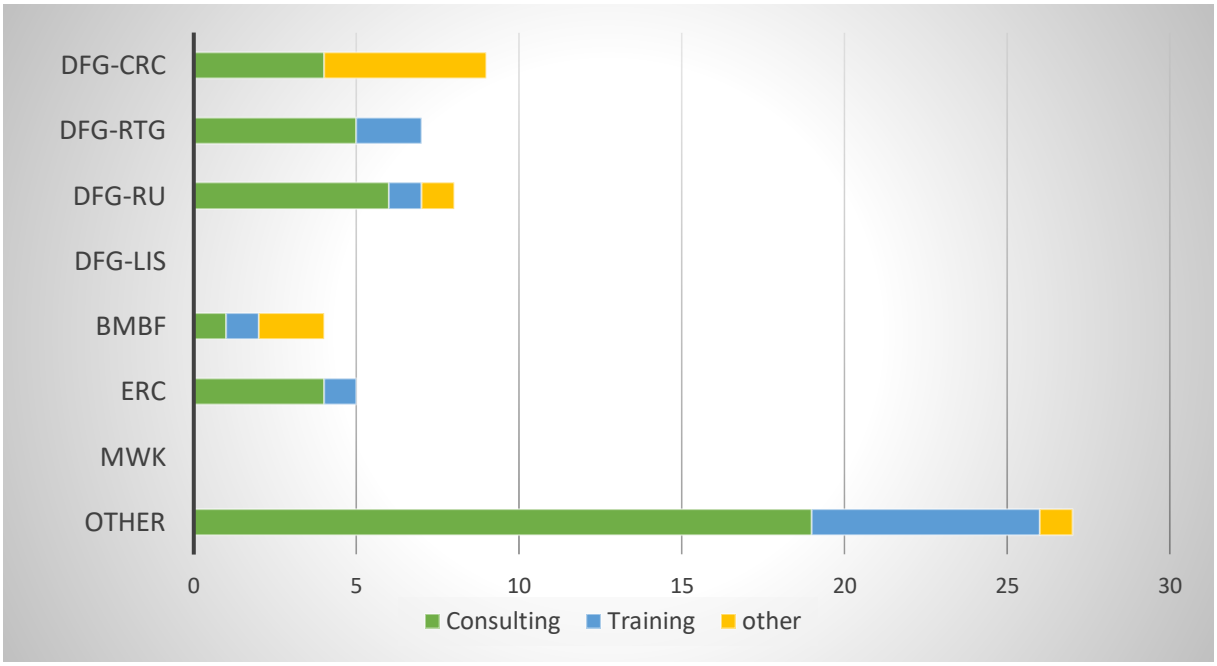

Figure 2: Numbers of eRA activities per funder in reporting year 2019/2020

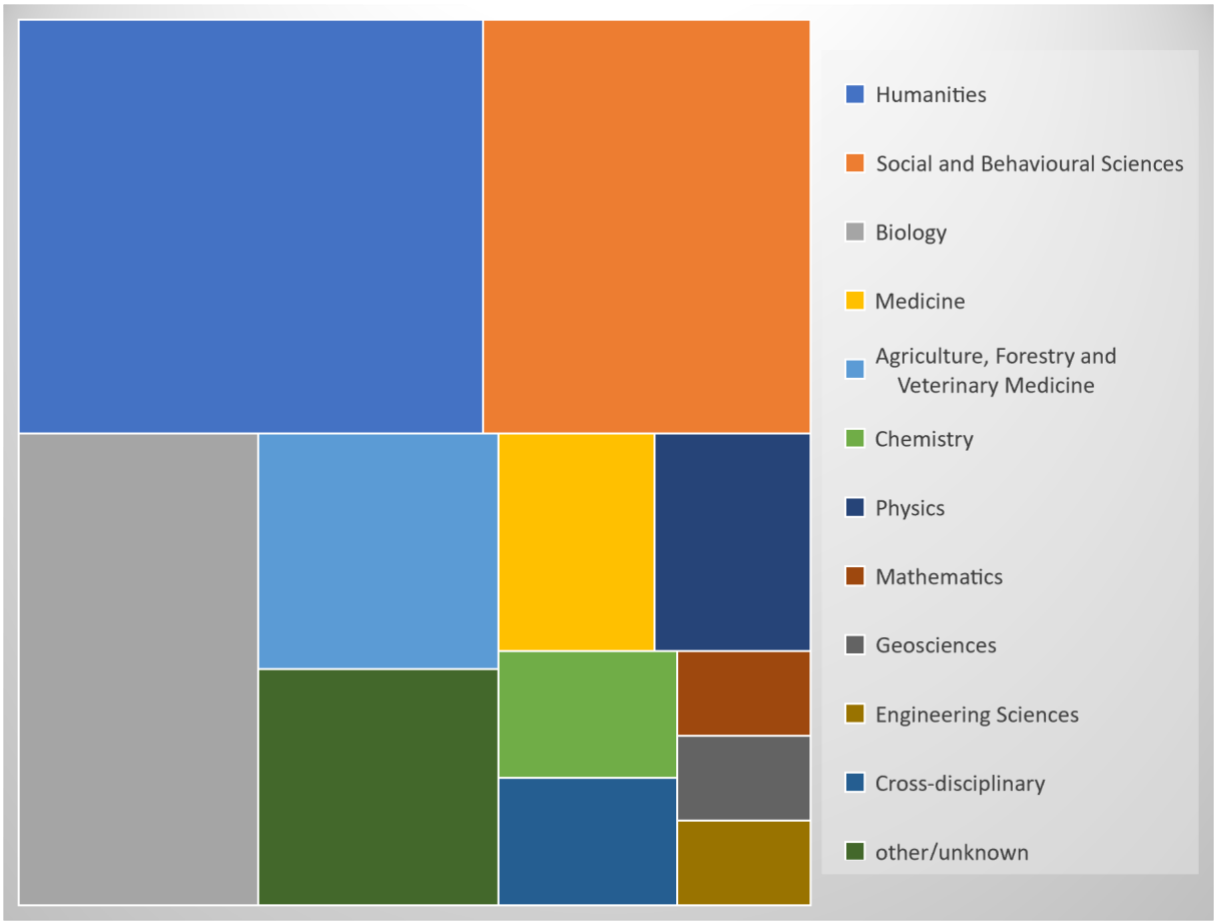

Figure 3: Proportions of eRA activities per discipline in reporting year 2019/2020

Consulting

The eRA offers consulting on a large variety of topics related to eResearch to individual researchers, groups, or projects. Apart from the requests' relation to eResearch topics, consulting is not limited to a certain range of topics, i.e. the eRA does in general not refuse any consulting request. Requests that cannot be fulfilled by the eRA itself are normally brokered to other players on the Göttingen Campus or other partners from the extended network of the eRA.

Main consultation topics during the reporting period concerned research data management issues such as data storage and data exchange, data policies and best practices. In a number of cases, technical support through the provision of specific services such as a data platform was provided.

- Consultation of University of Hildesheim on data repositories and data preservation (ongoing)
- Integration of GRO.data into service portal for all universities in Lower Saxony ("Academic Cloud")
- Broad set of individual consultations
    - RDM, Open Science, legal issues, data visualization, PIDs, storage options, …

Consulting of Large-Scale DFG Projects

As in the past years, the eRA is dealing with a constant stream of proposals for DFG coordinated projects. The workflow that involves eRA in the university-wide quality assurance process for DFG coordinated projects, which is overseen by the Research Department, is still working reasonably well. Missing or insufficient consultation phases have decreased, and are still mainly due to late information about upcoming proposal drafts from the side of the researchers. Nevertheless, the eRA also sees potential here in assessing the required internal resources used in and required for the consultation process, as well as improving structure and documentation of its own activities. Both of these aspects are reflected in the definition of KPIs for consultation.

The consultation requests and issues resulting from the workflow with the Research Department span a variety of topics and also differ significantly in the eRA involvement through the phases of project proposal, project implementation and project evaluation. You can find an overview of consulted projects and the consultation topics in "Appendix C – Consulting of Large-Scale DFG Projects".

NFDI consultation and participation

In 2019, a strong focus of eRA consultation activities was put on NFDI consortia, in some of which the eRA is involved with different engagements. The NFDI consultation consumed large amounts of resources until October 2019.
The eRA participates in the following NFDI proposals for consortia that were submitted in 2019

- Text+ (Humanities)
- NDFI4Culture[17] (Humanities)
- NFDI4Biodiversity (Biodiversity)
- NFDI4Ing[18] (Engineering)
- ForumX[19] (interdisciplinary)

[17] https://nfdi4culture.de/

[18] https://nfdi4ing.de/

[19] https://www.forumx.org/

Additionally, the eRA was consulting further proposals. In a total 11 consortia proposals have participants from Göttingen (out of 22 submitted in 2019).
In May 2020 the 9 consortia were announced that were successful in the first round. 6 out of these 9 consortia which have been recommended for funding have participants from Göttingen.

On-Demand Service Development

One specific offer within the portfolio of the eRA is related to service development. As projects and faculties not only struggle with the sustainability of their services, but also with the integration of their proprietary solutions into campus solutions, or the fact that recruitment of IT staff is getting more and more difficult, the eRA offers the following:

- Connection to campus services
- Customizing existing services to meet the requirements of specific projects
- Software development of complete services

Evaluation

Based on the KPIs related to Consulting (see Section "Key Performance Indicators") the eRA has been evaluating all consultation activities since 2014. As of today, a total number of 144 consulting activities have been collected from records, tickets, and mail communication.

ID	Name	Metric	2018/2019	2019/2020
C-01	Consultations	Number of consultations per year	36	42
C-02	Consultations per Discipline	Amount of consultations per discipline per year (given cumulatively until 01.06.2020; for consultations with multiple disciplines, each discipline is counted separately)	n/a	Humanities: 44 Social & Beh. Sciences: 38 Biology: 43 Medicine: 35 Agric., Forestry & Vet. Med.: 20 Chemistry: 9 Physics: 12 Mathematics: 4 Geosciences: 6 Engineering Sciences: 5 Cross-disciplinary: 3 other/unknown: 5
C-03	Consultations per Funder	Amount of consultations per funder per year	DFG: 19 BMBF: 4 ERC: 3 MWK: 1 other: 9	DFG: 19 BMBF: 1 ERC: 3 MWK: 0 other: 19
C-04	Time Consumed per Consultation	Amount of time required per consultation	n/a	n/a
C-05	Successful proposal consultations	Percentage of consultations resulting in funding approval	n/a	n/a
C-06	Successful other consultations	Number of positive feedbacks from researchers	n/a	n/a

Table 1: KPIs related to eRA Consulting activities

Training

Third International Göttingen Summer School on Data Science 2019

From August 2 – 16, 2019, the third International Göttingen Summer School on Data Science (DS3GOE) took place. 33 students (mainly Master and PhD students) with 15 different nationalities participated in the school. They came from research institutions of five different countries with diverse disciplinary backgrounds. Together they learned intensely about the opportunities and challenges of data science in this two weeks Summer School. The teaching focus lay on providing an overview to the multi-layered topics and methods:

- Dealing with the data life cycle
- Best practices in data management
- Methods for data analysis (modelling, statistics, mining, and more)
- Infrastructures and platforms
- Application examples
- Ethical, legal, and social aspects

The keynotes emphasized the importance of an ethical reflected handling with data and the chances and challenges of Open Data. They were both very well received through the participants. You can find the evaluation statistics of this summer school in "Appendix D – Evaluation of Data Science Summer School 2019 (DS3GOE 2019)".

It was in particular valuable for the students to use own data in hands-on sessions as example data. During these sessions they e.g. verified their own data quality, proofed their methodological approach, or tested new tools.

The multidisciplinary input was a challenge and an opportunity for the participants at the same time. The students' ability to meet this challenge was confirmed by their presentations on the last day: they showed their lessons learned, own ideas, new insights and also memorable moments of the Summer School.

Figure 4a-c: Impressions from the Third International Göttingen Summer School on Data Science, 2019

The organisation team received a lot of valuable feedback from the participants and incorporated this into the planning of the summer school 2020.

Fourth International Göttingen Summer School on Data Science 2020

Preparation Phase

It was planned to hold the fourth International Göttingen Summer School on Data Science from August 5 - 15, 2020. But the planning took place under reservations due to the worldwide measures against Covid-19. In the end, the crisis management group of the university disallowed the school to take place as face-to-face event, since secure travelling will not be possible for international students by August. The organizing team is momentarily evaluating if a shortened version of the summer school at least could be held as online event.

Regarding the overall organization, the successful cooperation between the Institute of Computer Science, the Göttingen eResearch Alliance, and the University Medical Centre was being continued. New cooperation partner is the Campus Institute on Data Science (CIDAS) which was founded in 2019. Regrettably, Göttingen International had to withdraw from cooperation with the eRA, in order to take over other tasks within the international cooperation management of the university.

Due to the pandemic situation there had been no plans to involve lecturers from the German-Japanese university cooperation HeKKSaGOn[20] in this year. The contact is nevertheless maintained and hopefully in 2021 we will be able to welcome lecturers from Japan in Göttingen again.

35 participants had been chosen from about 300 applications. The programmatic focus was planned to shift more towards practical learning and hands-on sessions this year, based on the feedback from the previous summer school. Therefore, longer sessions had been planned with a smaller group of lecturers.

Other Training Events

The eRA offers a large variety of training topics to individual researchers as well as research groups and projects. Here, we report on the events that a) target larger groups and b) consume a lot of time to plan and implement. During the reporting period, this includes:

- *Training for project FODEX:* In June 2019, the FODEX[21] project, which deals with political and religious extremism in Lower Saxony, received a training on research data management for around 10 PhD and PostDoc researchers. Within this workshop, also requirements for the project's data exchange platform were discussed, which is being developed by colleagues from the SUB Göttingen.
- *RDM Training for FOR 2432:* In September 2019, the DFG Research Group FOR 2432[22] received a training on research data management for around 20 PhD students. A part of this workshop centred around the use of the project's data exchange practices

[20] https://www.hekksagon.net/

[21] „Forschungs- und Dokumentationsstelle zur Analyse politischer und religiöser Extremismen in Niedersachsen" (https://www.fodex-online.de/)

[22] "Social-Ecological Systems in the Indian Rural-Urban Interface: Functions, Scales, and Dynamics of Transition" (https://www.uni-kassel.de/fb11agrar/en/sections/home/for2432.html)

and tools, such as GWDG ownCloud[23] and a CDSTAR[24]-based data exchange platform, which had been developed by the eResearch Alliance in the past.

- *RDM Training for iRTG 2172:* In March 2020, just before the CoViD-19 situation escalated, the eRA provided a training on research data management to the international Research Training Group 2172[25]. The training received very good feedback and sparked interest among participants in employing the electronic lab notebook solutions in use on campus.
- *Info Events at UMG:* The regular info events at UMG were continued in their half-yearly schedule. After a rise of participants in May 2019, the number dropped sharply again in October 2019, despite increased advertising efforts. For May 2019, the eRA had initially planned to organize the event in a more public space at the UMG, to raise the interest of by-passers and encourage spontaneous participation. With the separation rules set in place during the CoViD-19 phase, the event was however held online, and turned out quite successful with around 15 participants and positive feedback.
- *Other info events:* The extension of the info events to other faculties, starting with the Institute of Geosciences, was originally planned for late 2019. This Geo-Info-Event had to be shifted to April 2020 due to personnel changes and organizational issues, and was then again postponed until summer 2020. It will take place once the separation requirements have been lifted.

eResearch Lab

The eRA has started to provide a series of trainings on research data-related topics in the eResearch Lab. It was initially planned as an open space for information exchange on eResearch topics. The lab is aimed to be a joint service of different actors of the Göttingen Campus, hosted by eRA. The lab should primarily be an easily accessible space where the customers find domain experts. It is therefore planned to use the Digital Creative Space which is still under construction in the SUB main building. For the beginning, the team fixed a monthly slot in a publicly reachable room in the historical building of SUB and offers introductions to the Göttingen Research Online (GRO) services, especially GRO.data and GRO.publications. The eResearch lab started in December 2019.

Date	Topics	no. of participants
13.12.2019	GRO.data	2
10.01.2020	GRO.data	14
12.02.2020	GRO.publications	2
11.03.2020	GRO.data	5
14.04.2020*	GRO.data API	3
17.04.2020*	Introduction to R	7
12.05.2020*	eRA online RDM training test	15

Table 2: eResearch Lab events
**: held as online workshops/webinars*

Since the lab will host a diverse set of activities, the space, and its internal organization is crucial. It should be flexible to be adaptable to the type of event it hosts. It is still planned to integrate the eResearch Lab as much as possible into this Digital Creative Space and offer the respective trainings demand-driven. However, the finalization of the space as well as its

[23] https://www.gwdg.de/storage-services/gwdg-owncloud
[24] https://info.gwdg.de/dokuwiki/doku.php?id=en:services:storage_services:gwdg_cdstar:start
[25] iRTG 2172 PRoTECT: "Plant Responses To Eliminate Critical Threats" (http://www.uni-goettingen.de/en/529150.html)

partitioning, sharing and scheduling are still halted due to building problems, administrative issues and personnel changes.

The overall reception of the first eResearch Labs was good. The attendents asked several questions, several of them highlighted Dataverse use cases which we had not yet considered. Typical topics we discussed in these meeting covered the differences between data publication and data sharing, what happens if the data owner or the depositor of the data leaves Göttingen, or how big data should be handled.

For the first meetings we unfortunately chose a timeslot when the room was not openly accessible, so we changed the timeslot after being informed about this. Since the beginning of the pandemic we continued the meetings online (via GWDG Meet[26]).

The lab's two main goals are knowledge sharing about and community building around eResearch at the Göttingen Campus. The eResearch lab should encourage faculties and departments to use it for programmes organized in interdisciplinary and transdisciplinary domains for a more mixed audience.

Evaluation

Based on the KPIs related to Training (see Section "Key Performance Indicators") the eRA has been evaluating all consultation activities since 2014. As of today, a total number of 35 training activities have been collected from records, tickets, and mail communication.

ID	Name	Metric	2018/2019	2019/2020
T-01	Trainings	Number of trainings per year	7	12
T-02	Open training events	Number of open training events per year	0	0
T-03	Discipline-specific training materials	Percentage of all disciplines covered by specific training material available on website	n/a	n/a
T-04	Info events	Number of Info events per year	2	2
T-05	Webinars	Number of online training courses and webinars offered per year	0	3
T-06	Training reception	Overall and specific scores of training evaluation questions	n/a	n/a

Table 3: KPIs related to eRA Training activities

[26] a service based on BigBlueButton (https://bigbluebutton.org/), available at https://meet.gwdg.de/

Networking

In the last 12 months the networking focus for the eRA on the Göttingen Campus has been on establishing a regular exchange with the research Department and developing a general workflow with the Subject specialists („Fachreferate“) at SUB Göttingen. Through the existing connections of the subject specialist, we are aiming at promoting the services and consulting offers directly to the departments.
A cooperation with the on-campus project “Bausteine zur Medien- und Informationskompetenz PLUS” (“Key Components of Information and Media Literacy PLUS”)[27] resulted in the planning and implementation of an open online training webinar on Research data management, which will take place on June 16, 2020, through GWDG Meet.
With another on-campus project “DatenLesenLernen” (“LearningReadingData”)[28], an intense discussion on integrating the project’s goals for improving data literacy and data-handling skills among bachelor students, primarily from social sciences and humanities, with the eRA expertise, network and resources is still ongoing. In particular, this involves plans to closely cooperate between the project’s DataLab and the eResearch Lab.
Since March 2020, the eRA is also involved in contributing to the German portal forschungsdaten.info[29]. Through the involvement of associated eRA team members in GFBio[30], some content had already been contributed to the discipline-specific pages for Biodiversity, which will now be continued with support from the eRA. Furthermore, we aim to extend the section for Lower Saxony in cooperation with the University of Hildesheim, but also contribute to discipline-specific areas, e.g. for the Humanities.

Toolbox Series

The Göttingen eResearch Toolbox Series (GeTS) aims to present software and best practices for a certain aspect of eResearch, e.g. research data management or enhancement of research through digital services, which are of interest across multiple disciplines. Past topics included electronic lab notebooks and Workflow Management software. While the series was paused in 2019, we are currently evaluating options for workshops to be organized either as online formats or later in 2020 as f2f formats. The workshops topics in discussion are:

- Image databases and presentation frameworks
- Research information systems
- Large instrument portals
- Online teaching tools and best practices

Other eRA Networking Events

Further noteworthy networking events during the reporting period have been:

- Göttingen Campus PostDoc Support and Information Fair, Oct 24 2019
- RDA 14th Plenary Meeting, Helsinki, Oct 21-25 2019
- Data Carpentries Workshop Göttingen, Nov 12-13 2019
- Semantic Web in Libraries conference, Hamburg, Nov 25-27 2019

[27] https://www.sub.uni-goettingen.de/en/projects-research/project-details/projekt/key-components-of-information-and-media-literacy-plus/

[28] https://www.uni-goettingen.de/en/592287.html

[29] https://forschungsdaten.info

[30] https://www.gfbio.org/

- Visit of Alexandra Eveleigh to Göttingen, Jan 7-8 2020
- European Dataverse Workshop, Tromsø, Jan 23-24 2020
- RDA-DE meeting Potsdam, Feb 25-27 2020
- DARIAH Bibliodata Working Group, Prague, Feb 25-27 2020
- OpenAIRE NOADs visit to Göttingen Mar 3-4 2020
- GFBio Expert Round Table, Göttingen, Mar 11 2020
- DARIAH Research Data Management Working Group [online], Mar 23 2020

Exchange and cooperation with UC San Diego

From July to October 2019, Jan Brase stayed at the research data unit of the Library of the University of California San Diego (UCSD). During his stay, he evaluated the existing research data services at the UCSD campus and presented the concept of the eRA. As a result, the UCSD Audrey Geisel University Librarian Eric Mitchell and the SUB library director Wolfram Horstmann signed a Memorandum of Understanding between their institutions that can be found in "Appendix E – MoU between UCSD and SUB Göttingen". The main goal of the MoU is that UCSD and SUB Göttingen will host staff, or teams of staff, from each other's institutions for periods of up to four (4) weeks for purposes of pursuing collaborations in the areas of:

- Research Data Services
- Information technology;
- Digital Humanities;
- Metadata provision; and/or,
- Digitization / reformatting.

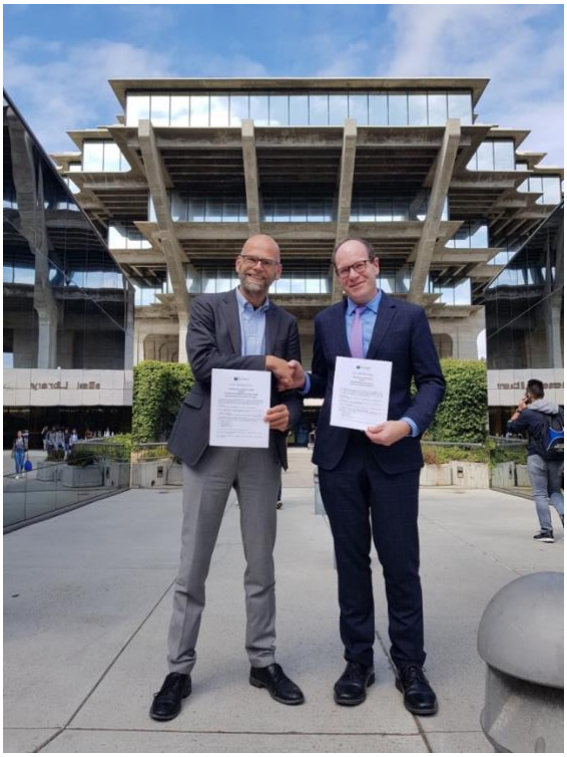

Figure 5: Wolfram Horstmann and Eric Mitchell in front of the UCSD library building

As the US colleagues are very interested in eRA and its concepts, especially the model of bundling the RDM activities of university, IT-services and library under one umbrella the first concrete goal of the cooperation will be to establish a central contact point for data services at UCSD in the next years, based on the eRA model.

To export the eRA model to UCSD, exchange meetings in San Diego in April 2020 and in Göttingen in June 2020 were planned, but postponed due to the measures against Covid-19.

Evaluation

ID	Name	Metric	2018/2019	2019/2020
N-01	Stakeholder Coverage	Percentage of stakeholders covered (Göttingen Campus partners, faculties of the University of Göttingen, selected individuals)	n/a	n/a
N-02	Conference/Workshop participation	Number of participations per year	n/a	6

Table 4: KPIs related to eRA Networking activities

Services

One central task of the Göttingen eResearch Alliance is the support for and the development of services for research data management. As support is mostly covered by consulting and training (except the actual technical support of the service operation), the Services pillar mainly reflects the portfolio of services developed by the eRA.

The overall goal of the provision of this service portfolio is to establish a core set of essential service that is required by researchers and to integrate existing an upcoming service in a best possible manner. This portfolio will be marketed under the label "Göttingen Research Online", or in short GRO.

Overall Architecture

The general idea of GRO is to have a central access portal to all services. This portal has a particular recognition value and offers centrally needed functions like single-sign-on (SSO). The various services are integrated into this portal and accessed through their respective APIs. Depending on the service, the portal can also support the controlled input of metadata. All services are integrated through APIs, which makes it easier to replace a particular product or software in case of it coming end-of-life or unbearable license cost.

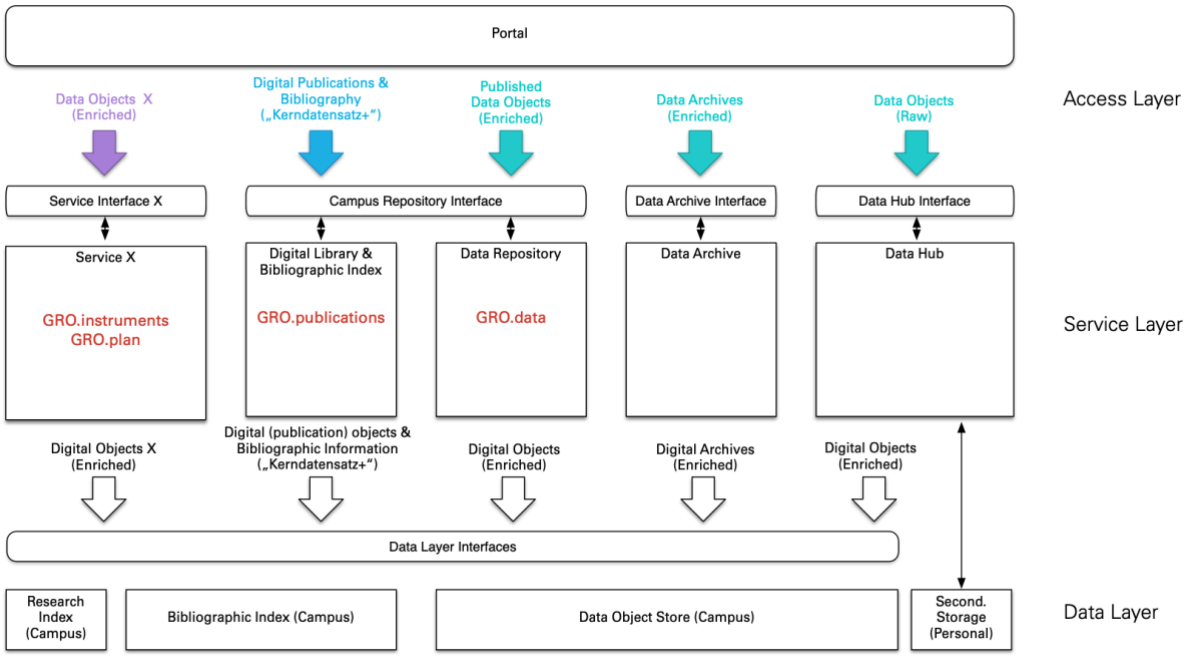

Figure 6: Overall architecture of Göttingen Research Online.

On the service layer, a variety of services have already been developed or are still under development. As of today, these are:

- An institutional, general-purpose data repository (productive, service name: GRO.data)
- A publication data management service (productive, service name: GRO.publications)
- A service to manage large-scale instruments (partially productive, service name: GRO.instruments)
- A service to develop data management plans (in testing phase, service name: GRO.plan)
- Several running services for the provision of persistent identifiers (each of them productive, service name: GRO.identifiers)

The data layer is accessed through a variety of interfaces. As of now, there are different data and metadata sources, but the long-term goal is to have a single point of truth (SPOT) for as many services as possible.
The respective services are described in detail in the following sections.

GRO.data

Status: Production
Service manager: Péter Király
Software: Dataverse[31]
URL: https://data.goettingen-research-online.de

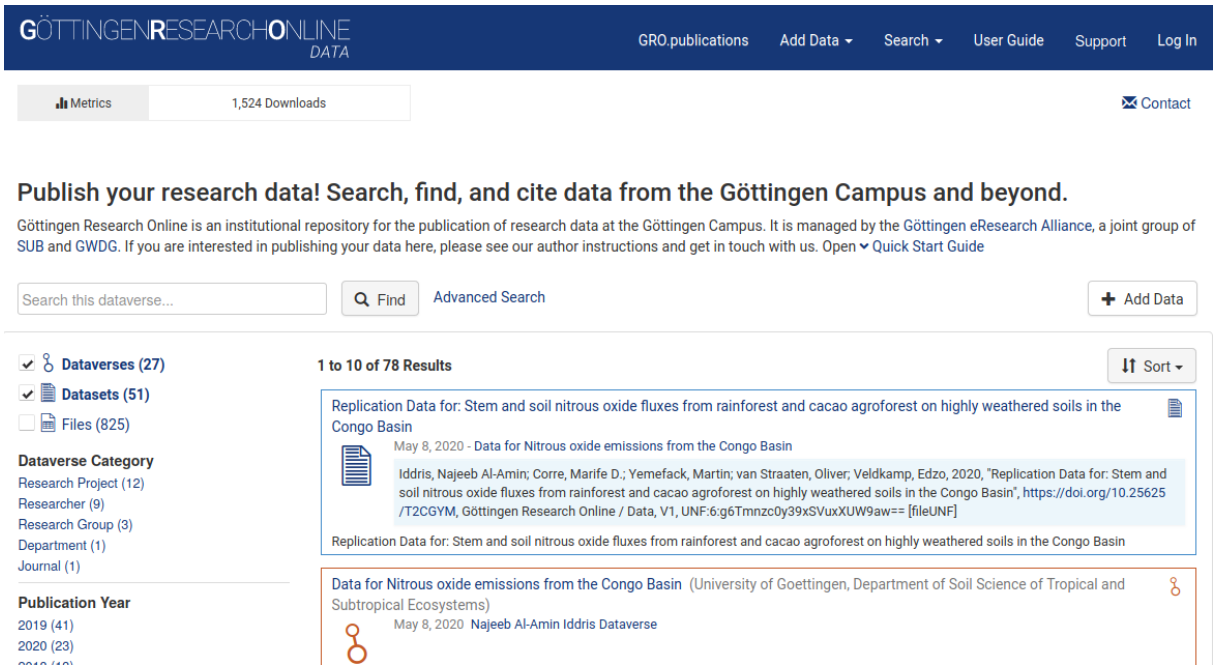

Figure 7: Screenshot from GRO.data

The institutional research data repository GRO.data enables depositing, storing, sharing and publication of any kind of research data. Data can be ingested via interfaces, e.g. through the Electronic Lab Notebook, or exported for long term archival. The data can be amended with metadata directly upon deposit or selection. GRO.data supports researchers in publishing data according to the FAIR principles. In addition, researchers can receive persistent identifiers such as DOIs or ePIC PIDs for their data. The differentiated management of roles and rights facilitates access to data collections ("dataverses") or data sets for single users as well as for user groups.

Recent developments for GRO.data in the reporting period were:

- Integration with the AcademicCloud authentication, so the Göttingen Dataverse can be used from all members of the network of the academic and research institutions of Lower Saxony
- regular monthly Dataverse tutorials in campus (as part of eResearch Lab)
- improving the Dataverse software (these became parts of the official Dataverse releases)
    - alternative method for ingesting affiliation information
    - error handling improvements

[31] https://dataverse.org

    - unifying documentation examples for the native API calls
    - improving the Docker-based installation process
- improving management of custom metadata blocks (ongoing)
- presentation of the Göttingen Dataverse use case at the first European Dataverse Workshop
- presenting Dataverse for the DARIAH research data management community
- presenting and discussing Dataverse and specifically metadata requirements with DARIAH researchers' community (ongoing, within the context of the SSHOC project)
- all usage metrics (number of data collections, datasets, files, downloads) are linearly increasing[32]

Evaluation

ID	Name	Metric	Cumulative value (01.06.2019)	Cumulative value (01.06.2020)
S-Dat-01	Dataverses stored	Number of dataverses added per year	13	30
S-Dat-02	Datasets stored	Number of datasets added per year	n/a	97
S-Dat-03	Datasets published	Number of datasets published per year	22	54
S-Dat-04	Files stored	Number of files added per year	222	828
S-Dat-05	Files downloaded	Number of files downloaded per year	657	1570
S-Dat-06	Users registered	Number of new users registered per year	n/a	149
S-Dat-07	Datasets per user	Median of the number of datasets stored per user	n/a	n/a
S-Dat-08	Dataverses categories	Distribution of dataverses over categories	n/a	Research projects: 40% Researchers: 30% Research groups: 10%
S-Dat-09	Datasets subjects	Distribution of datasets over most common subjects	n/a	Medicine/Life Sciences: 32% Comp./Inform. Sciences: 23% Agricultural Sciences: 17% Arts&Humanities: 10% Earth/Envir. Sciences: 8%
S-Dat-10	GRO.data use support	Amount of time spent per user on supporting researchers	n/a	n/a
S-Dat-11	GRO.data technical admin	Amount of time spent on maintaining GRO.data service	n/a	n/a

Table 5: KPIs related to GRO.data service

GRO.identifiers

Status: Production
Launch date: (services have been launched separately in the past)
Service manager: C. Leone/R. Barthauer (DOI Service); S. Bingert (ePIC PID Service)
Software: Datacite[33] (DOI Service) and ePIC PID Service[34]

The eRA offers two different services for persistent identifiers: the DOI Service and the ePIC PID Service. While the former mainly aims at persistent and long-term identification of

[32] https://data.goettingen-research-online.de/metrics/
[33] https://datacite.org
[34] https://www.pidconsortium.eu

published elements (whether this are papers or data objects), the latter is mainly used to integrate its API into added value services (like repositories or archives) to persistently identify large numbers of data objects.

Both services are based on the handle.net system[35]. Parts of the core global infrastructure of the ePIC PID Service are operating in Göttingen.

DOI Service

The provision of DOIs for the Humanities to German research institutions via the DataCite membership of the SUB Göttingen has continued and grown throughout the past year. With several clients having changed from GESIS to the SUB Göttingen as provider, some of them with already a large number of registered DOIs, we now have 43 clients ("repositories" in the new DataCite terminology) and over 38,000 findable DOIs registered as of June 2020, with additional numbers of around 80 in draft and 264 in registered state.
There is an ongoing discussion within the DataCite community on the new membership model that DataCite has established, Contrary to the prior idea, DataCite no longer supports the concept of libraries operation as hubs for DOI registration for individual data centres in their country/domain. There is a new model of consortium membership, but DataCite is strongly moving towards the concept that every data centre that uses DataCite DOIs should be a DataCite member. SUB Göttingen still sees itself in the disciplinary position to offer free DOI registration for the humanities in Germany. The current fee structure still allows us to operate in this respect. We will nevertheless closely monitor the development of our DataCite fees and chose alternatives when necessary (see below)

ePIC PID Service

Also, the ePIC PID Service is increasingly used by the community. As a result of the change in membership structure within DataCite there is an ongoing discussion, whether EPIC should consider applying for a DOI license through the International DOI foundation (IDF). At the moment this would be considered as a direct conflict with DataCite, but a discussion has started to revaluate the relationship from DataCite and EPIC and discuss cooperation possibilities that allow both organisations to offer DOI registration and keep up the model of free identifier registration within the academia in Europa. A follow-up meeting in Göttingen between DataCite, EPIC and the IDF was planned for summer, but postponed due to the measures against Covid-19.

Evaluation

ID	Name	Metric	Cumulative value (01.06.2019)	Cumulative value (01.06.2020)
S-Idf-01	DOIs	Increase in DOIs registered through the DOI Service per year	11.000	38.041
S-Idf-02	DOI prefixes	Increase in DOI prefixes registered through the DOI Service per year	31	52
S-Idf-03	ePIC prefixes	Increase in prefixes registered through the ePIC PID Service per year	44	90
S-Idf-04	ePIC PIDs	Increase in PIDs registered through the ePIC PID Service per year	42.819.389	ca. 57.000.000

Table 6: KPIs related to GRO.identifiers service

[35] http://handle.net

GRO.instruments

Status: Production (not officially announced yet)
Launch date: To be decided
Service manager: Claudio Leone/Timo Gnadt
Software: OpenIRIS

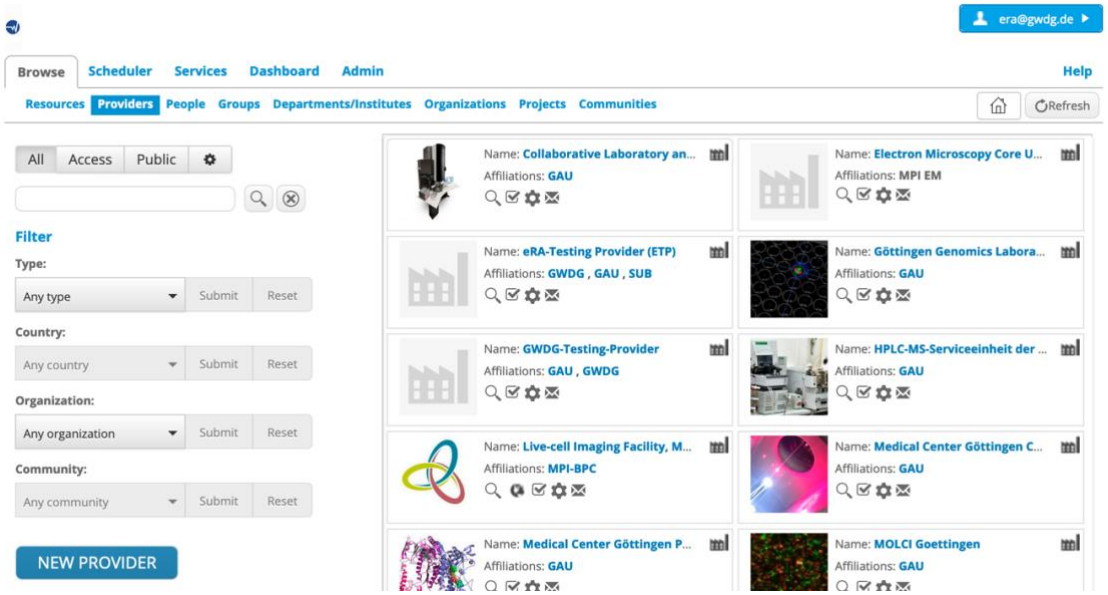

Figure 8:Screenshot from GRO.instruments

The adaptation of the Large Instruments Portal for the Göttingen Campus has been a strong focus in the past year. In close cooperation between the developers from openIRIS and the users at Göttingen Campus, namely MPI-EM, MPI-BPC and the Research Department, several feature requests have been discussed and implemented by openIRIS. Cooperation has also been established with other openIRIS users at the universities of Mainz and Helsinki, and further cooperation is in discussion with FU Berlin and TU Darmstadt.
While most functionalities requested by the MPIs are already in place and the system is in productive use there, the requirements from the Research Department regarding the usability and overall integration into the university's and the Göttingen Campus infrastructure are still in a state of final coordination. Current issues in discussion and negotiation with all clients involve data privacy regulations and support reliability.
We expect the service to be ready for public use and announcement within summer 2020.

Evaluation

ID	Name	Metric	Cumulative value (01.06.2019)	Cumulative value (01.06.2020)
S-Ins-01	Registered Facilities	Number of facilities registered per year	n/a	n/a
S-Ins-02	Registered Resources	Number of resources registered per year	n/a	n/a
S-Ins-03	Researchers registered	Number of new Göttingen Campus researchers registered	n/a	n/a
S-Ins-04	Bookable resources	Percentage of registered resources being available for	n/a	n/a
S-Ins-05	GRO.instruments accesses	Number of logins to GRO.instruments per year	n/a	n/a
S-Ins-06	GRO.instruments user support	Amount of time spent per user on supporting researchers	n/a	n/a
S-Ins-07	GRO.instruments technical admin	Amount of time spent on maintaining GRO.instruments	n/a	n/a

Table 7: KPIs related to GRO.instruments service

GRO.plan

Status: Testing phase
Launch date: target: September 2020
Service manager: Ubbo Veentjer
Software: RDMO[36]

Figure 9: Screenshot from GRO.plan

In the reporting period the eRA has extended the testing and adaptation of the Data Management Planning Tool for the Göttingen Campus. Several adaptations have been made to the GUI as well as the data structure to accommodate for easier usability by researchers, and to enable the provisioning of Göttingen Campus-specific information directly in the course of the plan generation process. Several of these requirements involve the active participation in the RDMO community to work on the development of code and standards. While the RDMO project is currently expecting to run out this fall, the community has already grown significantly and is very engaged in extending, improving and maintaining the service.
Currently we are involving more external users in testing the service and expect to have it available for use at the Göttingen Campus by late summer 2020.

Evaluation

ID	Name	Metric	Cumulative value (01.06.2019)	Cumulative value (01.06.2020)
S-Pla-01	Data Management	Number of data management plans created per year	n/a	n/a
S-Pla-02	GRO.plan users	Number of new users registered per year	n/a	n/a
S-Pla-03	Plans per Funder	Number of plans created per funder per year	n/a	n/a
S-Pla-04	Plans per discipline	Number of plans created per discipline per year	n/a	n/a
S-Pla-05	GRO.plan user support	Amount of time spent per plan on supporting/consulting	n/a	n/a

[36] https://rdmorganiser.github.io

S-Pla-06	GRO.plan content administration	Amount of time spent on amending GRO.plan service	n/a	n/a
S-Pla-07	GRO.plan technical admin	Amount of time spent on maintaining GRO.plan service	n/a	n/a

Table 8: KPIs related to GRO.plan service

GRO.publications

Status: Production
Service manager: Daniel Beucke
Software: DSpace CRIS[37] (heavily modified version)
URL: https://publications.goettingen-research-online.de

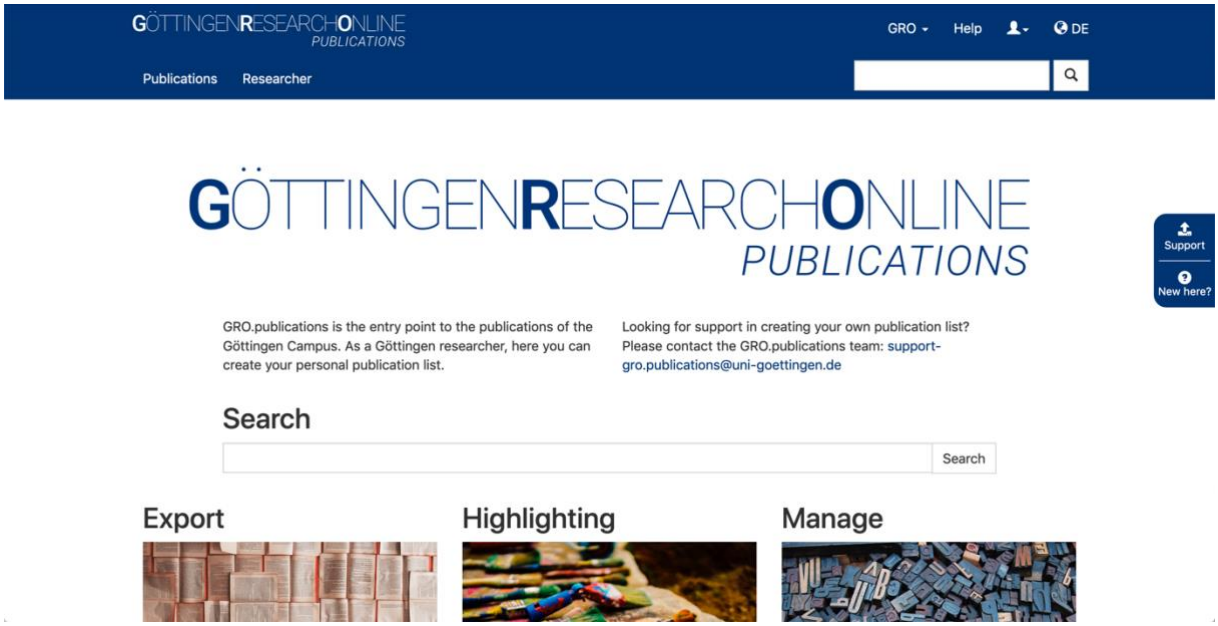

Figure 10: Screenshot from GRO.publications

The publication data management GRO.publications allows researchers at the Göttingen Campus to account for and curate their publications at a central location. The service regularly imports publication data from large scientific resource systems which are verified by Göttingen researchers as belonging to them. With assistance from the service, researchers can then create individualized publication lists in discipline-specific citation styles and embed them into external websites in such a way that they are dynamically updated. Additionally, researchers can synchronize their ORICD profile with GRO.publications. Further functions which are currently under development include:

- Offering publication lists for organisations, projects and working groups
- Exchange of data with the FACTScience system of the Göttingen University
- Provision of full texts via the GRO.publications interface through integration with SUB publication server GoeScholar[38]
- Direct interlinking with data publications through closer integration with the institutional research data repository GRO.data

[37] https://wiki.duraspace.org/display/DSPACECRIS/DSpace-CRIS+Home

[38] https://goedoc.uni-goettingen.de/?locale-attribute=en

GRO.publications is based on the repository software DSpace-CRIS[39], which is an extended module of DSpace. The technical release took place in August 2019.

Evaluation

ID	Name	Metric	Cumulative value (01.06.2019)	Cumulative value (01.06.2020)
S-Pub-01	Publications stored	Number of publications added per year	n/a	63732
S-Pub-02	Publications curated	Number of publications curated per year	n/a	n/a
S-Pub-03	Researchers registered	Number of new Göttingen Campus researchers registered	n/a	n/a
S-Pub-04	Researchers curated	Number of researchers with >3 curated publications per year	n/a	n/a

Table 9: KPIs related to GRO.publications service

[39] https://wiki.lyrasis.org/display/DSPACECRIS/DSpace-CRIS+Home

Outreach

Intensified Coordination with Göttingen Campus

The Göttingen eResearch Alliance serves the whole Göttingen Campus with all of its partners:

- University of Göttingen
- University Medical Center Göttingen
- Göttingen Academy of Sciences and Humanities
- German Aerospace Center
- German Primate Center
- MPI for Biophysical Chemistry
- MPI for Dynamics and Self-Organization
- MPI of Experimental Medicine
- MPI for Solar System Research
- MPI for the Study of Religious and Ethnic Diversity

This fact has in the past not been sufficiently communicated to other players on the campus. To improve this situation, we intensified our communication and coordination efforts with the team from Göttingen Campus and Public Relations of the University of Göttingen. This effort had the following major objectives:

- Getting feedback on the website before its relaunch.
- Discussing means to improve the linkage between the eRA website and those from campus partners.
- Creating information material for the eRA services and integrating it properly into the offers from other campus partners.
- Establishing means to communicate offers and results from the eRA through channels of the Göttingen Campus (like web site, Twitter, blog, event calendar.

The respective feedback concerning the website was already incorporated, further action plans regarding the other objectives have to be generated. In general, actions of mutual benefit have already been identified (like offering eRA service information and training to the young researchers on the campus through the Göttingen Campus media channels) and the implementation will be planned accordingly.

Communication concept

The importance of improving the eRA's communication has been recognized some time ago. With the end of 2020 the eRA started to develop a communication concept. The concept includes a SWOT analysis of the initial situation first. Then follows the setting of aims and the identification of target groups flanked by the definition of key messages. In the third part it focusses finally on the implementation.

The overall aim is to be more clearly in the communication and more target oriented. Among the superordinate aims are

- Establishing a clearer communication structure to the in- and outside
- Make clear that eRA has two profiles: one as provider and one as broker
- Communicate the self-confession clearly and implement the mission statement pro active

- Name areas of competency clearly and refer them to the research cycle and the research data life cycle
- Establish and strengthen confidence in eRA expertise
- Establish / strengthen eRA as reliable partner for research and teaching
- Strengthen awareness of eRA-existence in disciplinary contexts or initiatives

We identified the following target groups of the eRA:

- Customers: Researchers, Students, Technical staff, Externals (researchers and students from cooperating institutions and project partners)
- Decision makers: University Presidential board, Management of GWDG and SUB (and UMG), Directors of the Max-Planck-Institutes located in Göttingen
- Administrative level: University Research Department, University Research Data Consultant, Research Deans of the faculties

The unique selling points have more or less been developed at the beginning of the eRA and are considered as still true:

- Demand-driven development, adaptation and expansion of digital services for the site
- Support for scientists throughout the research cycle
- Structured inter-institutional exchange with multipliers in all disciplines
- Close cooperation between large, central institutions in the field of digital infrastructure at the site
- close ties to the Göttingen Campus and long-term anchoring
- Interdisciplinary team with national and international network activities
- Annual scientific evaluation by an international panel of experts

In order to address the different target groups with respect to promote these selling points, we have developed a number of key messages which are still under revision.

Established communication channels will remain and be extended. Inherent communication channels are currently:

- Webpages
    - eRA website
    - Partner institutions
        - GWDG
        - SUB
    - Cooperation partners
        - Göttingen University
        - Göttingen Campus
        - UMG
- E-Mail distribution lists
- Social Media
    - Twitter (worldwide)
    - Rocket.Chat (for the Campus)

Website

In the past, the eRA website (eresearch.uni-goettingen.de) had often received feedback that the structure was confusing and content was not easily findable or not helpful. As reported already in 2019, the eRA therefore hired an external web designer to assist with a complete redesign of the website. In July 2019, the new version of the eRA website finally went public. This has

resulted in highly increased traffic and user requests, and also received very positive feedback from many sides. The eRA is currently evaluating further feature requests to the web designer in order to start a second order for extending the website functionality based on the experiences from the past year. We expect that this will start by late 2020 and be finished by spring 2021. Below you can find some screenshots from the new website.

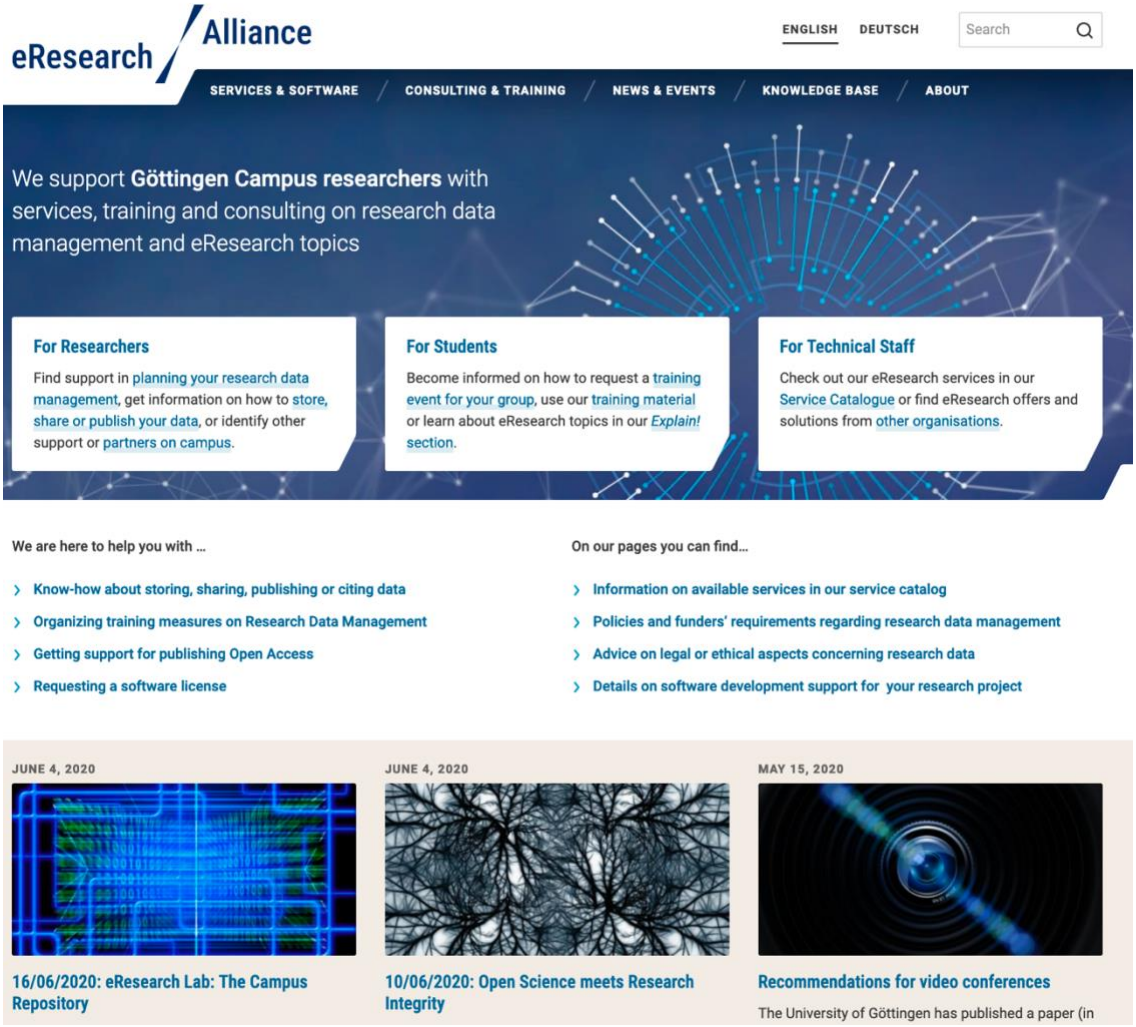

Figure 11: Screenshot of the eRA website start page

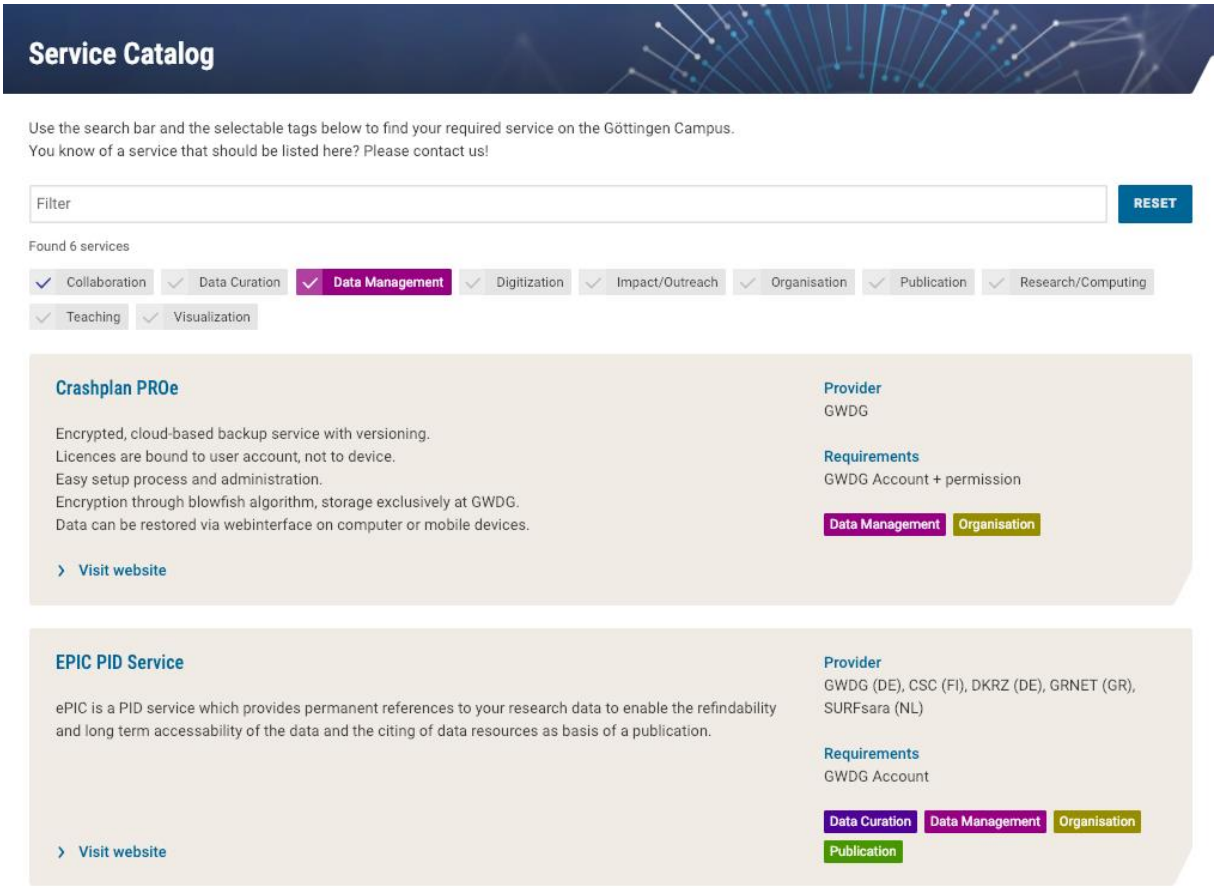

Figure 12: Screenshot of the eRA website service catalogue

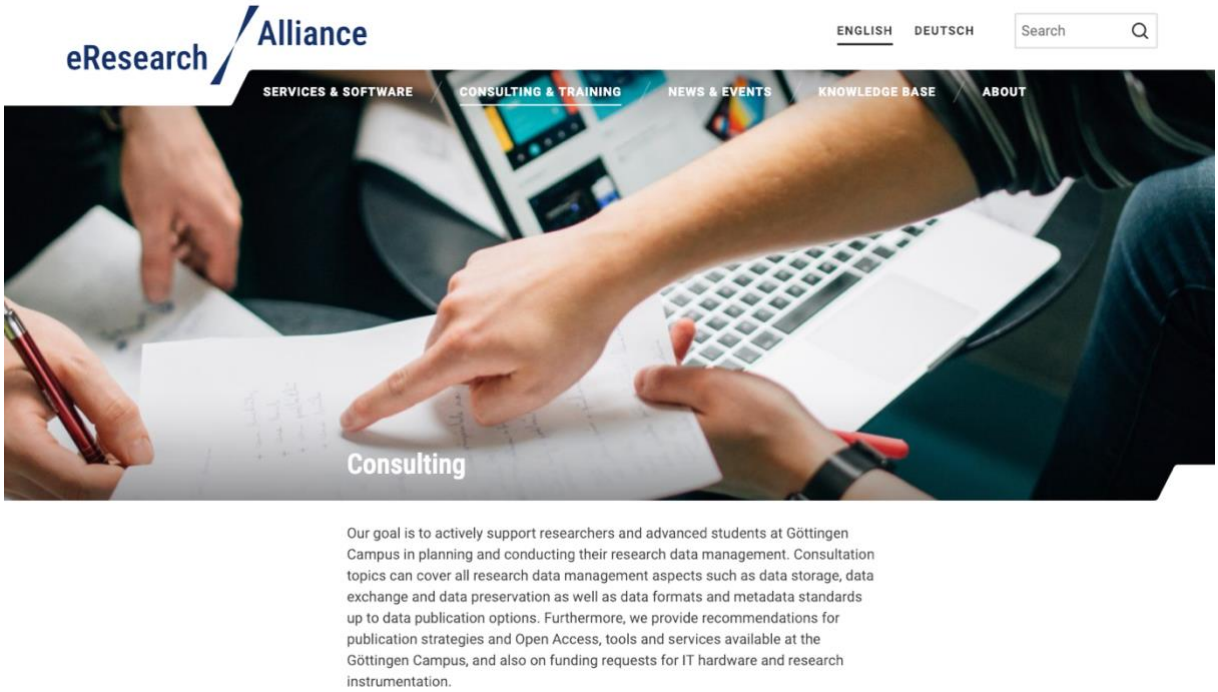

Figure 13: Screenshot of the eRA website page on consulting

Social Media (Twitter)

In 2020 May the eRA launched its Twitter channel[40], which is going to be used in addition to the website news and email distribution lists to announce eRA events and other interesting developments regarding eResearch topics.

Evaluation

ID	Name	Metric	2018/2019	2019/2020
O-01	Events	Number of events per year	n/a	n/a
O-02	Publications	Number of Publications per year	7	6
O-03	Website visits	Number of distinguishable website visits per year	n/a	n/a
O-04	Files downloaded	Number of file downloads per year	n/a	n/a
O-05	Website retention	Average duration of stay on website	n/a	n/a

Table 10: KPIs related to eRA Outreach activities

[40] https://twitter.com/GottingeneRA

3rd Party Funded Projects

In this section, we describe the results of those projects, which are funded 3rd parties like the German ministry for education and research (BMBF), the DFG, or the European Commission.

GRAcE

The project GRAcE finished successfully in August 2019, after a cost-neutral extension of 3 months. The results have been published in the GRO.data service[41].

Some results from the project are:

- It is difficult to clearly separate RDM activities from other tasks in the daily medical research routine, which makes the development of a cost model very complex and not realisable with currently used job profiles.
- A checklist of RDM tasks with relevant cost driving parameters was created, which can be used for RDM cost estimation.
- Researchers have a strong demand for concrete infrastructure measures as well as RDM consulting and support. Legal and technical questions are dominant issues here.
- A broad, effective and target group-oriented communication of service offers is required to enable an overview of the multifaceted portfolio.

OLA-HD

In September 2018, the eRA members SUB and GWDG initiated a DFG-project called "OLA-HD – An OCR-D Long-term archive for historical prints".

The goal of OLA-HD is the development of an integrated concept for the long-term archive and persistent identifier (PID) of OCR-Objects as well as a prototype implementation.

Through regular exchange with project partners, the basic requirements for the long-term archive and the persistent identification was established and recorded in the form of specifications for technical and economic-organizational implementation.

With the prototype, users can upload the OCR results in a compressed file format to the system, which then validates the delivered files, assigns a PID via a service hosted by the European Persistent Identifier Consortium (ePIC), and transfers the data to the Archive Manager. This Archive Manager stores the data to the archive (tape storage) and indexes the data for search purposes. Users can access all OCR versions and download each version as a compressed file. Each version has its own PID, while different versions of a work are linked together by PIDs. This allows the system to create a tree-structure of versions.

Apart from uploading data and downloading raw images, guest users can use the system in full functionality. For example, they can search the repository and get a preview of text and - if available - images in the file structure or navigate through the different versions. Users can register and can manage their data on a dashboard.

The last phase of OLA-HD ended in February 2020. For the currently planned next project phase, it is envisaged to add OLA-HD into the digitization workflow and provide a seamless

41 see: https://data.goettingen-research-online.de/dataverse/GRAcE

integration with the existing VD18-Portal[42], workflow management software like Kitodo/Goobi[43], as well as with the OCR-Workflow itself.

SSHOC

eRA is participating in SSHOC project's task 5.2, which aims to improve Dataverse with features required by the big Europeana[44] social science/Humanities clusters: CESSDA[45], CLARIN[46], and DARIAH[47]. These features include a multilingual user interface, preparing customized metadata blocks reflecting the needs of the researchers in the domain, simplifying installation, and data previews. The eRA activities in this project are focused on software development.

MINE

The eRA members SUB and GWDG initiated the Project MINE in October 2019. The goal of the project is to make (all) text resources accessible and available for further research. The MINE product is a complex system architecture that allows to read and convert metadata from the sources and provide a sophisticated search interface. The search will be enhanced by including a knowledge base which is feed by running TDM tools (e.g. entity recognition) on the full text. The first prototype will be available in September 2020.

As of June 2020, four different text corpora were included in the MINE system. The Metadata is stored in a central database and the simple Web-UI is implemented.

Evaluation

ID	Name	Metric	2018/2019	2019/2020
M-01	3rd party Funding	Amount of 3rd party funding raised per year	n/a	n/a

Table 11: KPIs related to other eRA activities

42 https://gso.gbv.de/DB=1.65/LNG=EN/

43 https://www.sub.uni-goettingen.de/en/digital-library/digital-tools/goobi-digital-library-modules/

44 https://www.europeana.eu/en

45 https://www.cessda.eu/

46 https://www.clarin.eu/

47 https://www.dariah.eu/

Team Retreat

The eRA team took a one-day retreat in September 2019 to recap the achievements since the two-day retreat in April 2019. Main topics of discussions were our identified aims:

- being pro-active
- creating a checklist for consulting
- being innovative
- creating a toolbox for training

With respect to the first aim, the eResearch Labs are established. More details can be found in the chapter Training/eResearch Lab. Besides this, parts of the team were and are still actively involved in the restructuring of the course program of the GWDG. Within the GWDG Academy, the training offers of the eRA as well as eResearch or research data management related courses offered by colleagues from GWDG or external partners are represented.

Plans for the Next Reporting Period

For the next reporting period from 2020 – 2021 we plan to focus on the following aspects.

Consultations

In concordance with the last 12 months, we expect consultation still being the major and most time-consuming task of eRA in the next reporting period. In particular, the ongoing process of contributing to or renewing NFDI proposals will play an important role here. In addition to improved recording and monitoring of the consultation processes, we plan to collect more examples of success stories to better market the consultation services on campus.

Training

As the Data Science Summer School will not take place, we will evaluate possibilities to offer parts of the planned classes as online courses. In any case, preparation for the summer school 2021 will start in the fall of 2020.
Due to the measures taken against Covid-19, many of our training courses have taken place as online events. The experience of holding these events will be beneficial in offering more general online training courses in the future.

Services

The overall aim regarding the development and promotion of eRA services is the implementation and promotion of Göttingen Research Online as a single access point for a number of services related to research data management and eResearch. While the two services GRO.publications and GRO.data are already fully operational and will be promoted by a university-issued press release in July 2020, the eRA plans to bring more services to production level within 2020. In particular, this concerns the Large Instruments Portal GRO.instruments and the data management planning tool GRO.data. We plan to have both ready, branded and integrated with Göttingen Research Online by the end of 2020.
Regarding the interoperability of the services, a main development goal for the coming months is the integration of GRO.data and GRO.publications regarding support for cross-linking and accessing research data from publications and vice versa.
For the functionality of GRO.plan, we are confident that the required adaptations to the underlying software RDMO can be implemented until late fall 2020.
While the service functionalities of the persistent identifier systems offered by SUB and GWDG are already used productively, the task regarding the service GRO.identifiers remains to develop a concept of aiding researchers with selecting and receiving suitable persistent identifiers for their context, and to harmonize the handling of PIDs across the different repositories at SUB. The concept for this task will also be available by late fall 2020, while the implementation will likely take longer and last well into 2021, as also the business models in use by SUB for the different DOI providers (DataCite and CrossRef) and the cooperation between DataCite and the ePIC consortium are still at the beginning of discussion.

Networking/Strategy

The export of the eRA concept to the UCSD has been a great success. We hope to see first results in the next 12 months and see good networking opportunities growing through newly established working groups in the RDA and CODATA context.
On the national level we will be again very much involved in the second phase of the NFDI process, in consulting proposals and interest groups that have connections to Göttingen campus.

Outreach/Communication

With our new website we have a renewed platform to market eRA on campus, and through our cooperation with the project "Bausteine PLUS" (see section on Networking), we can now make use of a large and effective e-mail distribution network for the campus and beyond. This is amended by the new eRA Twitter account, which we will build up with followers from SUB and GWDG, and regularly feed with news on eResearch events.

In the last 12 months we have started to actively collect more agile feedback from the departments on campus about their RDM needs and their existing RDM status quo. For the summer of 2020 it was originally planned to hold a service roadshow in all relevant departments on campus. This was postponed due to the measures against Covid-19 and will be taken up again, as soon as the university will be in regular mode again.

As we furthermore will finish our communication strategy within the next 6 months, we expect the immediate consequences of its implementation to significantly advance eRA's visibility on campus.

Appendix A – Members of the eRA Steering Group

- Jan Brase - Head Research and Development, SUB
- Mustafa Dogan – Deputy Head Digital Library, SUB
- Wolfram Horstmann – Director, SUB Göttingen
- Frank Klaproth – Head of Digital Library, SUB
- Harald Kusch – Member of Medical Informatics Department, UMG
- Jens Nieschulze – Research data officer at University of Göttingen
- Birgit Schmidt – Head of "Wissen als Gemeingut", SUB
- Arnulf Timm – Co-Head of „Informations- und Literaturversorgung Zentrale Erwerbung und Erschließung", SUB
- Ulrich Schwardmann – Deputy Head eScience Group, GWDG
- Philipp Wieder – Head of eScience Group, GWDG, and Deputy Head, GWDG
- Ramin Yahyapour – Managing Director, GWDG

Appendix B – List of extended KPIs

ID	Name	Area	Service	Metric	Target value	Source of data	Means of acquisition	*Type*	Objective
C-01	Consultations	Consulting		Number of consultations per year	> 40 consultations per year (defined based on the mean value for the previous years)	gitlab tickets; List of consultations	Manual	*Target*	Ensure sufficient consultation support and available team resources
C-02	Consultations per Discipline	Consulting		Amount of consultations per discipline per year	Distribution should be in line with the expertise of the eRA team members	gitlab tickets; List of consultations	Manual	*Monitoring*	Understand required and available expertise w.r.t requirements of different scientific disciplines
C-03	Consultations per Funder	Consulting		Amount of consultations per funder per year	Distribution should be in line with the expertise of the eRA team members	gitlab tickets; List of consultations	Manual	*Monitoring*	Understand required and available expertise w.r.t. requirements of particular funders
C-04	Time Consumed per Consultation	Consulting		Amount of time required per consultation	tbd	gitlab tickets; List of consultations	Manual	*Monitoring -> Target*	Understand factors and resources required for consultation aspects, and plan adaptations
C-05	Successful proposal consultations	Consulting		Percentage of consultations resulting in funding approval	>50%	gitlab tickets; List of consultations funders feedback to researchers / Abt.F	Manual	*Target*	Ensure sufficient team expertise with respect to requirements of particular funders
C-06	Successful other consultations	Consulting		Number of positive feedbacks from researchers	none	Consultation feedback	Manual	*Monitoring*	Understand if eRA meets researchers' expectations and requirements
T-01	Trainings	Training		Number of trainings per year	tbd; All training requests should be fulfilled	gitlab tickets; List of trainings	Manual	*Target*	Understand training demand and ensure sufficient team resources
T-02	Open training events	Training		Number of open training events per year	>3	gitlab tickets; List of trainings	Manual	*Target*	Increase visibility on Campus
T-03	Discipline-specific training materials	Training		Percentage of all disciplines covered by specific training	100%	gitlab tickets; List of trainings	Manual	*Target*	Understand discipline-specific needs for training material

				material available on website					
T-04	Info events	Training		Number of Info events per year	>5	gitlab tickets; List of trainings	Manual	*Target*	Increase visibility on Campus
T-05	Webinars	Training		Number of online training courses and webinars offered per year	tbd	gitlab tickets; List of trainings	Manual	*Monitoring -> Target*	Increase visibility on Campus and accessibility of training offers
T-06	Training reception	Training		Overall and specific scores of training evaluation questions	tbd	Training evaluation sheets	Manual/semi-automated evaluation of training sheets	*Monitoring -> Target*	Understand training needs and quality of current training offers
O-01	Events	Outreach		Number of events per year	> 12 per year (at least one per month on average)	Calendars, emails, planning documents	Manual	*Target*	Increase visibility outside of Campus
O-02	Publications	Outreach		Number of Publications per year	> 3 (articles, guides, checklist)	Internal list of publications	Manual through team record	*Target*	Increase visibility outside of Campus
O-03	Website visits	Outreach		Number of distinguishable website visits per year	tbd	Website traffic metrics	Automatic	*Monitoring -> Target*	Understand visibility of Website
O-04	Files downloaded	Outreach		Number of file downloads per year	tbd	Website traffic metrics	Automatic	*Monitoring -> Target*	Understand usefulness of website content
O-05	Website retention	Outreach		Average duration of stay on website	tbd	Website traffic metrics	Automatic	*Monitoring -> Target*	Understand quality of user guidance and website structure
N-01	Stakeholder Coverage	Networking		Percentage of stakeholders covered (Göttingen Campus partners, faculties of the University of Göttingen, selected individuals)	100%	gitlab tickets; List of consultations, trainings, and service developments	Manual	*Monitoring, later split by discipline or stakeholder type*	Understand whether relevant stakeholders have been contacted
N-02	Conference/Workshop participation	Networking		Number of participations per year	none	List of participations	Manual through team record	*Monitoring*	Understand networking efforts
M-01	3rd party Funding	Misc.		Amount of 3rd party funding raised per year	Amount large enough to fulfil existing contracts	Grant agreements	Manual through the administrations of participating partners	*Monitoring -> Target*	Ensure funding coverage of staff and support mid-term planning of resources

S-Dat-01	Dataverses stored	Services	GRO.data	Number of dataverses added per year	tbd	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Dat-02	Datasets stored	Services	GRO.data	Number of datasets added per year	tbd	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Dat-03	Datasets published	Services	GRO.data	Number of datasets published per year	tbd	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Dat-04	Files stored	Services	GRO.data	Number of files added per year	tbd	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Dat-05	Files downloaded	Services	GRO.data	Number of files downloaded per year	tbd	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Dat-06	Users registered	Services	GRO.data	Number of new users registered per year	tbd	Service logs	Automatic	*Monitoring -> Target*	Understand the visibility and acceptance of the service and plan actions to improve it
S-Dat-07	Datasets per user	Services	GRO.data	Median of the number of datasets stored per user	none	Dataverse metrics	Automatic	*Monitoring -> Target*	Understand the visibility and acceptance of the service and plan actions to improve it
S-Dat-08	Dataverses categories	Services	GRO.data	Distribution of dataverses over categories	none	Dataverse metrics	Automatic	*Monitoring*	Understand the suitability of existing categories for searching
S-Dat-09	Datasets subjects	Services	GRO.data	Distribution of datasets over most common subjects	none	Dataverse metrics	Automatic	*Monitoring*	Understand the coverage and precision of predefined subjects
S-Dat-10	GRO.data user support	Services	GRO.data	Amount of time spent per user on supporting researchers	none	gitlab support tickets	Manual	*Monitoring*	Understand the amount of required resources for user support
S-Dat-11	GRO.data technical admin	Services	GRO.data	Amount of time spent on maintaining GRO.data service	none	staff estimation	Manual	*Monitoring*	Understand the amount of required resources for technical administration
S-Idf-01	DOIs	Services	GRO.identifiers	Increase in DOIs registered through the DOI Service per year	tbd	Fabrica metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Idf-02	DOI prefixes	Services	GRO.identifiers	Increase in DOI prefixes registered through the DOI Service per year	tbd	Fabrica metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion

S-Idf-03	ePIC prefixes	Services	GRO.identifiers	Increase in prefixes registered through the ePIC PID Service per year	tbd	Service logs	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Idf-04	ePIC PIDs	Services	GRO.identifiers	Increase in PIDs registered through the ePIC PID Service per year	tbd	Service logs	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Ins-01	Registered Facilities	Services	GRO.instruments	Number of facilities registered per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Ins-02	Registered Resources	Services	GRO.instruments	Number of resources registered per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Ins-03	Researchers registered	Services	GRO.instruments	Number of new Göttingen Campus researchers registered with the service per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the visibility and acceptance of the service and plan actions to improve it
S-Ins-04	Bookable resources	Services	GRO.instruments	Percentage of registered resources being available for booking per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the acceptance of and trust in the service and plan actions to improve it
S-Ins-05	GRO.instruments accesses	Services	GRO.instruments	Number of logins to GRO.instruments per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Ins-06	GRO.instruments user support	Services	GRO.instruments	Amount of time spent per user on supporting researchers	none	gitlab support tickets	Manual	*Monitoring*	Understand the amount of required resources for user support
S-Ins-07	GRO.instruments technical admin	Services	GRO.instruments	Amount of time spent on maintaining GRO.instruments service per year	none	staff estimation	Manual	*Monitoring*	Understand the amount of required resources for technical administration
S-Pla-01	Data Management Plans	Services	GRO.plan	Number of data management plans created per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the growth of data management plans and (re-)design the service offer accordingly
S-Pla-02	GRO.plan users	Services	GRO.plan	Number of new users registered per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion

S-Pla-03	Plans per Funder	Services	GRO.plan	Number of plans created per funder per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand and adapt suitability of service content with respect to requirements of funders
S-Pla-04	Plans per discipline	Services	GRO.plan	Number of plans created per discipline per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand and adapt suitability of service content according to requirements of scientific disciplines
S-Pla-05	GRO.plan user support	Services	GRO.plan	Amount of time spent per plan on supporting/consulting researchers	none	gitlab support tickets	Manual	*Monitoring*	Understand the amount of required resources for user support
S-Pla-06	GRO.plan content administration	Services	GRO.plan	Amount of time spent on amending GRO.plan service content per year	none	staff estimation / gitlab tickets	Manual	*Monitoring*	Understand the amount of required resources for content administration
S-Pla-07	GRO.plan technical admin	Services	GRO.plan	Amount of time spent on maintaining GRO.plan service per year	none	staff estimation	Manual	*Monitoring*	Understand the amount of required resources for technical administration
S-Pub-01	Publications stored	Services	GRO.publications	Number of publications added per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Pub-02	Publications curated	Services	GRO.publications	Number of publications curated per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Pub-03	Researchers registered	Services	GRO.publications	Number of new Göttingen Campus researchers registered with the service per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and adapt the service offer and promotion
S-Pub-04	Researchers curated	Services	GRO.publications	Number of researchers with >3 curated publications per year	tbd	Service logs/metrics	Automatic	*Monitoring -> Target*	Understand the usage of the service and ensure sufficient resources for curation

Appendix C – Consulting of Large-Scale DFG Projects

Project Type	Name/number	Discipline(s)	Consultation topics
TRR	274	Neurobiology	Provision of data platform including support
CRC	755	Physics, Medicine	INF: Data management solutions
CRC	889	Neurobiology	Data and software management
CRC	937	Physics	Data management
CRC	990	Biology, Ecology, Social sciences	INF: Operation and support, repository, data management
CRC	1002	Medicine	INF: Data platform, electronic lab notebook, antibody registration
CRC	1136	Theology, Philology, Archaeology	Data management, Publication management
CRC	1190	Medicine	INF: Data platform, electronic lab notebook, antibody registration
CRC	1286	Neurosciences	INF: Requirements engineering, establishment of data exchange platform
CRC	1456	Mathematics	Data management
CRC	proposal (Kneib)	Statistics	Data management
RTG	proposal (Zeiljstra)	Linguistics	Data management
RTG	1666	Social sciences	Data management
RTG	2455	Chemistry	Data management, consultation for data publication platform
RTG	initiative Prof. Blomer	Mathematics	Data management
RU	2064	Philology, History	Data management, data platform, High Performance Computing
RU	2083	Computer Science, Mathematics, Architecture	Data management
RU	2414	Quantum physics	Data and publication management (speaker now in Frankfurt)
RU	2432	Social sciences, Ecology	Data management, data exchange platform
RU	Initiative Prof. Vollmer	Economics	Data management, data policy
RU	Initiative Prof. Wiesemann	Medical ethics, Philosophy	Data management
CRU	5002	Medicine, Biology	Data management

Appendix D – Evaluation of Data Science Summer School 2019 (DS3GOE 2019)

Number of Questionnaires: 31

Legend:

1 fully disagree
2 disagree
3 neither nor
4 agree
5 fully agree

Topics and Structure	
aims	The aims of the summer school were transparent
topics	The topics were relevant for my work
range	The range of topics was adequate
Amount of information	The amount of information was adequate
complexity	The complexity of information was adequate
length	The length of the Summer School was adequate
quality and quantity	The quality and quantity of the course materials was adequate
Amount of exercises and homework	The amount of exercises and homework was adequate

Competencies / The Summer School helped me to ...	
basic facts and concepts	present basic facts and concepts in the subject area of the school
typical questions or problems	be able to work on typical questions or problems of the subject are of the school
research / work	critically discuss my research / work
methodical competencies	improve my methodical skills
ability	improve my ability to work independently
contact	get in contact with colleagues working on similiar topics

Organization	
rooms and equipment	The rooms and technical equipment were suitable
Board	Board and lodging were suitable
quality	The quality of the organization was suitable
amount	The amount of organizational information was sufficient
cultural activities	The cultural activities were interesting
networking	There was enough time for networking

Figure 14: Evaluation questions for DS3GOE 2019

Figure 15: Results from Evaluation of DS3GOE 2019

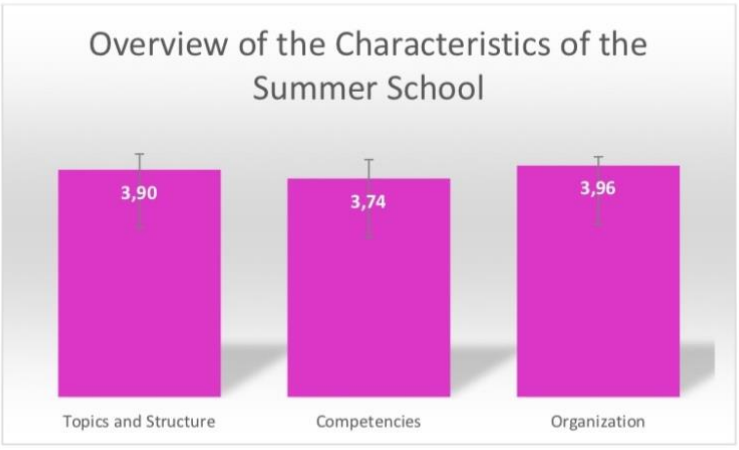

Figure 16: Evaluation of overall characteristics of DS3GOE 2019

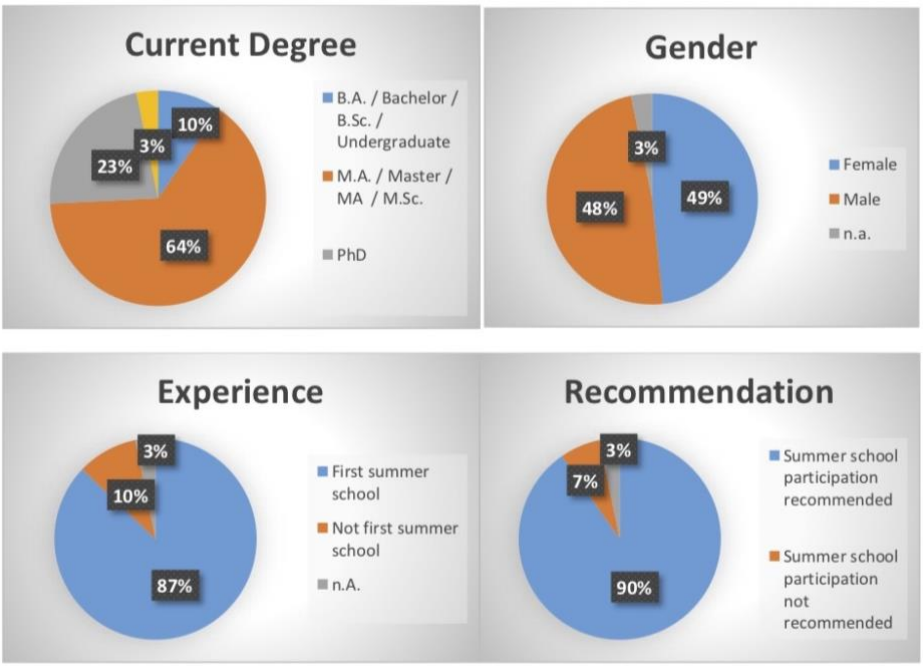

Figure 17: General Information on DS3GOE 2019

Appendix E – MoU between UCSD and SUB Göttingen

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE UNIVERSITY OF GÖTTINGEN, GERMANY AND
UNIVERSITY OF CALIFORNIA SAN DIEGO, U.S.A.

This non-binding Memorandum of Understanding (MOU) is entered into by and between The Regents of the University of California, on behalf of the University of California San Diego Library (UC San Diego), and the Göttingen State and University Library (SUB Göttingen). UC San Diego and Göttingen agree that cooperation to develop a library exchange program would be mutually beneficial.

1. PREAMBLE

This MOU sets forth the parties' aspirations to develop a library exchange program.

The main contact persons will be University Librarian Dr. Erik Mitchell for UC San Diego and University Librarian/Director Dr. Wolfram Horstmann for Göttingen.

2. MOBILITY PROGRAM

The two university libraries propose to establish the following during the course of this MOU:

2.1 Staff Mobility between UC San Diego and SUB Göttingen

UC San Diego and Göttingen to host staff, or teams of staff, from each other's institutions for periods of up to four (4) weeks for purposes of pursuing collaborations in the areas of:

- Research data services;
- Information technology;
- Digital humanities;
- Metadata provision; and/or,
- Digitization / reformatting.

The parties anticipate the mobility program will operate as follows:

2.1.1 Costs such as airfare, living expenses, and health insurance will be paid by the home institution for each of their staff, as appropriate.

2.1.2 The parties will assist each other in arranging housing, local transportation, and other logistics for staff participants.

2.1.3 Candidates will be reviewed and agreed upon by the parties, with the understanding that selected staff shall possess sound English skills in reading, writing, speaking, and listening in order to maximize the benefits of participation.

2.1.4 Appropriate staff will serve as onsite supervisors at both UC San Diego and SUB Göttingen.

2.1.5 Participants will have "visiting staff" status at the host institution.

2.2 Access to Library Resources

2.2.1 UC San Diego's visiting staff may receive access to SUB Göttingen library resources, including printed books, journals, and e-resources while visiting SUB Göttingen.

2.2.2 SUB Göttingen's visiting staff may receive access to UC San Diego library resources, including printed books, journals, and e-resources while visiting UC San Diego.

2.2.3 Both parties propose to meet each other's requests for access to library materials in compliance with applicable copyright laws, database license agreements, and other requirements.

3. SPECIFIC AGREEMENTS

The parties may enter into specific written agreements hereunder to clarify and define the nature, extent, and terms of operation for the proposed collaborations. Prior to entering into any such agreements, these agreements will require the approval of appropriate officers from each institution. For agreed-upon activities, both institutions will make available their facilities and staffs as further defined in such agreements.

4. INTELLECTUAL PROPERTY

The parties agree that University of California intellectual property and patent policies apply to research and development activities conducted at UC San Diego facilities under this MOU.

5. COMMENCEMENT, RENEWAL, AND TERMINATION

This MOU will be in effect for five (5) years, commencing on the later date of signing indicated by the parties below. Either institution may withdraw from this MOU, provided written notification of the withdrawal is given to the other institution. This MOU may be reviewed and renewed upon mutual written consent of the two institutions.

6. NON-BINDING NATURE OF THIS MOU

This MOU is a non-binding expression of the current intentions of the parties. This MOU may not be enforced in any legal proceeding. Neither party will incur nor be bound to any legal obligations or expense hereunder to the other party. Other issues not mentioned in this MOU will be discussed as they occur.

This MOU is made in English and German. It is the intention of both parties that the English and German versions are identical in substance, spirit, and interpretation.

The following individuals have signed the present Memorandum of Understanding on behalf of their respective institutions. PDF copies of this MOU sent by email, and any signatures thereon, shall be considered for all purposes as originals.

Göttingen State and University Library	University of California San Diego Library
_____	_____
Dr. Wolfram Horstmann	Dr. Erik Mitchell
University Librarian/Director	Audrey Geisel University Librarian
Date:_____	Date:_____

Appendix F – Publications

Articles

Kálmán, Tibor; Durco, Matej; Fischer, Frank; Larrousse, Nicolas; Leone, Claudio; Mörth, Karlheinz; Thiel, Carsten: A landscape of Data – working with digital resources within and beyond DARIAH. In: Int J Digit Humanities (2019) 1: 113. https://doi.org/10.1007/s42803-019-00008-6.

Király, Péter: Measuring metadata quality. PhD dissertation. DOI 10.13140/RG.2.2.33177.77920 (ResearchGate URL: http://doi.org/10.13140/RG.2.2.33177.77920), Göttingen eDiss repository URL: http://hdl.handle.net/21.11130/00-1735-0000-0003-C17C-8, Academia.edu URL: https://www.academia.edu/40176196/Measuring_Metadata_Quality

Király, Péter: Validating 126 million MARC records. In: DATeCH2019 Proceedings of the 3rd International Conference on Digital Access to Textual Cultural Heritage Brussels, Belgium — May 08-10, 2019. Published by ACM, 2019. ISBN: 978-1-4503-7194-0. pp. 161-168. DOI 10.1145/3322905.3322929, URL: https://doi.org/10.1145/3322905.3322929

Király, Péter; Büchler, Marco: A teljesség minőségjelzőként való mérése az Europeanában. In: Digitális Bölcsészet 2, 2019. pp. 57-76. DOI 10.31400/dh-hun.2019.2.388, URL: https://doi.org/10.31400/dh-hun.2019.2.388 〈Hungarian translation of "Measuring completeness as metadata quality metric in Europeana"〉

Király, Péter: Empirical evaluation of library catalogues. In EuropeanaTech Newsletter, No 15. SWIB. URL: https://pro.europeana.eu/page/issue-15-swib-2019#empirical-evaluation-of-library-catalogues

Reports

Bingert, Sven; Engelhardt, Claudia; Kraus, Inga; Kusch, Harald; Rörtgen, Steffen; Savin, Valeria; Wache, Stefanie, 2019, "Identifikation von Kostenfaktoren und Schätzung des Ressourcenbedarfs für das Forschungsdatenmanagement am Beispiel der Universitätsmedizin Göttingen", URL: https://doi.org/10.25625/BACXYQ, Göttingen Research Online / Data, V1

Engelhardt, Claudia; Bingert, Sven; Kirsch, Mona; Kusch, Harald; Rörtgen, Steffen, 2019, "Nachnutzung projektspezifischer Infrastrukturkomponenten als Teil der strategischen Weiterentwicklung der Campus-Infrastruktur Göttingen", https://doi.org/10.25625/JEC3YL, Göttingen Research Online / Data, V1

Bingert, Sven; Engelhardt, Claudia; Kusch, Harald, 2019, "Handlungsempfehlungen zu Forschungsdatenmanagement und -infrastruktur an Hochschulstandorten", https://doi.org/10.25625/PAYCKB, Göttingen Research Online / Data, V1

Posters

Király, Péter: Measuring Metadata Quality. RDA 14th Plenary Meeting, Helsinki, Oct 21-25 2019. https://www.rd-alliance.org/sites/default/files/attachment/peterkiraly-measuring-metadata-quality-rda14-poster.pdf

Presentations

Wieder, Philipp: Practical Research Data Management. Workshop at DPZ, Göttingen, 2019, May 15.

Király, Péter: Empirical evaluation of library catalogues. Semantic Web in Libraries conference, Hamburg, Nov 27 2019. Slides: http://bit.ly/qa-swib2019, video: https://www.youtube.com/watch?v=qfPAc5QhSFM

Király, Péter: Dataverse in Göttingen. European Dataverse Workshop, Tromsø, Jan 23 2020. https://septentrio.uit.no/index.php/SCS/article/view/5335/5081

Király, Péter: Dataverse. DARIAH Research Data Management Working Group [online], Mar 23 2020

Appendix G – Acronyms and Abbreviations

AG	Arbeitsgruppe (Working group)
API	Application Programming Interface
BMBF	Bundesministerium für Bildung und Forschung (Federal Ministry of Education and Research)
CDSTAR	Common Data Storage Architecture
CESSDA	Consortium of European Social Science Data Archives
CIDAS	Campus Institute Data Science
CLARIAH-DE	Joint Services of CLARIN-D and DARIAH-DE
CLARIN	Common Language Resources and Technology Infrastructure
CODATA	Committee on Data of the International Council for Science
CRC	DFG Collaborative Research Center
CRU	DFG Clinical Research Unit, equivalent to KFOR - Klinische Forschungsgruppe
DARIAH	Digital Research Infrastructure for the Arts and Humanities
DFG	Deutsche Forschungsgemeinschaft (German Science Foundation)
DOI	Digital Object Identifier
EOSC	European Open Science Cloud
ePIC	Persistent Identifiers for *e*Research
eRA	Göttingen eResearch Alliance
ERC	European Research Council
EUDAT	European Data Infrastructure
FOR	Forschungsgruppe, equivalent to RU - research unit
GeTS	Göttingen eResearch Toolbox Series
GFBio	German Federation for Biological Data
GRAcE	Göttingen Research Data Exploratory
GRO	Göttingen Research Online
GWDG	Gesellschaft für wissenschaftliche Datenverarbeitung mbH Göttingen
HeKKSaGOn	Foundation of a German-Japanese University Consortium
IDF	International DOI foundation
INF	Subproject for Infrastructure within joint research projects
ISO	International Organization for Standardization (https://www.iso.org/home.html)
KPI	Key Performance Indicator
NFDI	Nationale Forschungsdateninfrastruktur (National research data infrastructure)
NOAD	National Open Access Desk (OpenAIRE)
PI	Principle Investigator
PID	Persistent Identifier
RDA	Research Data Alliance
RDD	Research and Development Department at SUB
RDM	Research data management
RDMO	Research Data Management Organizer
RTG	DFG Research training group
RU	DFG Research unit, equivalent to FOR - Forschungsgruppe
SUB	Niedersächsische Staats- und Universitätsbibliothek (Göttingen State and University Library)
TDM	Tool data management
UMG	University Medical Center Göttingen
UCSD	University of California San Diego