



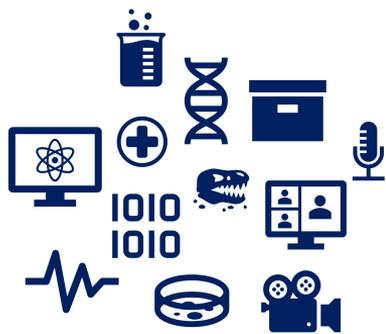
Dutch National Thematic Digital Competence Centres

EOSC National Tripartite Event Netherlands

22 May 2024, Utrecht

Nils Arlinghaus (TDCC-SSH), Celia van Gelder (TDCC-LSH), Joanne Yeomans (TDCC-NES)

Context DCCs: Research Data and Software - Expectation



Many types of raw data



Researchers



Traditionally,
mostly written outputs



Many types of processed data

Goal: Research data & software should be...

Findable

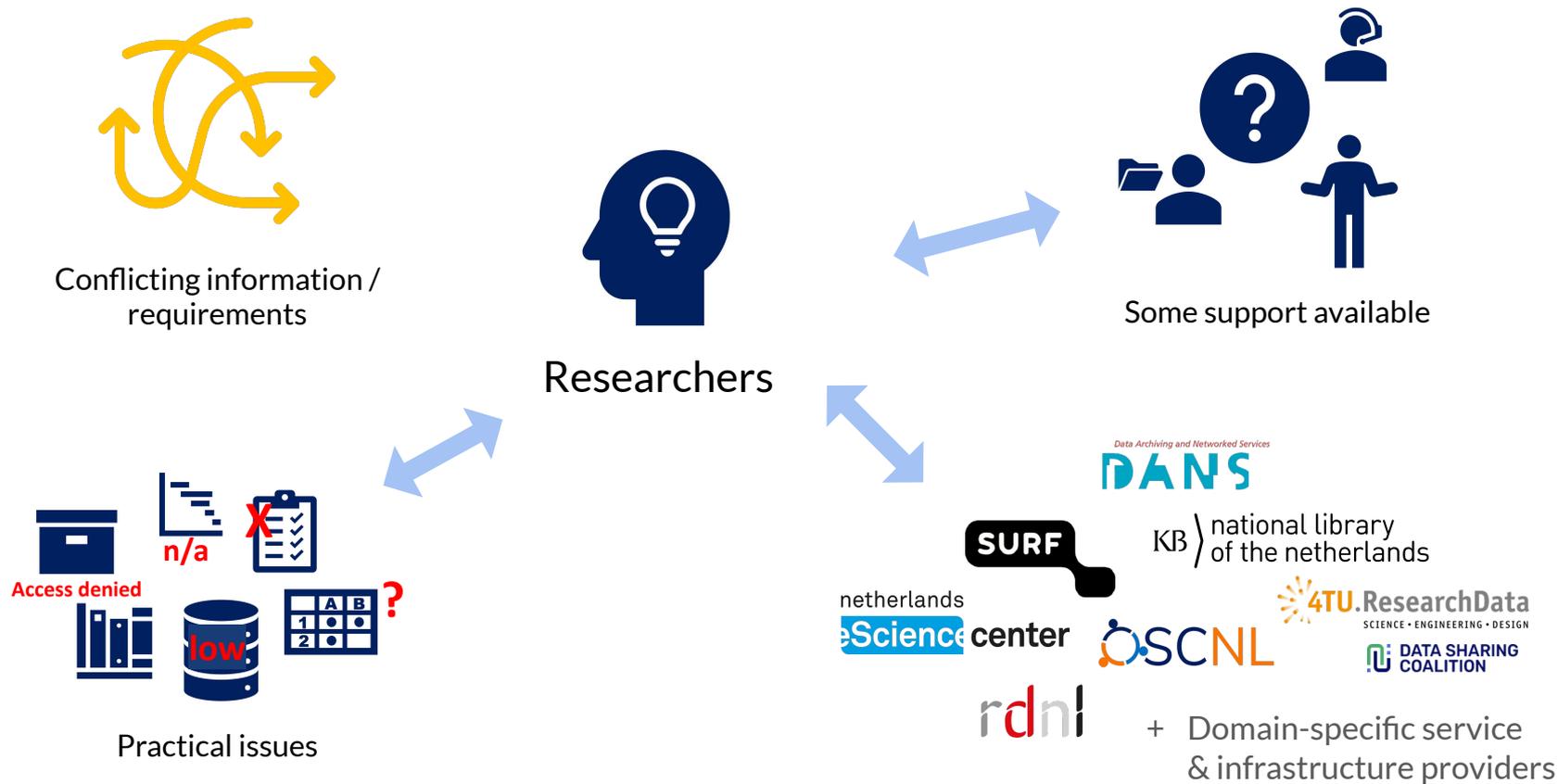
Accessible

Interoperable

Reusable

= the [F.A.I.R. principles](#)

Context DCCs: The situation in practice



Funding for digital infrastructure via Ministry of Education, Culture & Science (OCW)

Planning

Permanent Committee for Large-Scale Research Infrastructure (PC-GWI)

Implementation

NWO Implementation Plan for Investments in Digital Research Infrastructure (2019)

- National computational facilities: SURF
- eScience Center
- **Local DCCs**
- **Thematic DCCs**



Dutch Digital Competence Centres



- Funding to introduce or strengthen data and software support at Dutch research institutions (2019 & 2023)
→ 22/23 “**Local Digital Competence Centres**”.
- 10 year project funding for domain-specific challenges (2022)
→ 3 “**Thematic Digital Competence Centres**”.
- The community produced domain-specific roadmaps for the 3 TDCCs to guide their activities .



Roadmaps from the three thematic DCCs – Digital Competence Centres

Between September 2021 and June 2022, three writing teams from the scientific field developed roadmaps. They were supported in this process by NWO secretaries. Researchers, large-scale infrastructures and supporting institutions could provide input to ensure the TDCC roadmaps are supported by the field.

Thematic DCCs: Tackling domain-specific challenges



TDCC-LSH
Life Sciences & Health



TDCC-SSH
Social Sciences & Humanities



TDCC-NES
Natural & Engineering Sciences

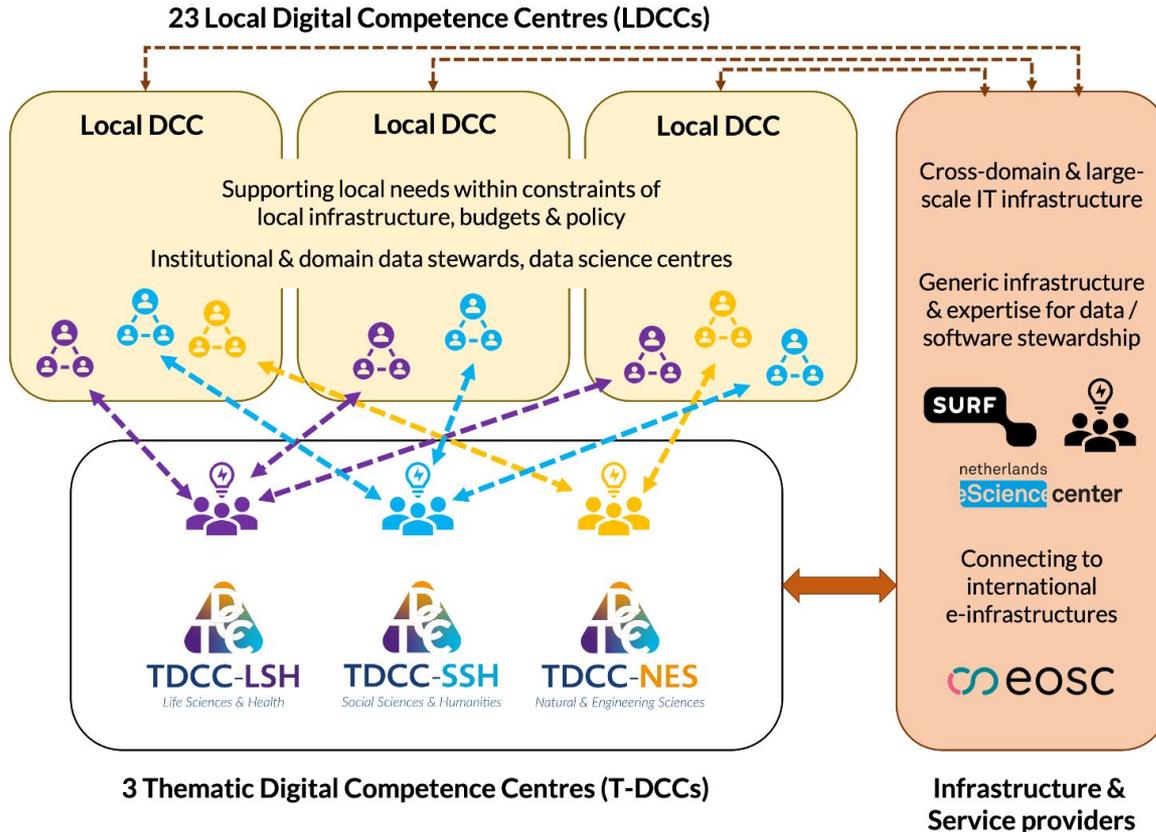


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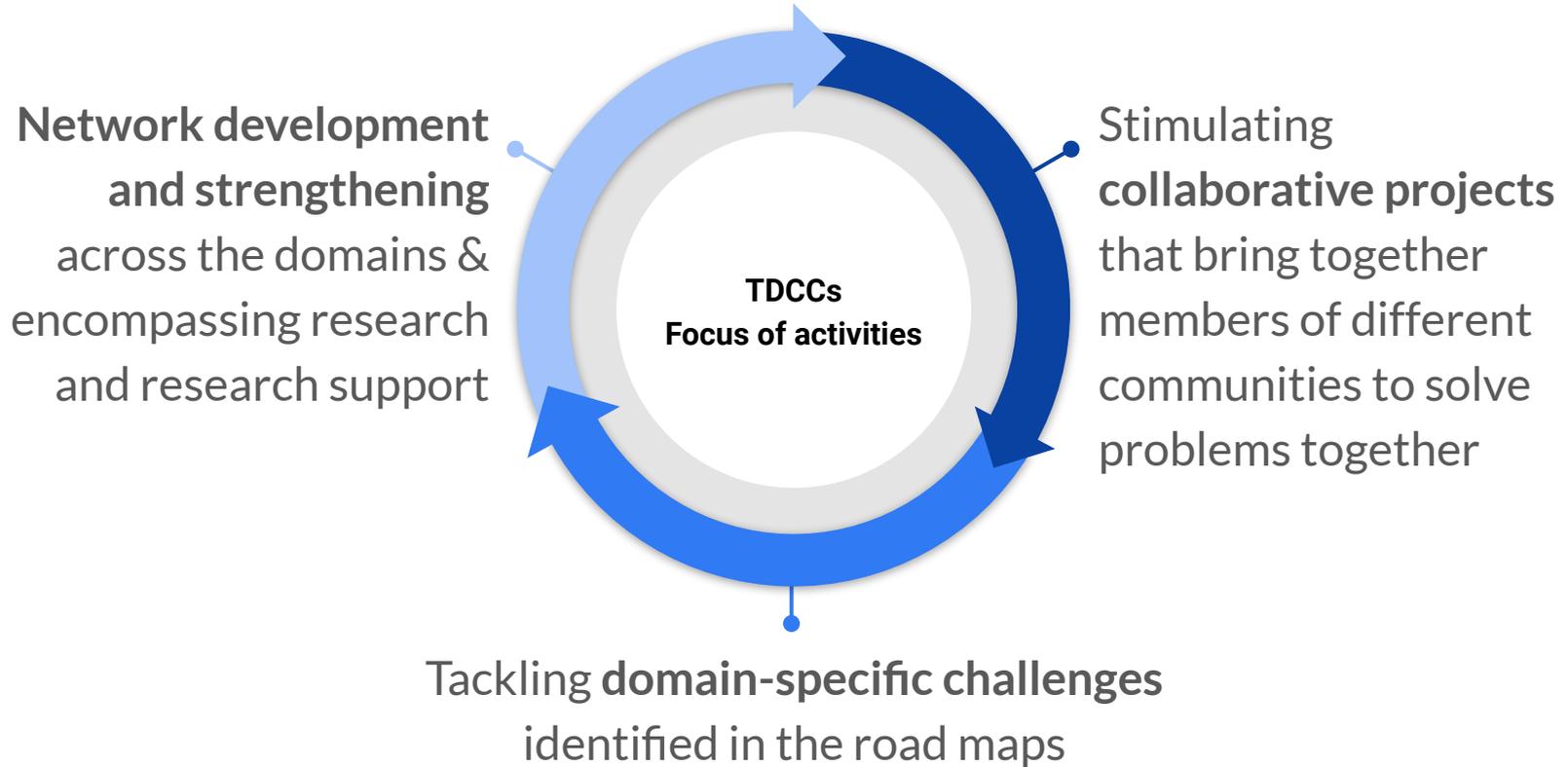


Advisory or Governing Boards representing the relevant domain stakeholders

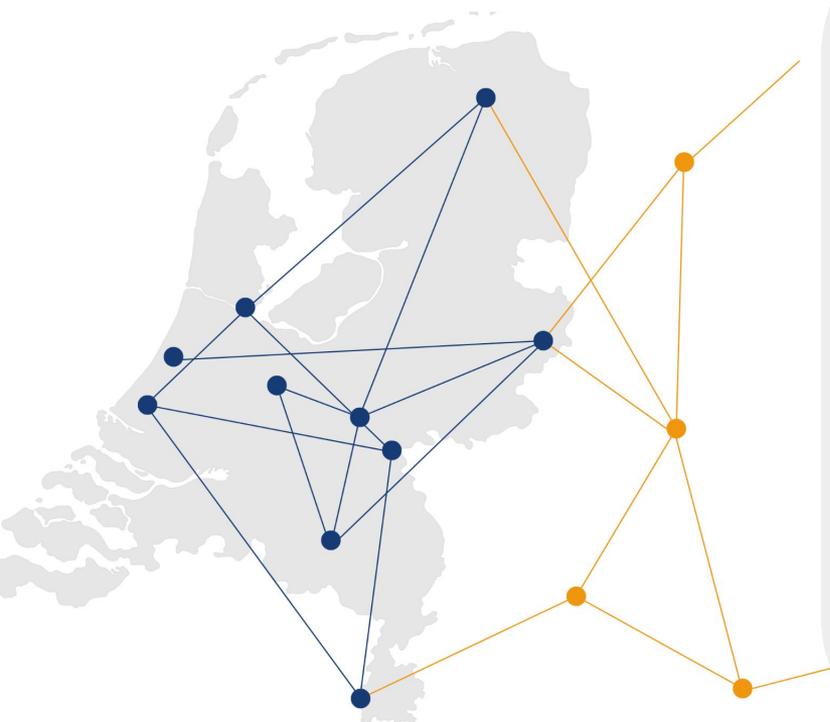
Local and Thematic DCCs in the research landscape



TDCC focus of activities



TDCC network development and strengthening



- Website; joint TDCC with domain-specific communication channels
- Leveraging existing networks and communities, like the national data stewards
- Roadshow: TDCC staff and local DCC and research staff exchange
- Events: national, domain-specific, and cross domain
- Developing international connections

TDCC Network activities - highlights

- Data Steward Interest Group (DSIG)

- [started by DTL in 2017](#)
- Active community (NL & beyond)

- Domain-specific DSIG meetings

- Taking turns by NES, SSH, LSH

- Spotlight on: Data Stewards

- Interviews with research data support professionals
- <https://tdcc.nl/category/spotlight-on/>

- National event “[Teaming up Across Domains](#)”

- 27 February 2024, Utrecht
- 230 participants
- Average evaluation score of 8!
- [Event summary](#)
- Organisers:



&



National Coordination Point
Research Data Management

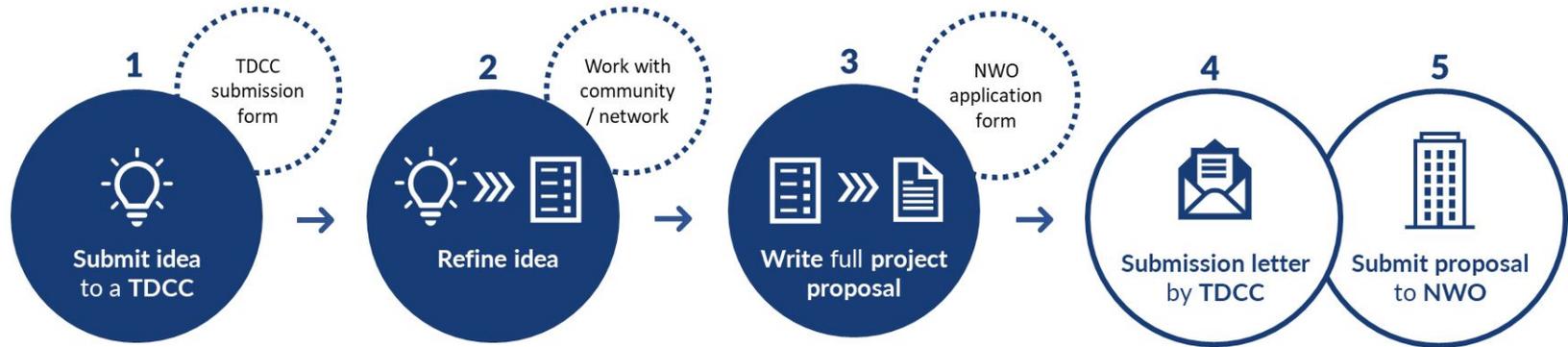
with

RDA-NL, DSIG, Local DCCs



TDCC collaborative projects

- Budget per domain via NWO: **€ 800k per year** with **€ 950k initial bottleneck funding**



- Key aspects:
 - Proposals need to contribute to **solving challenges** as described in **TDCC roadmaps**,
 - Project teams must be collaborations across different stakeholders

TDCC-NES: 2 project examples



Bottleneck project



Enabling Best Practices for Sustainable Software in the Natural & Engineering Sciences

Leading institution:
Netherlands eScience Center

NES
bottlenecks
addressed

Digital competencies and training



Fragmented landscape

Interoperability of data and of workflows

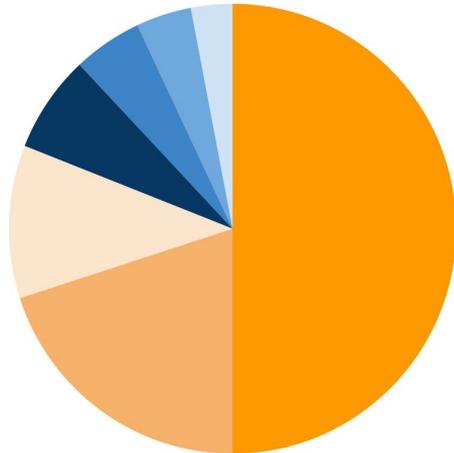
Long-term preservation and maintenance of research software



Guidance about dealing with IP and legal issues

Collaboration between disciplines across the domain for adoption of FAIR practices





Project financial beneficiaries

- NLeSC - Netherlands eScience Centre
 - UL - Leiden University
 - UT - University of Twente
 - RUG - University of Groningen
 - 4TU.RD - 4TU.ResearchData
 - KNMI - Royal Dutch Meteorological Institute
 - TUD - Delft University of Technology
- + in kind contributions from**
- UU - Utrecht University
 - UL - Leiden University
 - UG - University of Groningen



Challenge project
proposal
in development

FAIR4ChemNL: Unifying and managing chemical research data-flows

Leading institution:
TU Delft

NES
Challenges
addressed

FAIR
data



Sustainable
software and
e-science



Connections to
the international
activities



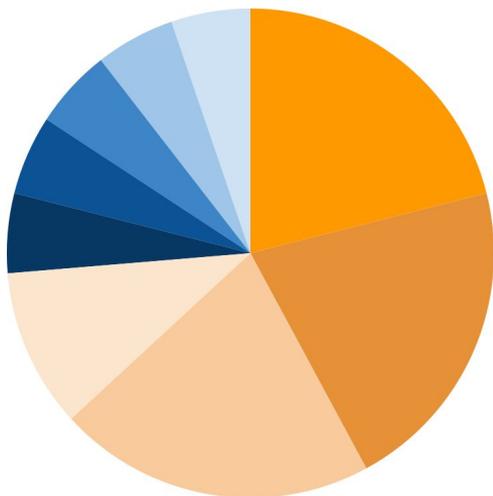
Long-term data
archiving



Locate
computing
capacity close to
the storage

Human
capital

Cross-field
collaborations



Current participants

- TUD - Delft University of Technology
- UU - Utrecht University
- UvA - University of Amsterdam
- SURF
- NLeSC - Netherlands eScienceCenter
- RUG - University of Groningen
- RU - Radboud University
- UL - Leiden University
- TU/e - Eindhoven University of Technology

Collaborating with

From Germany:



Within the Netherlands:

Fundamentals & Methods of Chemistry advisory committee



Reaching out to, in the UK:
And internationally:

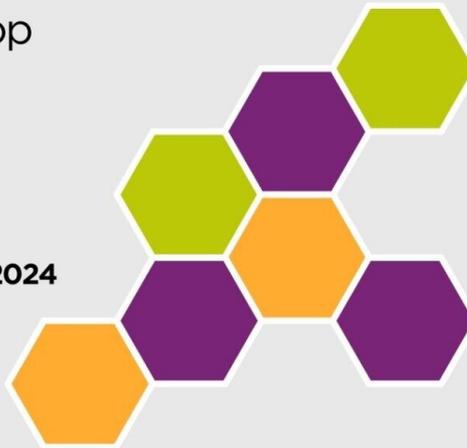


Materials Ontologies, RDA Task Group

Project development workshop

FAIR4ChemNL workshop

4 & 5 June 2024
Utrecht



NFDI4at

supported by  TDCC-NES

<https://tdcc.nl/evenementen/fair4chemnl-workshop/>

Insights from Social Sciences & Humanities (SSH) projects

- Projects are quite diverse across many dimensions:
 - Bottom-up vs. top-down approach
 - Led by data stewards vs. led by infrastructure vs. led by researchers
 - High level (all of SSH) vs. specific sub-discipline (e.g. oral history)
 - Guidelines vs. trainings vs. national consultation vs. tooling development
 - ...
- 23 disciplines under the SSH umbrella, therefore hard to capture all
- Intention to serve both main players as well as underserved (research) communities

(Excerpt) Examples for projects from Social Sciences & Humanities

Towards a FAIR-Enabling Approach to Research Integrity in Research Data Management



Cluster 1 - FAIR data & software

Involved parties and advisors from:
...connecting to established processes like the guidelines of the Deans of the Social Sciences in the Netherlands (DSW)

Leiden University, DSW Committee on Research Integrity in Research Data Management, University of Amsterdam, DANS, (...)

StoRe – Storing oral histories for future reuse across communities



Cluster 1 - FAIR data & software

Involved parties and advisors from:
...researcher-led projects for certain sub disciplines

Vrije Universiteit Amsterdam, Stichting Bevordering Maatschappelijke Participatie, Netherlands Institute of Sound and Vision, CLARIAH

Digital Social Sciences and Humanities Summer School on Research Software



Cluster 3 - Knowledge Enhancement

Involved parties and advisors from:
...trainings and workshops about research software skills for SSH

Netherlands eScience Center, Utrecht University CDH Research Software Lab, KNAW Digital Humanities Cluster, CLARIAH, ODISSEI, (...)

Combatting Bias: Guidelines for Creating Equitable Data in the Humanities



Cluster 4 - Addressing pressing issues

Involved partners and advisors from:

...projects involving international partners & expertise
International projects involving history, Huygens Institute, Radboud University, University of Amsterdam, National Archives of the Netherlands, Open University of the Netherlands, Netherlands Institute of Sound and Vision, District Six Museum (SA), FAIR Expertise Hub (ODISSEI), Global Data Lab, HAICu project

Beyond personal data: RDNL Training on hard-to-share research data for SSH early-career researchers



Cluster 3 - Knowledge enhancement

Cluster 4 - Addressing pressing issues

Involved partners and advisors from:
...training for researchers by well-established training network

Research Data Netherlands (RDNL), SURF, DANS, Promovendi Netwerk Nederland (PNN), ODISSEI, Leiden University

Untangling FAIR Implementation in the Social Sciences & Humanities



Cluster 1 - FAIR data & software

Cluster 2 - Raising Awareness

Involved partners and advisors from:
...FAIR implementation on the level of large organizations, involving key players

ODISSEI, Erasmus University Rotterdam, DANS, Koninklijke Bibliotheek (KB), Netwerk Digitaal Erfgoed, Leiden University, SURF, SSHOC-NL, FAIR Expertise Hub (ODISSEI)

Strengthening the Dutch LSH FAIR data stewardship landscape – installing a national cohort of FAIR LSH fellows



- Budget 840 keuro, duration 18 months
- Project submitted, under review with NWO
- Each RPO can place 0.2 fte fellow for 1 year
- Dedicated training programme
- Experts/coaches for areas:
 - Microbial data (UNLOCK, WUR)
 - Biodiversity (ARISE, Naturalis)
 - Bio-imaging (NEMI and NLBioimaging, UL & UMCG)
 - Omics & Rare Diseases (UMCG/X-omics)
 - GOFAIR
 - Plant phenotyping (NPEC, WUR)
 - Health data (AUMC)



TDCC-LSH projects in the pipeline

Ambitions TDCC-LSH
Strengthen good data stewardship and harmonise data access practises
Enhance the interoperability of digital solutions and resources
Strengthen the capacity and expertise base in digital research

- 3 community-driven, complementary projects, covering full LS&H domain
- got approved May 13, 2024 by TDCC-LSH Programme Board,
- will be submitted to NWO half June 2024
- tackling main TDCC-LSH roadmap challenges
 - **Tools framework for services, tools and workflows in digital Life Sciences and Health research**
 - Partners: 7 RPOs (representing ELIXIR-NL), Health-RI, SURF, NLeSc
 - **FAIR training**
 - Partners: 4 RPOs, Health-RI, endorsed by o.a. DSIG (data stewards interest group)
 - **Training the next generation of FAIR-aware and AI-savvy data scientists for the LSH domain**
 - Partners: 5 RPOs (representing Dutch bioinformatics/systems biology community BioSB), Health-RI

Workshop on the implementation of official data stewards job profiles for 3 types of research organisations in the Netherlands (April 2023 *)

nr	Recommendation	Status	Next steps
1	<u>Formalization of job profile data steward</u>		<ul style="list-style-type: none"> • <u>Create clarity on the data stewardship tasks</u> • <u>Make open science achievements such as open data or software competitive to make the case for investing in data stewardship for (faculty) boards</u>
2	<u>Data stewards are well organized and easy to find</u>		
3	<u>Build data steward capacity</u>		<ul style="list-style-type: none"> • <u>Team up with all stakeholders in your organization, including HR staff and senior researchers or deans who can act as ambassadors for data stewardship</u> • <u>Find funds for structural and sustainable data stewardship support</u>
4	<u>Ensure the availability of (certified) education and training of data stewards</u>		<ul style="list-style-type: none"> • <u>Set up acknowledged professional training for data stewards and explore if a professional association is desirable (cf. software engineering societies or privacy officers associations)</u>
5	<u>Use job profiles for career perspective data stewards</u>		<ul style="list-style-type: none"> • <u>Make FAIR and data stewardship meaningful by focusing less on compliance and more on societal responsibility</u> • <u>Allow data stewards time to be part of the research team and recognize their efforts as part of the team's work</u>

Workshop [Report](#)
[blog](#)

* 2 years after our NPOS-F report [Professionalising data stewardship in the Netherlands. Competences, training and education \(2021\)](#)

Towards implementation



Data Stewardship Curricula
and Career Paths Task Force

Recommendations for Data Stewardship Skills, Training and Curricula with Implementation Examples from European Countries and Universities

Authorship Community:

Chiara Basalt^{2,3}, Judit Fazekas-Paragh^{2,4}, Monica Forni^{2,5}, Celia van Gelder^{1,6}, Ilire Hasani-Mavriq^{1,7}, Joanna Janik^{2,8}, Tereza Kalová^{2,9}, Iryna Kuchma^{2,10}, Hanna Lindroos^{2,11}, Henry Lütcke^{2,12}, Jaana Pinnick^{2,13}, Núria Raga^{1,4}, Deborah Thorpe^{1,5}, Lorna Wildgaard^{2,16} on behalf of Minimum Curricula subgroup

9. APPENDIX 2: NATIONAL CASE STUDIES

- 9.1 Austria
- 9.2 France
- 9.3 Hungary
- 9.4 Italy
- 9.5 Latvia
- 9.6 The Netherlands
- 9.7 Spain
- 9.8 Sweden
- 9.9 Switzerland
- 9.10 United Kingdom

EOSC Task Force Deliverable
<https://zenodo.org/doi/10.5281/zenodo.10573891>
 January 2024
 Netherlands Case Study, pages 37-41



Data Stewardship Curricula
and Career Paths Task Force

9.6 The Netherlands

Open Science in the Netherlands

The Netherlands research community has been strongly committed to Open Science principles and practices for decades. In 2017 the National Programme Open Science (NPOS) was launched to strengthen and align bottom-up and top-down initiatives and to coordinate the transition to Open Science in the Netherlands. In 2022 the NPOS delivered the [NPOS2030 Ambition document](#) with an overarching ambition: 'By 2030, scientific knowledge will be freely available, accessible, and reusable for everyone. Open Science in the Netherlands will be embedded as a standard practice across all scientific disciplines from basic to applied sciences, in the natural, medical, social sciences and the humanities.' This ambition is translated into four strategic goals:

- Towards societal engagement and participation.
- Towards inclusive and transparent scientific processes.
- Towards open scholarly communication.
- Towards FAIR and open research outputs.

To make progress with these strategic goals, progress is needed in

- Development of new and more effective use of all infrastructures for effective and open knowledge sharing.
- Development of open knowledge practice skills in the relevant areas.
- Investment in and the spreading of best practices and inspire knowledge sharing.
- Reform the rewards and recognition system to include open science.
- Development of new and more effective use of existing policies.
- An additional rolling agenda describes for all four strategic areas will be achieved.

In the Rolling Agenda of NPOS2030, the road to sufficient expertise is formulated in Objective 4.6: 'In 2030, a professional community of data stewards is established, and there is enough structural capacity (in FPOs) to facilitate making digital data a nationally coordinated training programme for data stewards'. In 2023 the [Beleidsplan Open Science](#) (Open Science NL) was established to transition to Open Science in the Netherlands.

Local and Thematic Digital Competence Centres

In 2020 research council NWO launched a call for the setting up of Digital Competence Centres (DCC) in research performing organisations (RPOs).



Data Stewardship Curricula
and Career Paths Task Force



Figure 2. Basic job profile components of a data steward (Jetten et al., 2021, p.40)

Professionalizing Data Stewardship

The outcomes and recommendations of both projects are widely recognised and formulated the groundwork for the subsequent NPOS project. *Professionalising data stewardship in the Netherlands: competences, training and education - Dutch roadmap towards national implementation of FAIR data stewardship* (Jetten et al., 2021). The project team consisted of over thirty representatives of universities, university medical centres, universities of applied sciences, and service providers, complemented by representatives of the major stakeholders VSNL, VU, NfU, PNN, SURF and funder ZonMw.

The report gives an analysis of the current situation in the Netherlands with regard to data stewardship competences, education and training and draws attention to the urgent need for nationally coordinated action by the main stakeholders. It gives tangible recommendations that help organisations with professionalising data stewardship, i.e., hire, train and educate data stewards, including career paths. Major recommendations relate to job profiles for data stewards and research software engineers and to data stewardship training and education in HEIs and RPOs. Also, it includes drafts for data stewards' job profiles for universities, university medical centres and universities of applied sciences, which already had a great impact on the professionalisation and acknowledgement of data stewardship, not only in the Netherlands but worldwide. As a first outcome, the data steward profile was implemented in the UFO, the Dutch job classification system

EOSC Netherlands tripartite Event 2023 & TDCC



- Multiple initiatives have developed in the Dutch research data landscape: The Essentials for Data Support course (since 2013), development of the FAIR Principles (2014, published in 2016), strong national networks: DSIG (since 2017) and LCRDM (2018), a data stewardship competency framework that a.o. led to formal university job profiles (UFO) since 2021, and of course the LDCCs at the RPOs (2020).
- With national support three thematic DCCs for NES, SSH, and LSH, which started in September 2022, will focus on **domain specific data challenges and solutions** towards making research data FAIR and will bring together domain-specific research and data professionals of the RPOs, the national infrastructure projects (Roadmap), and will link to the domain specific European RIs and also to the EOSC.
- To be able to realise the adequate expertise and sufficient capacity of the required data professionals, it is crucial that all stakeholders - the EC, the national governments, science domains and the RPOs - work together in expanding adequate funding mechanisms and implementing (national) curricula and career paths for data professionals.



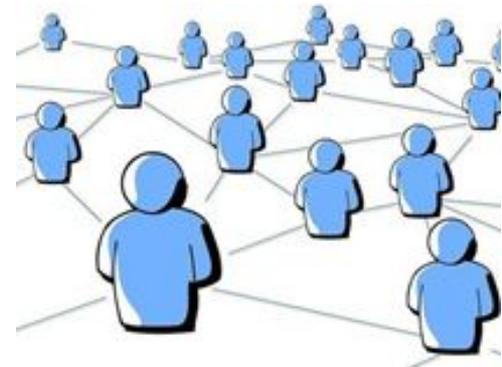
[NL tripartite event 2023](#)

Pitch Celia van Gelder on behalf of TDCC

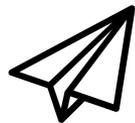
10:30 - 11:10	Panel: Institutional & disciplinary expertise and support. Local and Thematic Data Competence Centres. Opening statements of the panellists Discussion	Moderation: Ron Augustus (CIO and member board of directors, SURF) Panellists: Celia van Gelder (Training Programme Manager DTL/Network Manager TDCC Life Sciences & Health) Jeroen Rombouts (Coordinator Research Data Management EUR/chair IN-DCC) Volker Beckman (co-chair, EOSC-SB) Javier Lopez Albacete (Policy Officer at Open Science Unit, Directorate General for Research and Innovation, EC) Loek Brinkman (Projectmanager DANS, Open Science Communities)
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In conclusion, the 3 TDCCs...

- Play an important part in the people infrastructure in the Netherlands
- Bring together the stakeholders in their respective domains SSH, NES, LSH
 - And work together cross-domain where relevant
- Organize and facilitate their respective communities, and the data stewards in those communities to jointly tackle the identified challenges, both by a) network activities as well as b) joint/collaborative projects
- Work synergetically with existing networks in the Netherlands (DSIG, LCRDM, RDA-NL, OSC)
- Collaborate closely with SURF and eScienceCenter
- Are building strong relationships with
 - the Dutch LDCCs
 - the GWIs (Large scale research infrastructures)
- Are well connected to, or aim to connect with, the international ecosystem (EOSC, ESFRIs, ..)



Contact us!



www.TDCC.nl



TDCC-SSH

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 [Newsletter](#)



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