BROCCOLI -

a federated hub for healthy Dutch Open Research Information

Section 1 – Applicant(s)	

Name of the main applicant	John Doove
Affiliation – institution	SURF
Affiliation – department	Innovation
Position	Program manager
End date of contract	Permanent
E-mail address	John.doove@surf.nl
ORCID ID	https://orcid.org/0000-0001-8217-2217

Name of the co-applicant	Dr. Nees Jan van Eck
Affiliation – institution	Leiden University
Affiliation – department	Centre for Science and Technology Studies (CWTS)
Position	Senior Researcher and Head of Data Science
End date of contract	Permanent
E-mail address	ecknjpvan@cwts.leidenuniv.nl
ORCID ID	https://orcid.org/0000-0001-8448-4521

Name of the co-applicant	Arjan Schalken
Affiliation – institution	Vrije Universiteit Amsterdam
Affiliation – department	
Position	Program manager UKBsis | scholarly information services of Dutch research libraries
End date of contract	Permanent
E-mail address	a.f.schalken@vu.nl
ORCID ID	https://orcid.org/0000-0002-2406-846X

Name of the co-applicant	Tung Tung Chan
Affiliation – institution	Erasmus University Rotterdam
Affiliation – department	Engagement & Research Services
Position	Senior Strategic Advisor
End date of contract	Permanent
E-mail address	chan@eur.nl

ORCID ID	https://orcid.org/0000-0003-0732-3315

Name of the co-applicant	Prof. dr. Thed van Leeuwen
Affiliation – institution	Leiden University
Affiliation – department	Centre for Science and Technology Studies (CWTS)
Position	Professor by special appointment Science Studies
End date of contract	Permanent
E-mail address	leeuwen@cwts.leidenuniv.nl
ORCID ID	https://orcid.org/0000-0001-7238-6289

Name of the co-applicant	Menno Grijpma
Affiliation – institution	SURF
Affiliation – department	Internal Services
Position	Technical Consultant
End date of contract	Permanent
E-mail address	menno.grijpma@surf.nl
ORCID ID	https://orcid.org/0009-0004-6723-8133

Name of the co-applicant	Eileen Waegemaekers
Affiliation – institution	SURF
Affiliation – department	Innovation
Position	Project manager
End date of contract	permanent
E-mail address	Eileen.waegemaekers@surf.nl
ORCID ID	https://orcid.org/0009-0005-5749-4886

Name of the co-applicant	Cristina Huidiu
Affiliation – institution	Wageningen University and Research
Affiliation – department	Library
Position	Product Owner – Digital Library Services
End date of contract	permanent
E-mail address	Cristina.huidiu@wur.nl
ORCID ID	https://orcid.org/0000-0002-1242-1123

Name of the co-applicant	Naomi Wahls van Gils
Affiliation – institution	TU Delft
Affiliation – department	Research Services
Position	Research Information Infrastructure Coordinator

End date of contract	permanent
E-mail address	n.l.wahls@tudelft.nl
ORCID ID	https://orcid.org/0000-0003-4552-7722

Section 2 - Summary	
Proposed project title	**BROCCOLI – *a federated hub for healthy Dutch Open Research Information***
Project type	Large
Project duration (in months)	48

Section 3 – Project description

3.1 Alignment of your project with the aim of the call

Currently, there is no shared national infrastructure in the Netherlands for monitoring research or for conducting evaluations across institutions. Instead, numerous fragmented local initiatives and solutions have emerged, with universities, funders, research analytics providers (e.g., CWTS), UKB, and other organizations independently extracting, transforming, and curating research information. This disjointed approach results in inefficiencies, duplication of efforts, and missed opportunities for collaboration, hindering the development of a unified, open system for managing research information effectively. Addressing this gap, our proposal for **BROCCOLI**, the **Dutch Open Research Information Hub**, seeks to provide a cohesive, collaborative, national-level solution based on open practices. This brings relevant information on Dutch research actors, activities, and outputs together in a fully open infrastructure that facilitates more effective evidence-based decision-making in the Dutch research system.

BROCCOLI directly supports the strategic goal: "a central warehouse for enriched open metadata" as outlined in the "UNL Open Science Agenda" (key priority 2), the "NPOS2030 Ambition document" (objective 3.2: sustainable open infrastructure for metadata), and international initiatives to enhance open research infrastructures (Barcelona Declaration on Open Research Information) and responsible research assessment (COARA). To ensure sustainability, we will build on existing institutional data warehouses, research information infrastructure at CWTS and UKBsis, and leverage the proven SURF Lifecycle Product Development approach. Drawing on best practices from other national initiatives like the Research Portal Denmark, the French Open Science Monitor, and the Curtin Open Knowledge Initiative. BROCCOLI will employ a modern federated data governance structure using Data Mesh Architecture principles. This approach reflects UNL's emphasis on shared community ownership and contribution, creating a scalable, collaborative, and future-proof infrastructure for research information in the Netherlands. It also closely aligns with the Open Research Information program in SURF's innovation zone Strengthening Open Science.

The value proposition includes increasing efficiency and (meta)data quality through shared data products, collaborative data engineering, and pooling of resources and expertise. Three use cases are essential drivers for the hub's development and impact. First, BROCCOLI will enable **open science monitoring** for institutions, funders, and national-level policymakers, ensuring that research activities and outputs are transparently tracked, in line with open science goals. Second, it will support **responsible research evaluation** for research managers and institutions, enabling assessments that promote transparency, fairness, and inclusiveness. Third, BROCCOLI will facilitate **monitoring of publisher deals** for libraries and institutions, allowing them to make informed decisions about licensing and (open) access, optimize budgets, and evaluate the effectiveness of their publishing agreements.

By streamlining data harvesting, cleaning, and preparation and offering a rich catalogue of tables and openly accessible APIs, the hub lowers barriers for non-technical users, enabling them to leverage high-quality data for transparent and effective decision-making. This proposal, therefore, addresses immediate needs within the Dutch research support and research policy communities and also strengthens the foundation for sustainable, open research infrastructures, enabling feedback loops of high-quality metadata to local CRIS systems and global open data sources like OpenAIRE and OpenAlex.

Our initiative is designed to work in tandem with the **Dutch Repository Federation (DURF)**. While DURF focuses on enhancing the organization, governance, and quality of metadata within existing repositories and CRIS systems, BROCCOLI takes this metadata related to Dutch research actors, activities, and outputs and enriches it with additional information from a variety of external data sources, such as Crossref, Crossref Event Data, DataCite, DOAJ, CORDIS, OpenAIRE, OpenAlex, ORCID, Research Software Directory, ROR, and Unpaywall. This additional information is crucial for supporting the advanced analyses in **open science monitoring**, **responsible research evaluation**, and **monitoring publisher deals**. The possibilities created in the BROCCOLI project to aggregate and enrich data ensure that the metadata generated and validated by DURF is effectively utilized for strategic decision-making across the Dutch research landscape. Together, these initiatives form a robust ecosystem that supports the entire lifecycle of research information, from data creation and quality assurance to analysis and strategic utilization, thereby solidifying the Netherlands' commitment to open science.

Endorsement: This pre-proposal is submitted on behalf of **all** universities and is unanimously endorsed by **all** rectors.

It is seen as important for all Dutch knowledge institutions, fully in line with previously established national ambitions. In addition, the proposal is crucial as part of a national infrastructure to make Open Science widely and quickly applicable.

3.2 Project plan

The project will use the SURF Life-cycle Product Management Process, and employ an agile methodology, ensuring both adaptability with a user-centered design approach and a sustainable business model throughout the process. In alignment with open science principles, all data within BROCCOLI will be openly accessible to everyone, and all code and micro-services containers developed for BROCCOLI will be made open source, fostering transparency, collaboration, and broad accessibility.

WP1: ORI User Community (25% budget). This work package focusses on building and managing an engaged user community, which is crucial for a user-centred design approach. It will establish active communities of practice involving data users and providers that rely on reliable data for decision making, such as the Research intelligence Network Netherlands (RINN), Dutch Association for Institutional Research (DAIR), Dutch Ministry of Education and Research, Universities of the Netherland (UNL), Rathenau Institute, and research communities like ODISSEI. These communities will be supported by workshops and hackathons to foster collaboration. From the early start, continuous engagement and feedback mechanisms will ensure the hub evolves according to user needs. Additionally, a comprehensive training program for data engineers and policymakers, along with communication materials, will empower users to effectively leverage the hub's data services.

WP2: Data Governance and Curation (40% budget). This work package is central to the project and focusses on data governance, quality control, and enrichment to ensure data integrity and usability. It will establish a governance framework defining rules of participation, form dedicated curation teams to manage and update research information, and develop services for selecting and linking open research information from multiple sources. Metadata enrichment services and quality control protocols will be implemented to guarantee data accuracy and reliability. Due to the data mesh governance structures, universities and other organisations have the opportunity to take ownership for specific data products they need, and provide an in-kind contribution to the curation of the data others might need as well.

WP3: Technology Platform (25% budget). This work package focuses on creating a robust, integrated technical architecture that facilitates seamless collection, processing, and distribution of research information. It will leverage existing platforms (a.o. UKBsis, and CWTS data warehouse) and tools, and reuse data engineering capabilities. Key outputs include a comprehensive system architecture document, cloud-based infrastructure deployment, and tools for metadata transformation and storage. Additionally, interfaces for humans and machines will be provided, such as APIs, a query interface, and dashboards, ensuring easy access to high-quality data for a wide range of users, from developers to non-technical stakeholders.

WP4: Project/Product Management (10% budget). This work package ensures smooth project execution, coordination, risk management, evaluation criteria, and alignment with strategic goals. Key deliverables include a governance plan outlining the organizational structure and resource allocation, a dynamic development roadmap to track iterations and progress, and a sustainability report that details a business model for the hub's long-term viability.

3.3 Team composition

The research information hub is a collaborative effort, developed in consultation with key stakeholders and contributors in the field. Per work package this includes the following people and expertise: **WP1**: **ORI User Communities**; Tung Tung Chan (EUR strategy advisor, board member RINN, Coordinating WP1), Thed van Leeuwen (CWTS; Coordinating responsible evaluation and open science monitoring), Arjan Schalken (UKB, Coordinating monitoring publisher deals), Maaike Koperdraad (UKB, user experience dashboards) **WP2**: **Data Governance and Curation**; Arjan Schalken (UKB; Coordinating data governance), Nees Jan van Eck (CWTS; Coordinating data orchestration and curation), Maaike Koperdraad (UKB, data quality), Martijn Visser (CWTS, data engineering) **WP3**: **Technology Platform**; Menno Grijpma (SURF; Tech Consultant), Cristina Huidiu (WUR; Product manager), Maarten Hoogerwerf (SURF; Architect), Bram van den Boomen (CWTS, DevOps), **WP4**: **Project/Product Management**; John Doove / Eileen Waegemaekers / Maurice Vanderfeesten (SURF; Project lead), Naomi Wahls-van Gils (TU Delft; Governance plan).

Section 4 – Budget

The budget from the Personnel costs reflect the roles described in the team composition. The [Handleiding Overheidstarieven](#) (HOT) of 2025, a manual to estimate Dutch government tariffs, are used to calculate the costs.

Type of costs	Short explanation	Costs
Personnel costs	WP1: Community Coordinator (0,8FTE, scale 12, over4 years)	€ 93.600
	WP1: Usecase expert responsible research evaluation & open science monitoring (0,4FTE, scale 12, over 4 years)	€ 46.800
	WP1: Usecase expert publisher deals monitoring (0,4FTE, scale 12, over 4 years)	€ 46.800
	WP1: UX expert (0,8FTE, scale 11, over 4 years)	€ 80.800
	WP2: Data governance coordinator (0,8FTE, scale 12, over 4 years)	€ 93.600
	WP2: Data orchestration & curation coordinator (0,8FTE, scale 12, over 4 years)	€ 93.600
	WP2: Data quality curator (2FTE, scale 10, over 4 years)	€ 176.000
	WP2: Data engineer (2FTE, scale 10, over 4 years)	€ 176.000
		€ -
	WP3: Technology Advisor (0,4FTE, scale 12, over 2 years. Of which 0,4FTE in kind by SURF. Amount: € 75600,-)	€ -
	WP3: Information Architect (0,4FTE, scale 13, over 2 years. Of which 0,4FTE in kind by SURF. Amount: € 79920,-)	€ -
	WP3: Product manager (0,8FTE, scale 12, over 4 years)	€ 93.600
	WP3: Dev/Ops (2FTE, scale 12, over 4 years)	€ 234.000
	WP4: Project Manager (1,6FTE, scale 12, over 4 years. Of which 1,6FTE in kind by SURF. Amount: € 302400,-)	€ -
	WP4: Project Assistant (0,8FTE, scale 10, over 4 years. Of which 0,8FTE in kind by SURF. Amount: € 126560,-)	€ -
	WP4: Business Developer (0,4FTE, scale 12, over 2 years. Of which 0,4FTE in kind by SURF. Amount: € 75600,-)	€ -
	WP4: Legal Expert (0,2FTE, scale 12, over 4 years. Of which 0,2FTE in kind by SURF. Amount: € 37800,-)	€ -
	Unforeseen (2,5%)	€ 75.000
	Subtotal (81% of request budget)	*€ 1.209.800*
Other costs	IT costs (Cloud storage, licenses)	€ 150.000
	Training, Catering, Facilitation	€ 5.000
	Communication materials	€ 10.000
	External hire (eg. UX, Consultancy)	€ 50.000
	Unforeseen (2,5%)	€ 75.000
	Subtotal (19% of request budget)	*€ 290.000*
Total request from NWO		**€ 1.499.800**
In kind costs	by SURF, total amount:	€ 697.880

In kind contributions are made by SURF for their team members contributing to the project, from the Open Research Information program, in the Open Science Innovation zone. This will reduce the amount requested from NWO, in order to deliver a feasible project proposal with enough resources for the required expertise in the other areas, seen in the light of the total of the project.

Section 5 – Declaration

By submitting this form, I declare that:
- I and all the individuals involved in this proposal satisfy the nationally and internationally accepted standards for scientific conduct as stated in the Netherlands [Code of Conduct for Research Integrity](#) (The Universities of the Netherlands).
- The research organisation has been informed of this grant application and the research organisation accepts the grant conditions of this programme.
- I have completed this application form truthfully.