DURF – DUTCH REPOSITORY FEDERATION

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Section 2: Summary

Proposed project title	DURF – Dutch Repository Federation
Project duration (in months)	48 months

English public summary

The Dutch Repository Federation (DURF) will reinforce the existing Netherlands Research Portal and existing institutional repositories/CRIS systems to make availability of Dutch research output more robust, increasing our resilience and sovereignty. Lots of article PDFs are missing from repositories. DURF will:

1. Integrate systems under shared governance
2. Enable enriched metadata feedback via OpenAIRE Graph
3. Increase full-text collection
4. Preserve output via KB's eDepot
5. Maximize discoverability through multiple channels like OpenAlex, Google, EOSC-nodes
6. Advance expert/research finder through the Portal

This federation creates a robust backbone for Open Science, ensuring FAIR Dutch research amid diminishing trust

in academia.

Word count EN-SUM (max 100): 100

Dutch public summary

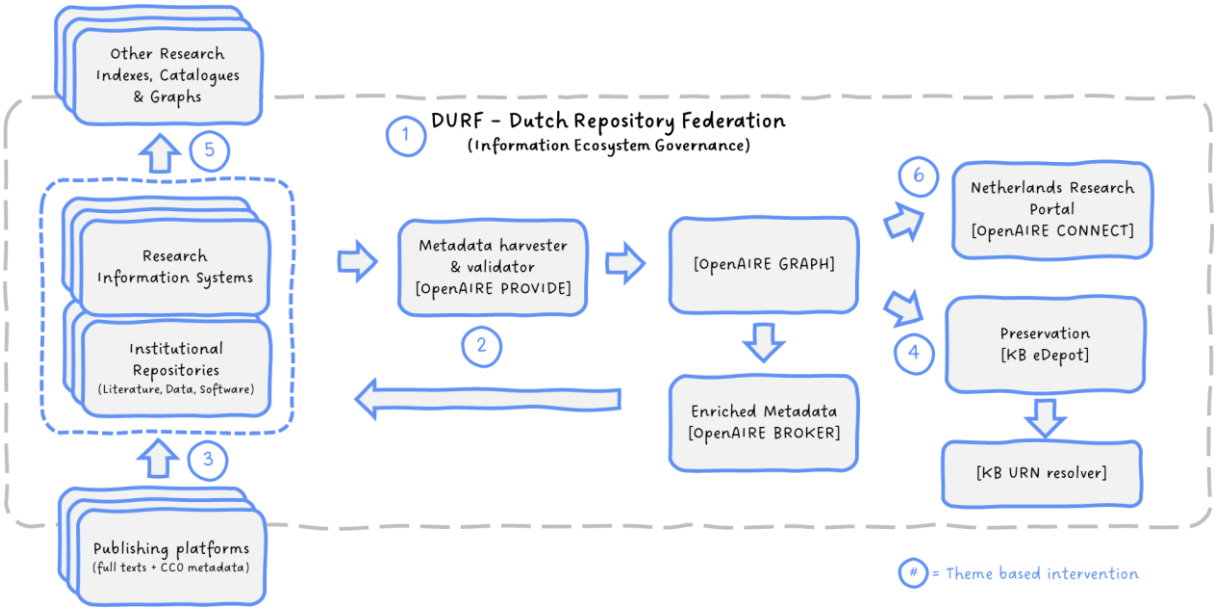
De Dutch Repository Federation (DURF) zal de bestaande Nederlandse Onderzoeksportal en bestaande institutionele repositories/CRIS-systemen versterken door beschikbaarheid van Nederlands onderzoek robuuster te maken, waardoor onze academische veerkracht en soevereiniteit toenemen. Veel PDF's van artikelen ontbreken in repositories. DURF zal:

1. Systemen integreren onder gedeeld bestuur
2. Verrijkte metadata-feedback via OpenAIRE Graph mogelijk maken
3. Volledige tekstcollectie vergroten
4. Output bewaren via KB's eDepot
5. Vindbaarheid maximaliseren via kanalen zoals OpenAlex, Google, EOSC-nodes
6. Expertzoeker/onderzoekszoeker via de Portal verbeteren

Deze federatie vormt de ruggengraat voor Open Science in Nederland, die FAIR Nederlands onderzoek waarborgt te midden van afnemend vertrouwen in wetenschap.

Word count NL-SUM (max 100): 100

Section 3: Alignment with the scope of the call



3.1 Vision for the project and alignment with the aim of this call

The Dutch Repository Federation (DURF) becomes a robust federated backbone of the Dutch Open Science ecosystem, reinforcing national sovereignty over publicly funded research information and publications and ensuring findability and accessibility.

DURF builds on existing, but fragmented, Dutch Open Science infrastructures, including:

- 70+ institutional CRIS systems and repositories, from all 14 Dutch universities and their medical centers as well as universities of applied sciences and individual research institutes.
- OpenAIRE Graph for aggregation, and enrichment
- Netherlands Research Portal for additional discovery
- KB eDepot for preservation
- KB NBN Resolver for persistent identifiers

Currently, these systems operate without unified governance. With incomplete research output records (missing metadata, pdf's, preservation, visibility) DURF will integrate this fragmented landscape to:

1. **Reinforce resilience and digital sovereignty** through shared governance, comprehensive publication collection, and long-term preservation
2. **Enhance discoverability and accessibility** by aligning with international metadata standards and redistributing enriched research output to platforms like OpenAlex, Google, and EOSC nodes

DURF is designed to coordinate the in-kind support of all collaboration partners through **six themed interventions**:

1. Establishing shared governance
2. Improving metadata quality
3. Increasing full-text collection
4. Ensuring preservation via KB's eDepot
5. Optimizing distribution across multiple channels
6. Enhancing the Netherlands Research Portal

Word count SEC31 (max. 200): 199

3.2 User communities, challenges and needs

DURF addresses critical Open Science challenges faced by diverse user communities across the Dutch research ecosystem.

Primary Users:

Researchers struggle with access to paywalled literature and limited preservation options for non-traditional outputs. DURF improves full-text availability (Theme 3), ensures preservation (Theme 4), and enhances discoverability (Theme 5) of all research outputs.

Research-performing institutions face threats to digital sovereignty and limited negotiation power with publishers. DURF's shared governance (Theme 1) and standardized metadata (Theme 2) strengthen institutional agency over content and reduce commercial dependency.

Repository/CRIS managers need efficient metadata tools and workflows. DURF's quality improvements (Theme 2) and capture mechanisms (Theme 3) reduce workload while improving content coverage.

Secondary Users:

Policymakers currently rely on commercial data providers. DURF provides an open, comprehensive source through its enhanced Portal (Theme 6) and improved metadata (Theme 2).

Journalists and public have restricted access to publicly-funded research. DURF increases full-text availability (Theme 3) and optimizes distribution (Theme 5), supporting science communication.

Librarians require reliable infrastructure for knowledge discovery. DURF's distribution optimization (Theme 5) and Portal enhancements (Theme 6) support their information intermediary role.

Small publishers often lack preservation infrastructure. DURF's integration with KB's eDepot (Theme 4) ensures long-term preservation, supporting bibliodiversity.

SMEs and non-academic partners face barriers to research access. DURF's Portal (Theme 6) and increased full-text availability (Theme 3) facilitate knowledge transfer and support text-mining initiatives like GPT-NL and Elicit that require non-paywalled content.

These challenges remain insufficiently addressed by existing fragmented infrastructures lacking coordination, comprehensive collection, and unified preservation strategies.

Word count SEC32 (max. 300): 247

3.3 Alignment of project with OS principles

DURF embodies core Open Science principles throughout its design and implementation, serving as a foundational building block for Dutch Open Science infrastructure. Aligning to national agenda's such as the Open Science agenda from UNL and the NPOS2030 Ambition Document and international ones such as the Barcelona Declaration on Open Research Information and the European Open Science Cloud.

Open Standards & Interoperability: DURF adopts open community-based standards in all six themes, particularly in Theme 2's metadata quality improvements. All metadata will be licensed under CC0, using standardized vocabularies to ensure national and international interoperability.

Open Source Development: All software components developed within DURF—including metadata quality monitors, full-text capture tools, and Portal enhancements—will be released under open-source licenses, ensuring transparency and long-term sustainability without vendor lock-in.

Community Governance: Theme 1 establishes a stakeholder-governed model aligned with the Principles of Open

Scholarly Infrastructure (POSI). This transparent, consensus-driven approach ensures representation from across the academic community through the NaMeCo consortium and Content Board.

Digital Sovereignty: By federating existing repositories and CRIS systems (Themes 1-6), DURF counters dependence on commercial providers. The project creates public infrastructure that preserves institutional control over research data and outputs, strengthening academic freedom.

Open Access & FAIR Principles: Themes 3 and 5 directly increase the availability of full-text research outputs, while Theme 4 ensures their long-term preservation. Together, these make Dutch research more Findable, Accessible, Interoperable, and Reusable.

Transparency & Community Input: DURF implements monitoring across its themes (metadata quality, full-text coverage, preservation status) with public reporting, ensuring accountability. Theme 6's Portal development includes regular stakeholder needs assessments, guaranteeing user-centered design.

This comprehensive approach creates a robust, community-controlled ecosystem that advances Open Science in the Netherlands while ensuring equitable knowledge access.

Word count SEC33 (max. 300): 283

3.4 Access policy

DURF implements an "open by default" approach aligned with Open Science principles while respecting legal frameworks like copyright law, GDPR, and knowledge security policies.

Public Access (No Restrictions):

- Metadata from repositories and Netherlands Research Portal (Themes 2, 5, 6)
- Open access full-text publications (Themes 3, 4)
- Open-source software components and technical documentation
- Monitoring reports on metadata quality, full-text coverage, preservation and distribution status

Restricted Access:

- OpenAIRE PROVIDE metadata enrichment services for repository/CRIS managers
- Full-text capture tools for repository/CRIS managers
- Administrative dashboards for monitoring services and Portal (OpenAIRE CONNECT)
- Access requested through institutional channels or DURF's governance team
- Requests evaluated based on user role, affiliation, and data governance policies

All core services are provided free of charge. Value-added services may follow cost-recovery or membership models through the NaMeCo consortium (Theme 1).

Word count SEC34 (max. 150):130

3.5 (Inter)national ecosystem

DURF serves as a foundational layer within the Dutch and European Open Science infrastructure ecosystem, strategically connecting existing and developing resources.

National Integration: DURF's shared governance (Theme 1) and metadata standards (Theme 2) create cohesion among Dutch institutional repositories while complementing:

- **BROCCOLI** - DURF provides standardized metadata for research intelligence reporting
- **WijsNL** - Enhanced discoverability (Theme 5) supports public engagement
- **National Publication Platform** - Preservation mechanisms (Theme 4) complement Diamond OA infrastructure

- **PRC-made-easy** - Repository notification standard adoption (Theme 2) for preprint peer review events

International Integration:

- **OpenAIRE** - NaMeCo partnership (Theme 1) provides Dutch representation in European infrastructure
- **EOSC-nodes** - Metadata in OpenAIRE (Theme 2) enables dataset cataloguing for European Open Science Cloud
- **Global Discovery Systems** - Enhanced metadata (Theme 2) and distribution (Theme 5) feed into indexes and catalogues like OpenAlex, GoogleScholar, CORE, WorldCat, Wikidata, SemanticScholar, etc
- **AI & TDM Applications** - Increased full-text availability (Theme 3) supports initiatives like GPT-NL, Elicit, GlobalCampus.ai

DURF's strategy balances institutional autonomy with federated concerns through clear governance (Theme 1), international standards adherence (Theme 2), and strategic metadata distribution (Theme 5), creating resilience while enabling innovation.

Word count SEC35 (max. 200): 184

Section 4: Feasibility

4.1 Project plan

DURF implements a theme-based intervention approach to strengthen the existing Dutch Open Science infrastructure. Each theme addresses distinct yet interconnected aspects with clear goals, outcomes, activities, and timelines that contribute to our dual objectives of (1) sustainable long-term availability through resilience and redundancy, and (2) maximum exposure through discoverability and findability. Involved roles are mentioned in the next section, role-abbreviations are added to the activities.

In-kind contributions: collaboration partners will provide crucial in-kind support on strategic, tactical and operational level across the themes, from Library directors to Metadata specialists. Theme coordinators will coordinate these activities on a national scale.

Theme 1: Governance of the Federation and Netherlands Research Portal

Goal: A sustainable governance framework established for the Dutch federated research information ecosystem including parties maintaining Repository/CRIS systems, eDepot and OpenAIRE Graph.

Activities:

- Develop and secure signatures for a position paper on the shared information chain (Months 1-12)
- Establish NaMeCo (Dutch National Membership Consortium for OpenAIRE representation) (Months 1-12)
- Draft and finalize formal agreements on roles and responsibilities between SURF, NaMeCo institutions, KB National Library, publishers, and OpenAIRE (Months 1-18)
- Define legal structure for CC0 metadata influx (Month 6)
- Create a comprehensive governance framework for all project themes (Months 1-12)
- Organize annual National symposium and General Assembly for federation members (Months 12-48)
- Review and update governance framework to ensure post-project sustainability (Months 36-48)

Theme 2: Metadata Quality Improvement

Goal: Repository/CRIS systems have adopted the updated metadata- and exchange-standards for high-quality research metadata that comply with international guidelines and meet national requirements.

Activities:

- Form and formalize NL Research Information Content Board through EduStandaard (Months 1-3)
- Develop updated metadata application profile; translating current NL-DIDL-MODS requirements to OpenAIRE CERIF and DC guidelines (Months 3-12)
- Support repositories, CRIS systems, and KB eDepot in adopting the updated profile (Months 12-18)
- Monitor compliance with the new standard and share implementation best practices (Months 12-48)
- Develop proof of concept for enriching local metadata with OpenAIRE data broker (Months 12-24)
- Monitor usage of core entity PIDs (ROR, ORCiD, DOI) and promote local implementation (Months 12-48)
- Launch download statistics sharing pilot on OpenAIRE (Months 12-18)

Theme 3: Full Text Capture Enhancement

Goal: Comprehensive full-text availability in Dutch repository/CRIS systems for enhancing primarily preservation, and secondary text-mining, AI-usage and Taverne-mechanisms.

Activities:

- Establish baseline metrics and reporting system for full-text uptake (Months 1-6)
- Create inventory of existing tools and methods for full-text capture (Months 1-12)
- Develop and pilot a local full-text capture service with shareable code and practices (Months 12-24)
- Implement ecosystem-wide improvements to increase full-text availability (Months 24-48)

Theme 4: KB National Library e-Depot Archiving

Goal: Comprehensive preservation achieved of Dutch scientific output in the KB e-Depot.

Activities:

- Implement pull mechanism for metadata and full-text publications partly via OpenAIRE (Months 3-12)
- Archive and back up all Dutch CRIS and repository content at KB National Library e-Depot (Months 12-48)
- Establish monitoring system for preservation status of publications and metadata (Months 12-48)
- Update and maintain URN:NBN resolver functionality (Months 12-18)

Theme 5: Distribution & Discovery Optimization

Goal: Increase the visibility of Dutch research content in major international indexes.

Activities:

- Develop mappings and best practices for major indexes to improve Dutch research visibility (Months 1-12)
- Implement DOI-minting capabilities for grey literature in DURF repositories (Months 6-18)
- Create monitoring system for tracking DURF content visibility across major indexes (Months 12-48)

Theme 6: Portal Development and Enhancement

Goal: Deliver a fully-functional, user-centered Netherlands Research Portal that serves as the primary discovery point for Dutch research outputs.

Activities:

- Establish Netherlands Research Portal Steering Committee with rotating NaMeCo membership (Months 1, 25)
- Conduct regular stakeholder needs assessments (Months 6, 18, 30, 42)
- Create development roadmaps aligned with OpenAIRE Connect and project themes (Months 9, 21, 33, 45)
- Release quarterly portal updates with major versions annually (Months 12, 24, 36, 48)
- Enable SSO to OpenAIRE services PROVIDE, CONNECT, MONITOR with SURFconext (Month 9)

Project management, Community Management & Communication

Cross-cutting activities include quarterly coordination meetings across themes, biannual stakeholder reviews, and annual public reporting on key performance indicators at the National Federation Symposia to ensure cohesive development of this resilient infrastructure for Dutch Open Science.

Word count SEC 41 (max. 750): 679

4.2 Team composition

Name, surname	Affiliation	Expertise	Role/contributions
Maurice Vanderfeesten	Vrije Universiteit Amsterdam	General expert and strategic visionary	Project manager, Co-Lead Theme 1
Co-applicants			
Alastair Dunning	TU Delft	Repository governance & use	Coordinator Theme 1 – governance
Rutger de Jong	Universiteit Leiden	Subject librarian, Repository/CRIS manager	Coordinator Theme 2 – metadata quality Coordinator Theme 5 – distribution & discovery
Pascal Braak	Universiteit van Amsterdam	Open access specialist, coordinator Publication and Registration Services	Coordinator Theme 3 – full-text
Simone Kortekaas	KB, National Library	Information Specialist, Product owner eDepot	Coordinator Theme 4 – archiving
Naomi Whals	TU Delft	Product owner research services and CRIS systems	Coordinator Theme 6 – portal
Cristina Huidiu	Wageningen University and Research	Product development, Data engineering	Tech lead
Claudia de Visser	SURF	Project office management	Project assistant
Till Bey	SURF	Linked-data modeling	Information Architect
	SURF	Legal Expert	Legal Expert
	SURF	Communication Expert	Communication Expert
Third Parties			
Alessia Bardi	OpenAIRE	Product manager Open AIRE CONNECT	User Portal development
Paolo Manghi	OpenAIRE	CTO, Product manager OpenAIRE GRAPH	Graph information flow developments
Leonidas Pispiringas	OpenAIRE	Product manager OpenAIRE PROVIDE,BROKER,MONITOR	CRIS/Repo admin dashboard development
Cooperation partners (In-kind support)			
Sarah Coombs	Saxion Hogescholen	coordinator Digital Competence Center for Practice-oriented Research	contact*, representing Universities of Applied Sciences
Lieuwe Kool	Amsterdam Universitair Medisch Centrum	Library director	contact*, Representing University Medical Centers (NFU)
Mariëlle Prevoo	Universiteit Maastricht	Manager research support & development	contact*
Hubert Krekels	Wageningen University	Chief Open Science	contact*

	and Research		
Lucinda Jones	Erasmus Universiteit Rotterdam	Library Director	contact*
Alexey Pristupa	Vrije Universiteit Amsterdam	Head of department digital services and infrastructure	contact*
Inez Mekers	TU Eindhoven	Research information specialist	contact*
Daan Rutten	Tilburg University	Head research support	contact*
Wendy van Ginkel	Universiteit Twente	Head embedded information services	contact*
Mirjam Koreman	Radboud Universiteit Nijmegen	Senior functional manager research	contact*
Ingrid de Ruiter	Universiteit Utrecht	Information specialist	contact*
Wiebe van der Meer	Rijkuniversiteit Groningen	Functional manager Pure	contact*
Mellanie Geijen	Open Universiteit	Academic affairs	contact*
Emma Overmaat	Universteit voor Humanistiek	Research intelligence officer	contact*
Jacko Koster	Universiteit Leiden	Program manager data management	contact*

*) contacts organize the in-kind support within their own institution; Repository/CRIS Managers, Metadata Specialists, and Library directors and Heads of Research Support.

Word count SEC42 (max. 350): 350

4.3 Risk management

Risk	**Likelihood and impact**	**Risk mitigation strategy**
Name of the risk	*Likelihood: (low, medium, high)* *Impact: (low, medium, high)*	*Describe the measures which will be taken to mitigate the risk*
Low priority at directorate level for repository/CRIS improvement	Likelihood: Low, Impact: High	Regular communication on the benefits with senior stakeholder; with focus on the strategic advantage strengthening the infrastructure brings to Read & Publish negotiations.
Implementing changes at the CRIS systems for metadata harvesting, crawling and sharing usage statistics is limited by vendor	Likelihood: Medium, Impact: Medium	Lobby together and look for alternate ways
Priorities for the NL Research Portal such as an expert finder are lower at OpenAIRE	Likelihood: Low, Impact: High	Create strong links with OpenAIRE at start of project. Ensure ongoing co-development

Shortage of availability of local technical experts to implement recommendations, especially Theme 3	Likelihood: High, Impact: Medium	See what can be done at a single institution and rollout elsewhere together
Long-term existence of OpenAIRE and Netherlands Research Portal threatened by political environment	Likelihood: Low, Impact: High	Ensure all metadata is retrievable; document best practices related to Netherlands Research Portal so an alternative can be created

Word count SEC43 (max. 250): 190

4.4 Budget

Position	HOT scale	Institu-tion	Total FTE	Years active	Amount
Project Lead + Co-lead Theme 1	HOT 2.1 - 13	VUA	1,60	4	€ 212.464,00
Project Assistant	HOT 2.2 - 13	SURF	0,80	4	€ 126.828,00
Information Architect	HOT 2.2 - 16	SURF	0,40	2	€ 80.216,00
Legal Advisor	HOT 2.2 - 15	SURF	0,20	2	€ 37.398,00
Communication / Community advisor	HOT 2.2 - 13	SURF	0,20	4	€ 31.707,00
Coordinator Theme 1 - Governance	HOT 2.1 - 13	TUD	0,60	4	€ 79.674,00
Coordinator Theme 2 – Metadata quality	HOT 2.1 - 13	UL	0,60	4	€ 79.674,00
Coordinator Theme 3 – Full text	HOT 2.1 - 13	UvA	0,80	4	€ 106.232,00
Coordinator Theme 4 – Preservation	HOT 2.1 - 13	KB	0,80	4	€ 106.232,00
Coordinator Theme 5 – Dissemination	HOT 2.1 - 13	UL	0,60	4	€ 79.674,00
Coordinator Theme 6 – NL Portal	HOT 2.1 - 13	TUD	0,80	4	€ 106.232,00
Tech lead	HOT 2.1 - 13	WUR	0,70	4	€ 92.953,00

Material/IT Type	Description	Cost calculation	Total (€)
(international) travel and accommodation expenses incl. conference visit	National meetings, eg. NL Content Board, Governance board, Developer meetings, CRIS		€ 3.000,00
Software (components); only with open license	OpenAIRE BUNDLE + RPO monitors	12100x4=48400 BUNDLE | 2000x14=28000 RPO monitors	€ 76.400,00
Hardware	Running Monitor and reporting Services	SURF Research Cloud VM's (5000x4y)	€ 20.000,00
Software development costs (excl. Personnel costs)	Licensed for software development tools	400 packs x 4 organisations	€ 1.600,00
Training and courses	Universities to attend courses on metadata enrichment and full text capture. (eg. at JISC or OpenAIRE)	15 person x 1800	€ 27.000,00
knowledge dissemination costs	booklets on best practices, communication material		€ 18.000,00
national symposium/conference/workshop organised by the project itself;	National Symposium incl General Assembly each year	25000x4	€ 100.000,00
work performed by third parties	Development of the Monitors for reporting		€ 40.000,00
work performed by third parties	Legal support, eg. report on licencing and copyright of metadata and full text	300/h x 70 hours	€ 21.000,00
work performed by third parties	Further Development of NL Research Portal		€ 50.000,00

Total Personnel requested: *€ 1.139.284,00*
Total Material/IT requested: € 357.000,00
Total budget requested: € 1.496.284,00

4.5 Budget justification

Personnel Costs
The requested personnel budget primarily supports coordination roles that will mobilize and direct substantial in-kind contributions from participating institutions. Our theme coordinators (6.10 FTE total) will orchestrate the collaborative work of repository/CRIS managers, metadata specialists, library directors, and research support staff who will contribute their expertise through participation in governance meetings, metadata standard development, full-text capture improvements, and systems implementation.
Project management roles (2.40 FTE) will ensure cohesive execution across themes while specialized support (1.90 FTE) in information architecture, legal consultation, and technical leadership provides critical expertise to maximize the value of in-kind institutional contributions.
Without funded coordination, the substantial in-kind work pledged by participating institutions—including governance participation, metadata standard implementation, full-text acquisition workflows, and portal promotion—would lack the necessary structure for nationwide impact.

IT/Material Costs
Material costs directly enable collaboration between funded staff and in-kind contributors through:

- Meeting expenses (€15,000) supporting regular coordination with in-kind contributors
- Software components (€76,400) and infrastructure (€20,000) providing tools for in-kind participants to improve their systems
- Training (€27,000) to enhance institutional contributors' implementation capabilities
- Knowledge dissemination (€18,000) and annual symposiums (€100,000) to maximize in-kind participation
- Third-party services (€111,000) for specialized development beyond participant capacity

This budget strategically leverages funded coordination to mobilize extensive institutional in-kind contributions across all six themes. Repository/CRIS managers will implement standards and improve systems; metadata specialists will enhance quality and schema alignment; library directors will participate in governance and promote shared resources—all coordinated by the funded project team to create a cohesive, nationwide open science infrastructure.

Word count SEC45 (max. 300): 256

4.6 Impact plan

DURF will establish the Netherlands Research Portal as a comprehensive, trusted source of all Dutch research, generating impact across multiple user groups:

- **Researchers:** Enhanced visibility and preservation of their work, improved metrics on research dissemination and usage, and increased potential for collaboration. Activities include direct communication via UNL, KNAW, and institutional networks highlighting preservation and dissemination benefits.
- **Research institutions:** Strengthened digital sovereignty, reduced dependency on commercial platforms, and better insights into institutional outputs. Activities include governance participation and demonstrating enhanced visibility and preservation metrics.
- **Funders/Government:** Better oversight of securely preserved research outputs and increased ROI through wider dissemination. Activities include direct communication demonstrating enhanced visibility and preservation metrics.
- **Policymakers:** Comprehensive view of Dutch research landscape supporting evidence-based policy. Activities include tailored portal views and research trend reporting.
- **General public and journalists:** Democratized access to knowledge and improved science communication accuracy. Activities include KB's promotion through public library networks and targeted training for science communicators.
- **Small publishers and SMEs:** Access to preservation infrastructure and improved discovery of research. Activities include knowledge transfer events on eDepot integration and CC0/CC-BY licensed content capabilities.

Communication strategies will leverage existing networks with regular updates and annual symposia.

Word count SEC46 (max. 200): 198

Section 5: Sustainability and software management

Section 5.1: Sustainability plan

Long-term sustainability of the DURF is built into the project. The project creates strategic, operational and technical alignment across Dutch research institutions, thus sustaining the Netherlands Research Portal, and the federation of repository/CRIS systems that underpin it.

Strategic: This proposal is submitted on behalf of all universities; a pre-proposal has unanimously been endorsed by the university rectors. It is seen as important for all Dutch knowledge institutions, fully in line with previously established national ambitions to make a shared national infrastructure for Open Science. This alignment will be further strengthened by the shared creation of a position paper at the start of the project. This will allow partners in the federation to define and agree upon the shared direction. The related governance frameworks (with the KB eDepot, OpenAIRE) will also help channel and extend the project at the end of the four years.

Operational: Once that alignment is established, it can easily be embedded in the day to day working practice of existing staff at local level. Existing national groups (such as run by the UKB, the association of university libraries or EduStandaard) will be used to maintain that alignment. It does not require new staff. Sustainability will require approximately 0.1-0.2 FTE per institution allocated from existing repository and CRIS managers' responsibilities, with coordinating activities absorbed within standard UKB working group operations.

Technical: the project does not build a single technical infrastructure with a single point of failure. Rather it leverages existing components and standards (repositories, CRISs, OpenAIRE, DOIs and URN) and creates the necessary links between them. Schema and vocabularies used for metadata will be open, as will the metadata itself, allowing for it to be easily moved between systems as required. Ongoing technical maintenance will require minimal server resources (estimated at €10.000-20.000 annually) for monitoring tools and the portal, distributed across the federation according to the governance framework.

Financial: Contributions to licenses that cover the operation costs at OpenAIRE for their delivered services will be shared among the federation members, in line with the strategic mandate on board level. Resources required at the institutions to keep their repository/CRIS systems and eDepot operational and aligned with the agreed standards, will be covered by in-kind contributions as it is embedded in the data-to-day working practice. The federation will explore additional sustainability mechanisms including a potential membership model for smaller institutions wishing to join later, and integration with existing Dutch Research Cloud infrastructure funding to optimize shared costs.

Word count SEC51 (450): 407

Section 5.2: Software management plan

1. Please provide a brief description of your software, stating its purpose and intended audience.

Our project will develop several software components designed to enhance and monitor research information systems. These tools target repository managers, research administrators, and institutions seeking to improve their research information infrastructure compliance and visibility.

- Monitor on metadata compliancy: Validates Repository/CRIS systems against the OpenAIRE CERIF standard and Dutch Application profile requirements.
- Monitor on core PID comprehensiveness: Identifies records with missing persistent identifiers (DOIs, ORCIDs, RORs, GrantIDs).
- Monitor on full-text comprehensiveness: Detects records without full text and verifies link integrity.
- Monitor on preservation status: Confirms full text storage in eDepot.
- Monitor on Visibility: Assesses repository accessibility to web crawlers and indexes through robots.txt, sitemap.xml, and schema.org metadata.
- Full-text capture service: Provides institutional automation for capturing and storing full-text documents.
- OpenAIRE CONNECT portal improvements: Enhances functionality based on user requirements studies. This target's the audience of the general public, journalist, policy makers and others seeking information about research and researchers from the Netherlands.

2. How will you manage versioning of your software?

We will implement a comprehensive versioning strategy using Git:
- All code will be maintained in dedicated Git repositories
- Semantic versioning (MAJOR.MINOR.PATCH) will be employed for all releases
- Release branches will be created for stable versions
- Tags will mark specific release points
- A CHANGELOG.md will document version-specific modifications

3. How will you make your software publicly available? What licence will your software have?

We will ensure maximum accessibility and reuse of our software through:
- Publishing monitors and capture service code on GitHub.com under public repositories
- Hosting OpenAIRE code in their self-hosted Git repository at https://code-repo.d4science.org/
- Applying the MIT License to all original code to enable broad reuse while providing attribution
- Clearly documenting any third-party components and their respective licenses

4. How will users of your software be able to cite your software?

To ensure proper attribution and tracking of research impact, we will:
- Include a Citation File Format (CFF) file in each code repository
- Automatically synchronize releases to Zenodo to obtain DOIs for each significant version
- Provide recommended citation formats in both human and machine-readable formats
- Include citation information in documentation and user interfaces where applicable

5. How will your software be documented? Please describe your plans for: user documentation, documentation for future developers and for installation requirements. Please provide links to documentation if already available.

Each software component will include comprehensive documentation structured as follows:
A README.md with:
- Executive summary (TL;DR) for quick orientation
- Prerequisites and installation instructions
- Usage guidelines with practical examples
- Contribution information

Additional documentation will include:
- Detailed API documentation generated from code comments
- Architectural overview diagrams for complex components
- Step-by-step tutorials for common use cases
- Troubleshooting guides addressing potential issues

6. How will contribution guidelines and governance structure of your software be documented?

Each code repository will include a CONTRIBUTING.md file that outlines the process for submitting contributions, including code style guidelines, pull request procedures, and the code review process. A CODE_OF_CONDUCT.md will also be included to establish community standards for collaboration.
The governance structure will be documented in a GOVERNANCE.md file that describes the decision-making process, roles and responsibilities within the project, and how maintainers are selected. For the OpenAIRE CONNECT portal improvements, we will follow the existing OpenAIRE governance model while documenting any project-specific adaptations.

7. How will your software be tested?

For the monitoring tools, we will include a set of sample data and expected outputs to verify correct operation across different scenarios.

8. How will you check that it respects the licences of libraries and dependencies it uses?

We will implement a dependency scanning process.

For the OpenAIRE components, we will follow their established dependency management protocols while ensuring any new dependencies comply with their licensing requirements.

9. How will your software be packaged and distributed?

The monitoring tools and full-text capture service will be packaged as docker containers for easy deployment in various environments Documentation will include clear installation instructions for each distribution method, with step-by-step guides for common deployment scenarios.

The OpenAIRE CONNECT portal improvements will follow the existing distribution mechanisms used by OpenAIRE, ensuring compatibility with their infrastructure.

10. What level of support will be provided for users of the software and how will this support be organised?

We will provide multi-tiered support for the software, such as self-service support through comprehensive documentation, including FAQs and troubleshooting guides, community support through GitHub Issues for bug reports and feature request, and direct support for institutional partners implementing the monitors and capture service during the project period.

For the OpenAIRE CONNECT portal improvements, we will integrate with their existing support channels while providing specialized assistance for the new features developed by our project.

11. How do you plan to ensure long term maintenance of your software?

To ensure long-term sustainability of the software the documentation will be designed to facilitate future maintenance and onboarding of new contributors. Also we will seek to build a community of users and contributors to support ongoing development.

For the OpenAIRE components, we will coordinate with their team to ensure our improvements are integrated into their core maintenance workflows.

We will also explore potential partnerships with organizations like the Netherlands eScience Center or SURF to provide ongoing maintenance support for critical components. The software will be archived in Zenodo with each release, ensuring long-term availability regardless of repository status.

Section 6: References

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Section 7: 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.
- I have submitted a pre-proposal for this Call for proposals in ISAAC.