



The role of EOSC and trustworthy repositories in ensuring data sovereignty, inclusivity, trust and transparency in FAIR access to research outputs

euroCRIS Spring 2025 membership meeting

Roxanne Wyns

Innovation manager LIBIS – KU Leuven Libraries / EOSC-A director



Why we need our own research cloud



Freedom to learn ...

An export control strategy that exports democratic AI: For countries seeking access to American AI, we propose a strategy that would apply a commercial growth lens—both Total and Serviceable Addressable Markets—to proactively promote the global adoption of American AI systems and with them, the freedoms they create. At the same time, the strategy would use export controls to protect America's AI lead, including by making updates to the AI diffusion rule.

A copyright strategy that promotes the freedom to learn: America's robust, balanced intellectual property system has long been key to our global leadership on innovation. We propose a copyright strategy that would extend the system's role into the Intelligence Age by protecting the rights and interests of content creators while also protecting America's AI leadership and national security. The federal government can both secure Americans' freedom to learn from AI, and avoid forfeiting our AI lead to the PRC by preserving American AI models' ability to learn from copyrighted material.

Infrastructure opportunity to drive growth: Sustaining America's necessary infrastructure to compete with the PRC and its propose policies to seize this unmissable opportunity to cross our country, creating and supporting hundreds of jobs, modernizing our energy grid, and preparing the pillar of any country's AI infrastructure.

ars TECHNICA AI BIZ & IT CARS CULTURE GAMING HEALTH POLICY SCIENCE SECURITY SPACE TECH FORUM SUBSCRIBE

OpenAI declares AI race “over” if training on copyrighted works isn’t fair use

National security hinges on unfettered access to AI training data, OpenAI says.

ASHLEY BELANGER · 13 MAR 2025 17:20 · 473

→ Sam Altman, chief of the AI Action Summit

Credit: Bloomberg / Getty Images

OpenAI is hoping that Donald Trump's AI Action Plan, due out this July, will settle copyright debates by declaring AI training fair use—paving the way for AI companies' unfettered access to training data that OpenAI claims is critical to defeat China in the AI race.



Donald Trump and Sam Altman. © AFP

TECHNOCRAAT

OpenAI eist het recht om alles op het internet gratis te gebruiken

OpenAI eist bij Donald Trump het “freedom to learn” op. Lees: het recht om zich de volledige inhoud van het internet te blijven toe-eigenen voor het trainen van zijn AI-modellen. Die het dan aan ons kan verkopen.

Deelname Debat

...or copyright infringement

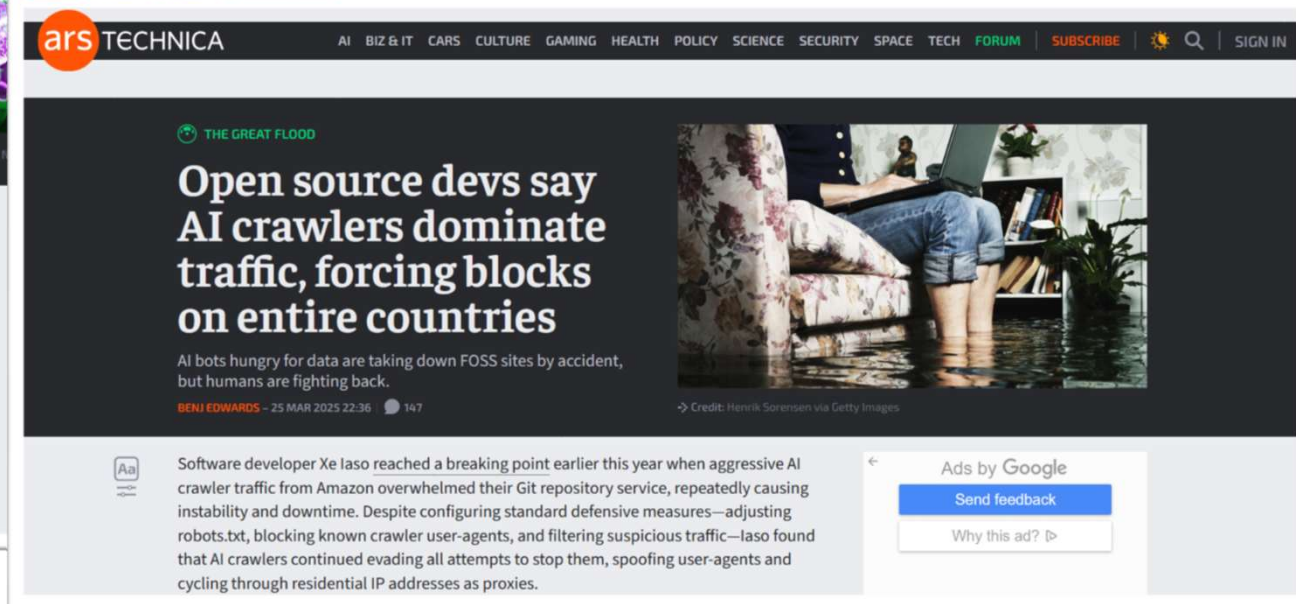


Freedom to learn ...



On Tuesday, the Wikimedia Foundation announced that relentless AI scraping is putting strain on Wikipedia's servers. Automated bots seeking AI model training data for LLMs have been vacuuming up terabytes of data, growing the foundation's bandwidth used for downloading multimedia content by 50 percent since January 2024. It's a scenario familiar across the free and open source software (FOSS) community, as we've previously detailed.

The Foundation hosts not only Wikipedia but also platforms like Wikimedia Commons, which offers 144 million media files under open licenses. For decades, this content has powered everything from search results to school projects. But since early 2024, AI companies have dramatically increased automated scraping through direct crawling, APIs, and bulk downloads to feed their hungry AI models. This exponential growth in non-human traffic has imposed steep technical and financial costs—often without the attribution that helps sustain Wikimedia's volunteer ecosystem.



Free ... for now

De Standaard

DIGIMETER

De opmars is niet te stoppen: zeven op de tien Vlaamse jongeren gebruiken AI

Voor Vlaamse jongeren is ChatGPT een deel van hun leven geworden – zeker als ze nog studeren. De jaarlijkse Digimeter constateert dat de opmars van generatieve AI allesbehalve gestopt is.

Dominique Deckmyn

11 maart 2025 om 03:00

 Delen

Voor veruit de meeste jongeren is ChatGPT vooral een hulpje bij hun studies. De bevraging gaat er niet dieper op in, maar het gaat onder meer om uitleg vragen over de onderwerpen die ze tijdens de les niet goed begrepen hebben. En uiteraard ook om “hulp” bij het schrijven van opdrachten. De jongeren lijken zich daarbij goed bewust van de neiging van AI-chatbots om wel eens te ‘hallucineren’: 61% controleert naar eigen zeggen de juistheid van het AI-resultaat met andere bronnen (oudere gebruikers doen dat veel minder vaak).

Opvallend: ruim een op acht jongeren gebruikt de betaalversie van zo’n AI-systeem, zoals ChatGPT Plus, dat nochtans zo’n 20 euro per maand kost. Die ‘plus’-versies van generatieve AI-systemen leveren vaak beter geschreven teksten af en stellen geen (of minder) beperkingen op hoeveel vragen je mag stellen.

... is not equal

All of our Academic APIs were finally removed

Academic Research



Maziyar_sh

Jun 2023

Jun 2023

1 / 14
Jun 2023

The Academic APIs are no longer available. About 10 minutes ago they were removed from all the accounts we had with Academic APIs available.

"detail": "When authenticating requests to the Twitter API v2 endpoints, you must



Tweet



Elon Musk @elonmusk · 1 jul.

Rate limits increasing soon to 8000 for verified, 800 for unverified & 400 for new unverified



Elon Musk @elonmusk · 1 jul.

To address extreme levels of data scraping & system manipulation, we've applied the following temporary limits:

- Verified accounts are limited to reading 6000 posts/day
- Unverified accounts to 600 posts/day
- New unverified accounts to 300/day

89,1K 139,6K 206,7K 134,2 mln.



Elon Musk @elonmusk

Abonneren

Now to 10k, 1k & 0.5k

11:49 p.m. · 1 jul. 2023 · 35 mln. Weergaven

15,1K Retweets 39K Geciteerd 65K Vind-ik-leuks 1.639 Bladwijzers



Help Center

Search help articles...



Using Facebook



Login, Recovery and Security



Managing Your Account



Privacy and Safety



Policies and Reporting

What are we doing to prevent unauthorized scraping on our products

Because scrapers often mimic the ways that people use our products legitimately, we'll never be able to fully prevent all scraping without harming people's ability to use our apps and websites the way they enjoy. But we have a dedicated External Data Misuse (EDM) team that works to make it harder and more costly for scrapers to gather data from our services or profit from it. This team:

- Consists of data scientists, analysts, and engineers focused on our efforts to detect, block, and deter scraping.
- Works to keep unauthorized scraped data from being shared online.
- Works with responsible hosting vendors to get data sets taken offline.

The EDM team makes unauthorized scraping harder and less attractive to scrapers by doing a number of things, including:

- Implementing technical mitigations against scraping:
 - Rate limits cap the number of times anyone can interact with our products in a given amount of time.
 - Data limits keep people from getting more data than they should need to use our products normally.
 - Request blocking through pattern recognition. We look for patterns in activity and behavior that are typically associated with automated computer activity in order to block them automatically.
- Scraping enforcements and investigations:
 - We actively investigate suspected scrapers to learn more about what they're doing and use that information to make our systems stronger.



LIBIS

KU LEUVEN

<https://devcommunity.x.com/t/all-of-our-academic-apis-were-finally-removed/197249>

<https://www.facebook.com/help/463983701520800>

<https://twitter.com/elonmusk/status/1675260424109928449>

<https://www.reuters.com/technology/musk-says-twitter-applies-temporary-limit-address-data-scraping-system-2023-07-01/>

Data sovereignty

According to the International Data Spaces Association

Control over data

- Data sovereignty ensures that organizations, governments, and individuals have **control** over their data. This control allows them to self-determine how their data is collected, stored, shared, and used by others.

Innovation and trust

- In a data-driven economy, **trust** is essential for fostering **innovation** and encouraging participation in data-sharing ecosystems. By establishing data sovereignty and enforcing rules for data management, such as data usage policies and contracts, organizations can create an environment of trust and reliability.

Interoperability and collaboration

- Data sovereignty promotes **interoperability** among participants in data spaces. By adhering to common technical standards, organizations can share data seamlessly and **collaborate** effectively across different platforms and domains.

Data sovereignty

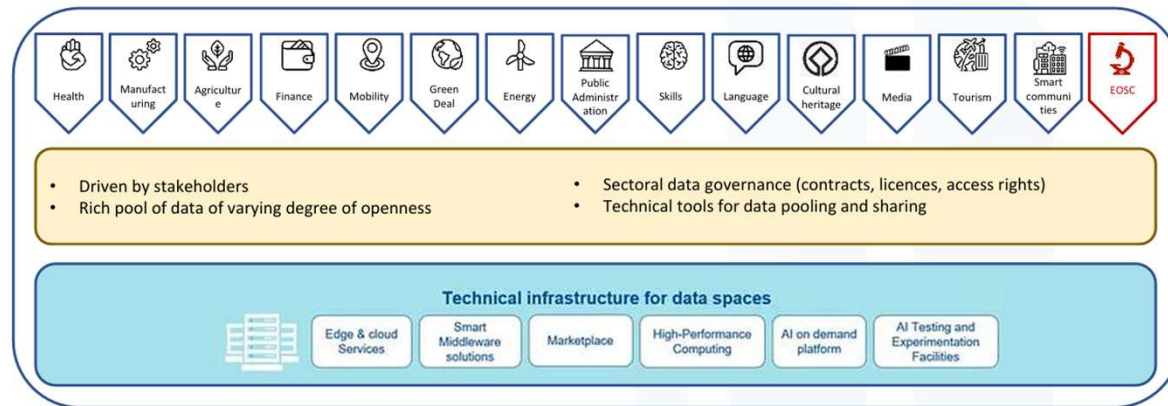
According to the US government



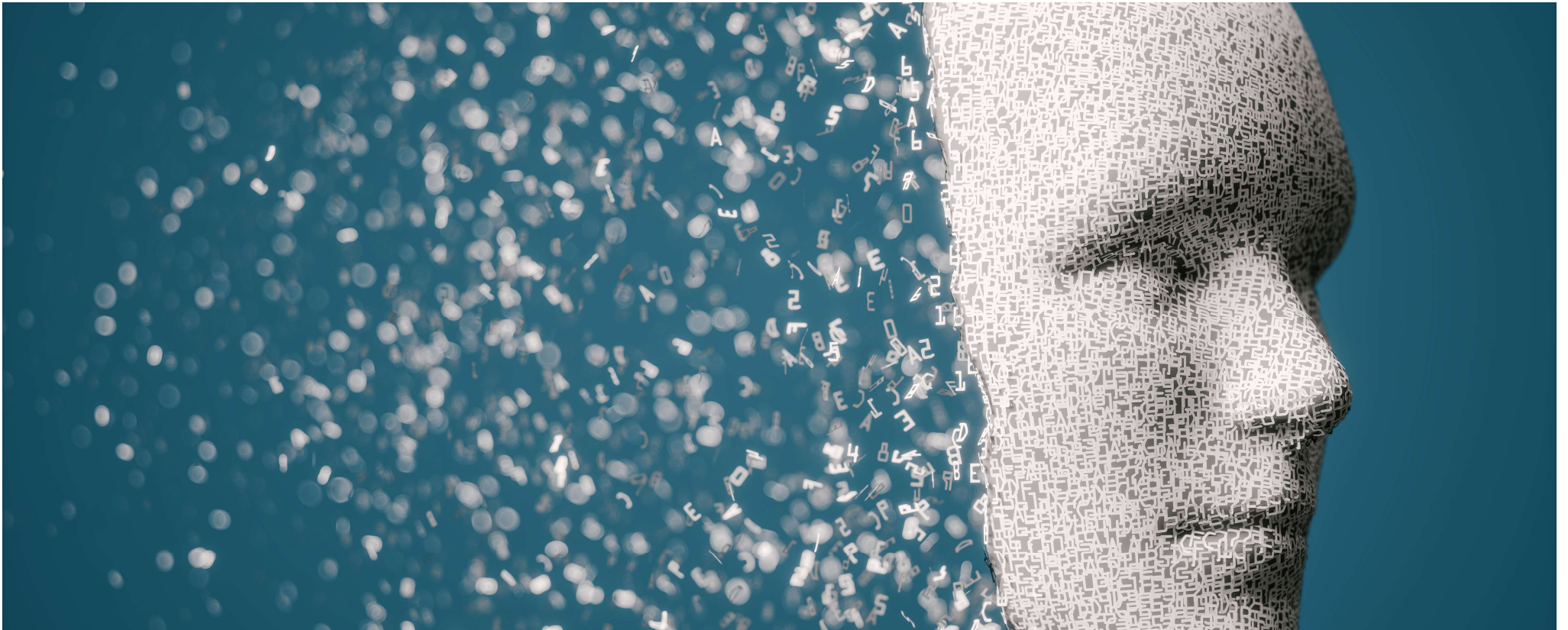
The screenshot shows the Wikipedia article titled "2025 United States government online resource removals". The page layout includes a top navigation bar with the Wikipedia logo, a search bar, and a language selector. On the left, there is a table of contents with links to "Background", "Removed and modified content", "CDC website", "Science and research websites", "Justice and crime websites", "Healthcare and social services websites", "Other websites", "Datasets", "Legal responses", "Reactions", "References", "Further reading", and "External links". The main content area starts with a summary: "From Wikipedia, the free encyclopedia". The article text describes the removals of web pages and datasets by the US government in January 2025, following executive orders from President Donald Trump's administration. It mentions that over 8,000 web pages and approximately 3,000 datasets were removed or modified, primarily affecting content related to diversity, equity, and inclusion (DEI) initiatives, gender identity, public health research, environmental policy, and various social programs. Major affected agencies include the Centers for Disease Control and Prevention, which saw over 3,000 pages altered or removed, and the Census Bureau, which removed about 3,000 pages of research materials. The article notes that while some content was later restored, the modifications represented significant changes to federal government data accessibility and sparked legal challenges from healthcare advocacy groups. A "Background" section follows, discussing the sharing of open data by US government agencies and the challenges of dataset deletion and management. It cites sources [1] through [4] regarding the difficulty of determining when content deletions occur and the significance of removals. The article concludes with a sentence about the establishment of Data.gov in 2009 to improve public access to high-value, machine-readable datasets generated by the Executive

Europe's plan for data sovereignty

- The European strategy for data aims at creating a single market for data that will ensure Europe's global competitiveness and data sovereignty.
- This will lead to the creation of Common European Data Spaces.
- They will ensure that more data becomes available for use in the economy and society, while keeping the companies and individuals who generate the data in control.



The role of EOSC



Shaping the future of EOSC and the EOSC Federation

EOSC as a flagship policy initiative contributing to the EU's strategic ambitions

- Strengthen European digital and data sovereignty
- Enhance security and trust in research data management
- Boost European research productivity and innovation
- Advance social equity and inclusivity
- Support European leadership in artificial intelligence
- Strengthen research infrastructure and interoperability
- Address grand societal challenges

Building the EOSC Federation

The vision for EOSC is to put in place a **system in Europe to find and access data and services for research and innovation**. This is to help researchers store, share, process, analyse and reuse FAIR research outputs within and across disciplines and borders.

The deployment of a network between data repositories and services will be instrumental for Open Science to progress in Europe. For this, the EOSC **Federation of nodes** is being created.

The ongoing **build-up phase** is the first phase of development of an operational EOSC Federation.

EOSC EU Node – Services and OA-KG



EOSC EU Node services

European Commission

European Open Science Cloud - EU Node

Home About Services Resource Hub Support Contributors News & Events User Space

Home > Publications > Prospects for transformative media in a transcultural society: Drivers and barriers in media policy, production and research

PUBLICATION ARTICLE, JOURNAL OPEN ACCESS

Prospects for transformative media in a transcultural society: Drivers and barriers in media policy, production and research

Authors: d'Haenens, Leen

Publishers: International Communication Gazette, Lirias

Year: 2011 | Views: 0 | Downloads: 0 | Citations: 1

Cite

European Commission

European Open Science Cloud - EU Node

Home About Services Resource Hub Support Contributors News & Events User Space

Home > Data > A reference database of wind-farm large-eddy simulations for parametrizing effects of blockage and gravity waves

DATA DATASET OPEN ACCESS

A reference database of wind-farm large-eddy simulations for parametrizing effects of blockage and gravity waves

Authors: Lanzilao, Luca; Meyers, Johan; Johan Meyers, ; Luca Lanzilao,

Publishers: Flemish Research Information Space, KU Leuven RDR

Year: 2023 | Views: 0 | Downloads: 0 | Citations: 0

Cite

Candidate Nodes



The organisations representing the 13 Candidate EOSC Nodes

Candidate Nodes

Slide by EOSC-A

 First Wave Nodes						
	Node Number	Node Name	Node Type (broadly)	focus area	Date of Presentation	Project charter
	0	EU Node	European	MS/AC	EOSC symposium Oct'24 & winter school Jan'25	😊
	1	Blue Cloud	thematic	marine science	1/29/2025	😊
	2	Finland Node	national	Finland	1/29/2025	😊
	3	BBMRI	thematic	life sciences	1/30/2025	😊
	4	NCN	national	Poland	1/31/2025	😊
	5	CERN	institutional	physics	2/3/2025	😊
	6	ESRF_PaNOsc	thematic	physics	2/3/2025	😊
	7	EUDAT	e-infrastructure	data management	2/3/2025	😊
	8	Data-Terra (CNRS)	thematic/national/e-infrastructure	earth science (France)	2/4/2025	😊
	9	ICSC	national	Italy	2/4/2025	😊
	10	NFDI	national	Germany	2/4/2025	😊
	11	CVTI SR	national/e-infrastructure	Slovakia	2/5/2025	😊
	12	LSRN	thematic	life sciences	2/5/2025	😊
	13	SURF	national	Netherlands	2/5/2025	😊

Resources by candidate nodes (build up phase)

- Data transfer
- Discovery
- Domain analytics
- PID generators
- PID resolvers
- VRE
- Training catalogue
- Storage
- Semantic int. tools
- Reference datasets
- Compute
- ...

Slide by EOSC-A



Resource Types To Be Onboarded

Most are "general purpose", some are domain specific. * means secure/reliable

Node	access/usage control	tool	agenda management	compliance assessment	compute	data transfer*	discovery	domain analytics	federated discovery	PID generation	PID resolvers	publish	RDM tools	reference data sets	repository	semantic/interoperability tools	storage	training catalogue	TFRE	VRE	Core Services	data transfer	(blank)
01-Blue Cloud					1				1				1	1		1	1		3	1			
02-Finland								1					1	3	1								
03-BBMRI	1						1	1															
04-NCN					1			1						1	1	1							
05-CERN			1				1							3					1	1			
06-ESRF_PaNOOSC						1		2	2						1				1	1			
07-EUDAT	1		1		1					1	1	1			2								
08-DataTerra								1						1			1		1				
09-ICSC Fdn			1		1			1						2		1	1	1	1	1			
10-NFDI																							
11-CVTI SR																							
12-LSRN	1												1										1
13-SURF					1					1				1	1		1		1			1	1
Grand Total	3	2	1		4	2	2	7	3	2	1	1	3	12	6	3	4	1	8	4	1	1	1



Federating capabilities (build up phase)

- Compute
- File sync & share
- Storage
- Notebooks
- Harvesting into OA-KG
- Onboarding to resource hub
- Credit/order management
- Monitoring
- Accounting
- EOSC AAI
- Helpdesk
- ...

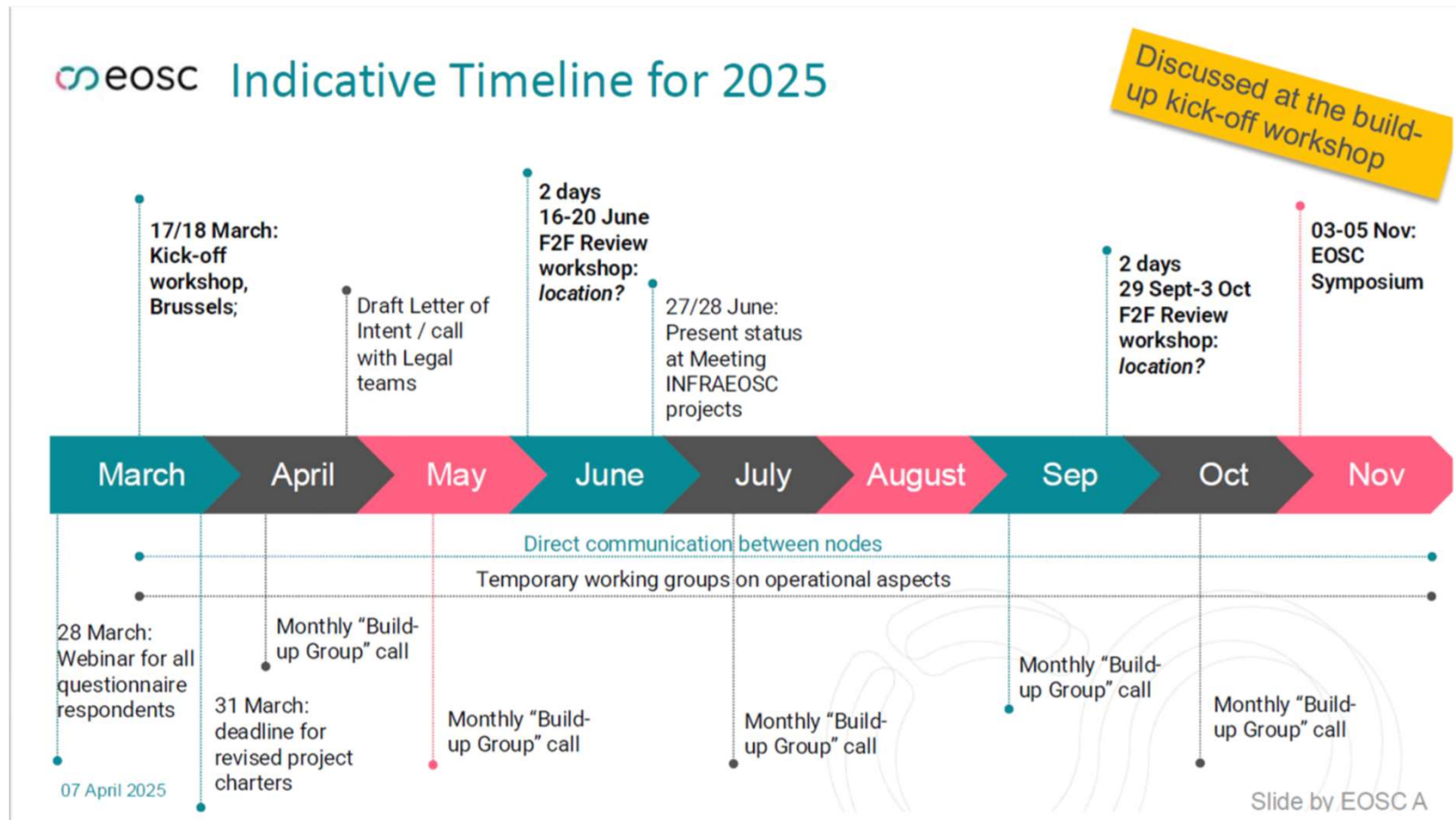
Slide by EOSC-A

EU Node Federating Capabilities Required

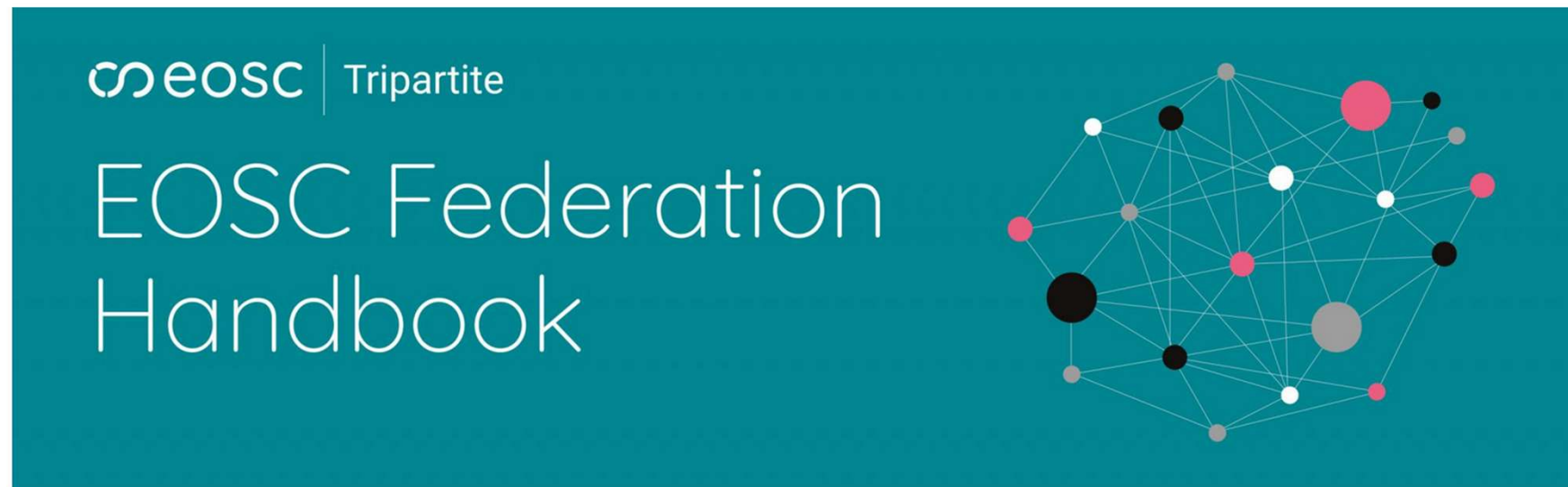
Expectation that EU Node's Federating Capabilities will be available for EOSC Nodes

Node	Accounting	AWM	Credit/Order Management	EOSC AAI	Harvesting into OA-KG	Helpdesk	Lot 2 interactive notebooks	Lot 2 storage	Lot 3 File Synchron & Share	Onboarding to Resource Hub	SMS (FTSM)	Lot 3 compute	Monitoring
01-Blue Cloud	1			1		1	1		1			1	1
02-Finland	1			1		1				1			1
03-BBMRI	1			1		1	1	1				2	1
04-NCN		1		1		1	1				1		1
05-CERN	1			1		1	1		1			1	1
06-ESRF_PaNOOSC				1	1								
07-EUDAT	1	1	1	1		1							1
08-DataTerra	1			1	1						1	1	1
09-ICSC Fdn	1			1	1	1				1			1
10-NFDI				1							1		
11-CVTI SR				1									
12-LSRN													
13-SURF													
Grand Total	7	2	1	11	3	7	4	1	2	2	3	5	8

Timeline

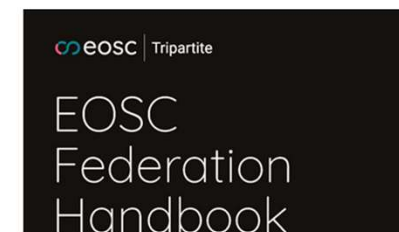


The federation build up phase, a step-by-step process involving many stakeholders



The [EOSC Federation Handbook](#) provides an overview of the organisational and operational structure, and technical characteristics, of the EOSC Federation.

The Handbook aims to serve as a practical guide for organisations that are interested in making their resources available within and across the EOSC Federation. Such organisations can achieve this objective by creating and operating an “EOSC Node”, and “enroling” it as part of the EOSC Federation, and/or by “onboarding” their resources in one or more EOSC Nodes operated by other organisations.



The role of trustworthy repositories and archives

REPOSITORIES:

Key Infrastructure For
Maintaining European
Research Excellence

Action Plan for Open Repositories in Europe: IMPACT-REPO (by LIBER, OpenAIRE, SPARC Europe, and COAR)

The role of trustworthy repositories and archives

“In an era where AI is reshaping research and knowledge discovery, repositories play a key strategic role as curated collections of an institution’s intellectual production, ensuring visibility, integrity, and trustworthiness of research outputs.”

The outcome of the community consultation in autumn of 2024 resulted in four narratives that articulate the growing strategic value of repositories in Europe:

- Impact
- Inclusiveness
- Trust
- Innovation

Building the Research Graph

- More **interconnected resources** (publications, projects, data, software ...)
- Will increase **Reuse** which will in turn increase **Impact, Inclusiveness, Trust, Innovation**



Building the Research Graph

The screenshot displays the FRIS Researchportal.org website. At the top, the header includes 'Flanders' and 'DEPARTMENT EWI' on the left, and 'CONTACT US' on the right. The main navigation bar is yellow and contains links for 'HOME', 'ABOUT FRIS', 'PARTNERS', 'FIGURES', 'CLASSIFICATIONS', and 'NEWS', along with social media icons for Twitter and LinkedIn. The FRIS logo and 'Researchportal.org' are prominently displayed. A search bar is located below the navigation bar. The central area features a grid of research categories with icons and counts: 'All results' (802747), 'Researchers' (45281), 'Organisations' (2316), 'Projects' (73745), 'Publications' (671325), 'Patents' (6169), 'Infrastructure' (626), and 'Datasets' (3285). A 'Find expertise' button is also present. Below the grid, a 'Back to previous page' link is visible. The researcher profile for 'Rianne Janssen' is shown at the bottom left. A 'REPORT ERROR' button is located at the bottom right, with a message: 'Do you see incorrect information? Please notify us!'. The KU LEUVEN logo is visible in the bottom right corner of the website.

Building the Research Graph

Rianne Janssen

Disciplines: Education curriculum, Education systems, General pedagogical and educational sciences, Specialist studies in education, Other pedagogical and educational sciences

AFFILIATIONS

- [Educational Effectiveness and Evaluation](#) (Research group)
Responsible
From 1 Sep 2019 → Today
[KU Leuven](#)
- [Educational Effectiveness and Evaluation](#) (Research group)
Member
From 1 Aug 2011 → Today
[KU Leuven](#)
- [Education and Training](#) (Research unit)
Member
From 1 Aug 2010 → 31 Jul 2011
[KU Leuven](#)

PROJECTS 1 - 10 of 18

- [LIVO – KU Leuven Educational Research Institute](#)
From 1 Jul 2024 → Today
Funding: BOF - research organisations
• Quick feedback about the Flemish tests

RESEARCHERS

- [Rianne Janssen](#) (Promoter)
[Educational Effectiveness and Evaluation](#)
Duration: 1 Jun 2021 → 3 Jul 2023
- [Jan Vanhoof](#) (Promoter)
Duration: 1 Jun 2021 → 3 Jul 2023
- [Evelyn Goffin](#) (Fellow)
[Educational Effectiveness and Evaluation](#)
Duration: 1 Jun 2021 → 3 Jul 2023

PROJECT PARTNERS

- [Educational Effectiveness and Evaluation](#) (Research group)
From 1 Jun 2021 → 3 Jul 2023
[KU Leuven](#)

FUNDING 1 - 1 of 1 results

- **Funding:** Own budget, for example: patrimony, inscription fees, gifts (Principal funding)

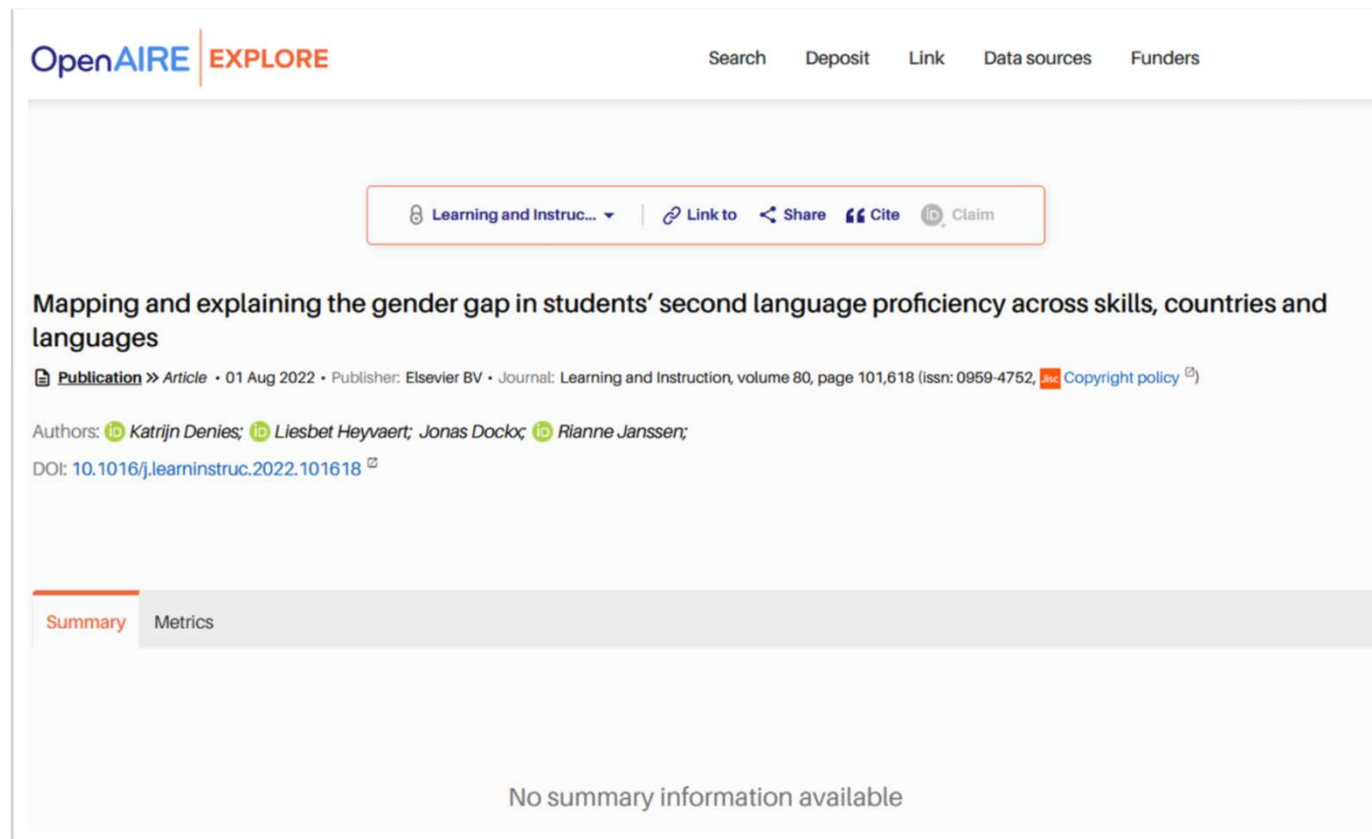
PUBLICATIONS 1 - 1 of 1

- [From sensemaking to school improvement? Exploring educational professionals' use of school performance feedback](#) (2023)
Authors: [Evelyn Goffin](#), [Rianne Janssen](#)

Building the Research Graph

The screenshot displays the OpenAIRE EXPLORE search interface. At the top, the logo 'OpenAIRE EXPLORE' is on the left, and navigation links 'Search', 'Deposit', 'Link', 'Data sources', and 'Funders' are in the center. A 'Sign in' link is on the right. Below the navigation bar, there's a search area with a blue background. On the left, it says 'Advanced search in' followed by a dropdown menu set to 'Research products'. On the right, there's a 'Simple Search' link. Below this, a search form is visible with two columns: 'SEARCHING FIELDS' and 'TERMS'. In the 'SEARCHING FIELDS' column, 'Author ORCID' is selected. In the 'TERMS' column, the value '0000-0001-5472-5494' is entered. A plus sign button is to the right of the terms input. Below the search form is a dark blue bar with a magnifying glass icon, the text 'SEARCH', and a right arrow. Below the search area, the page is divided into three sections. On the left is the 'Filters' section, which includes an 'Access' subsection with three checkboxes: 'Open Access', 'Closed Access', and 'Restricted'. In the middle, it shows '92 Research Products'. Below this, a specific result is highlighted: 'Item position effects in listening but not in reading in the European Survey of Language Competences'. Below the title, it says 'Publication » Article • 2020 • Belgium • Publisher: Springer Science and Business Media LLC • Funded by: EC | OCCAM'. At the bottom, it lists authors: 'Authors: Andrés Christiansen; Rianne Janssen;'. On the right, there's a 'Sort by Relevance' dropdown menu, a download icon, and a 'HELP' button with an envelope icon.

Building the Research Graph



The screenshot displays the OpenAIRE EXPLORE web interface. At the top, the logo 'OpenAIRE EXPLORE' is on the left, and navigation links 'Search', 'Deposit', 'Link', 'Data sources', and 'Funders' are on the right. Below the navigation bar is a search bar containing the text 'Learning and Instruc...'. To the right of the search bar are icons for 'Link to', 'Share', 'Cite', and 'Claim'. The main content area features the title 'Mapping and explaining the gender gap in students' second language proficiency across skills, countries and languages'. Below the title, it indicates the publication details: 'Publication >> Article • 01 Aug 2022 • Publisher: Elsevier BV • Journal: Learning and Instruction, volume 80, page 101,618 (issn: 0959-4752, Copyright policy)'. The authors listed are 'Katrijn Denies', 'Liesbet Heyvaert', 'Jonas Dockx', and 'Rianne Janssen', each with an ORCID icon. The DOI is '10.1016/j.learninstruc.2022.101618'. At the bottom, there are two tabs: 'Summary' (highlighted in orange) and 'Metrics'. The 'Summary' tab is currently selected, but it displays the message 'No summary information available'.

Building the Research Graph



The screenshot displays the OpenAIRE EXPLORE web interface. At the top, the 'OpenAIRE EXPLORE' logo is on the left, and navigation links for 'Search', 'Deposit', 'Link', 'Data sources', and 'Funders' are on the right. The main content area features the title 'Re-identification keys for datasets National Assessment in Flanders between 2002 and 2022'. Below the title, it indicates the record is a 'Research Data' dataset, deposited on '01 Jan 2023' in 'Belgium' by the publisher 'KU Leuven RDR'. The authors are listed as 'Centre of Educational Effectiveness and Evaluation' and 'Janssen, Rianne'. The DOI is '10.48804/da9wic'. A tabbed interface below the metadata shows 'Summary' as the active tab, with 'Subjects' and 'Metrics' as options. The 'Abstract' section contains two paragraphs: one in English describing the creation of FAIR datasets for national assessments in Flanders between 2002 and 2022, and another in Dutch providing the same information. At the bottom, the 'Country' is listed as 'Belgium'.

OpenAIRE EXPLORE

Search Deposit Link Data sources Funders

Re-identification keys for datasets National Assessment in Flanders between 2002 and 2022

 **Research Data** >> Dataset • 01 Jan 2023 • Belgium • Publisher: KU Leuven RDR

Authors: Centre of Educational Effectiveness and Evaluation;  Janssen, Rianne;

DOI: [10.48804/da9wic](https://doi.org/10.48804/da9wic)

Summary Subjects Metrics

Abstract

Between 2002 and 2022 a total of 35 national assessments were carried in Flanders. These assessments were commissioned by the Flemish government. For each national assessment a FAIR dataset was created. Since the data contained personal information about the participating pupils and schools, pseudonymisation was necessary. For certain types of additional research, however, it is essential to identify the participating pupils and schools. The current dataset contains the keys to re-identify the pupils and schools.

Tussen 2002 en 2022 werden in opdracht van de Vlaamse overheid 35 peilingen uitgevoerd. Voor elke peiling werd een FAIR dataset aangemaakt. Aangezien de data persoonlijke informatie bevatten, was pseudonimisatie noodzakelijk. Voor bepaalde types van onderzoek kan het echter essentieel zijn om individuele leerlingen of scholen te identificeren. Deze dataset bevat de sleutels ter reidentificatie van de leerlingen en scholen.

Country
Belgium

Conclusion



Thank you!