

2025 WDS Members Forum

Africa & Europe Regional Session

18 November

11:00 UTC | 12:00 CET/WEST | 13:00 EET



DOI: [10.5281/zenodo.17651477](https://doi.org/10.5281/zenodo.17651477)



Explore the Path to Proper Participation: **Visit Our Etiquette Page!**

- Go to worlddatasystem.org/virtual-meeting-etiquette
or scan the QR code
- We welcome your questions in the Q&A section
- Please note that this webinar will be recorded



WDS Virtual Meeting Etiquette

Agenda

- Welcome & Action Plan overview and update
- WDS SC Subcommittee on Standards and certifications - Update
- DRIVR project results
- Pre-forum survey - Reminder
 - Member lightning talks: 4TU.Research Data by Madeleine de Smaele
 - INTERMAGNET by Jürgen Matzka
 - National Oceanography Centre by James Ayliffe
 - Social Science Data Archive in Bosnia Herzegovina (DASS-BIH) by Amela Kurta
 - Strasbourg Astronomical Data Centre (CDS) by Caroline Bot
- World Data Centre for Geomagnetism, Edinburgh by Sarah Reay
- World Data Centre for Soils by Dr. Bas Kempen
- World Glacier Monitoring Service by Michael Zemp, Isabelle Gartner-Roer, Samuel U. Nussbaumer, Ethan Welty
- Data Stewardship Award
 - 2025 Award Winners
 - Youhua Ran's presentation
 - 2026 Call Open
- Discussion
- Closing
- Optional communication with WDS IPO and ITO offices

2025-2027 WDS Action Plan

Overview & Update

The World Data System

WDS Mission

...is to enhance the capabilities, impact, and sustainability of our member data repositories and data services by:

- **Creating** trusted communities of scientific data repositories
- **Strengthening** the scientific enterprise throughout the entire lifecycle of data and all related components creating first-class data that feeds first-class research output
- **Advocating** for accessible data and transparent and reproducible science

2025-2027 Action Plan

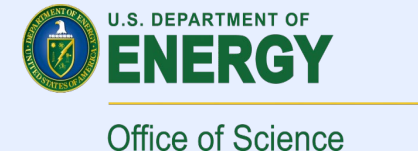
1. Provide services and support to member repositories
2. Advance the value narratives of WDS members
3. Demonstrate global leadership in data governance
4. Advocate for quality, trustworthiness, equitability, and FAIRness of data and data repositories worldwide

Structure & Function

2018 - ITO created, based at Ocean Networks Canada, University of Victoria



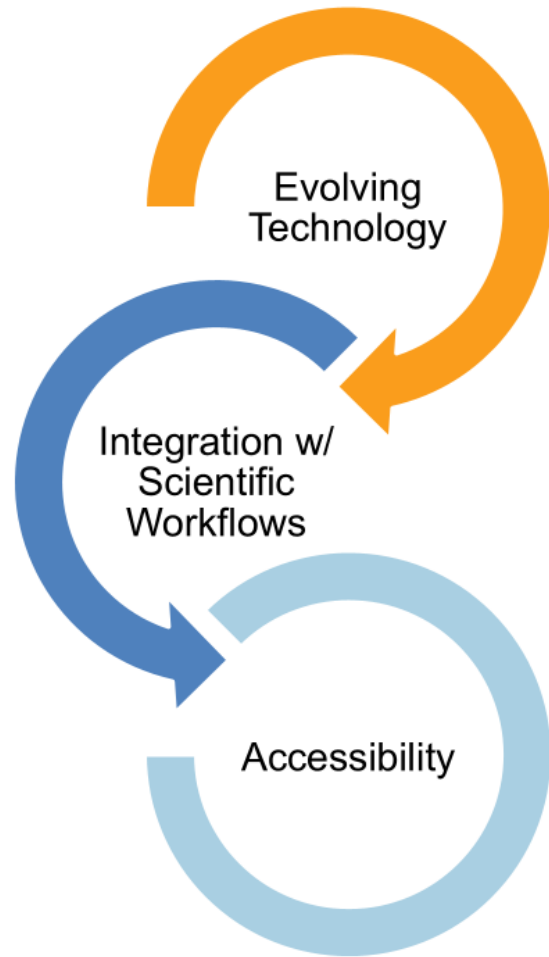
2021 - IPO moved from Japan to the UTK / ORNL, United States



WDS Subcommittee on Standards and Certifications

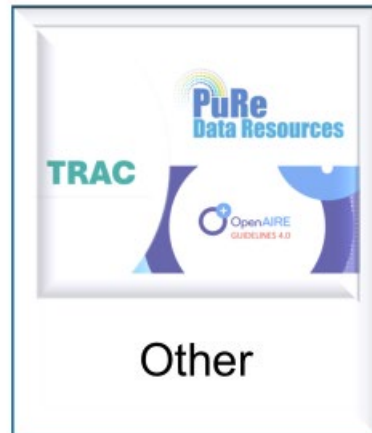
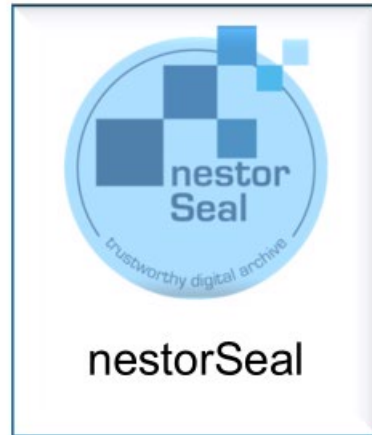
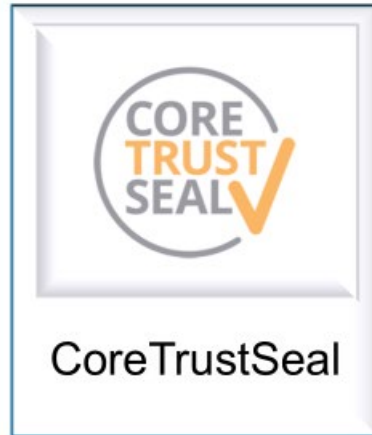
Update

Why Certification?



- Builds Trust within the broader scientific ecosystem
- Peer Review Assessment
- Alignment with evolving standards
- Demonstrates accountability
- Commitment to continuous improvement
- Mitigates risk perception

Comparative Analysis of Certification Frameworks



- Overlapping essential minimal requirements for trustworthiness:
 - Organizational Infrastructure
 - Digital Object Management
 - Information Technology and Security
- Difference: number of metrics or quantifiable indicators

Survey on Certification

- Global Participation and Interest
- Membership Status and Certification Hurdles
- CoreTrustSeal Certification Status
- CoreTrustSeal Certification Challenges
- Alternative Certifications for WDS Membership

Outcomes & Strategic Actions

Recommendations proposed by the WDS Subcommittee

Recommendations

1. Expand Regular Membership Criteria
2. Broaden Candidate Membership Eligibility
3. Strengthen Funding Agency Engagement
4. Shift Stakeholder Messaging
5. Provide Certification Support
6. Promote Funding Cohorts for LMICs

Conclusion



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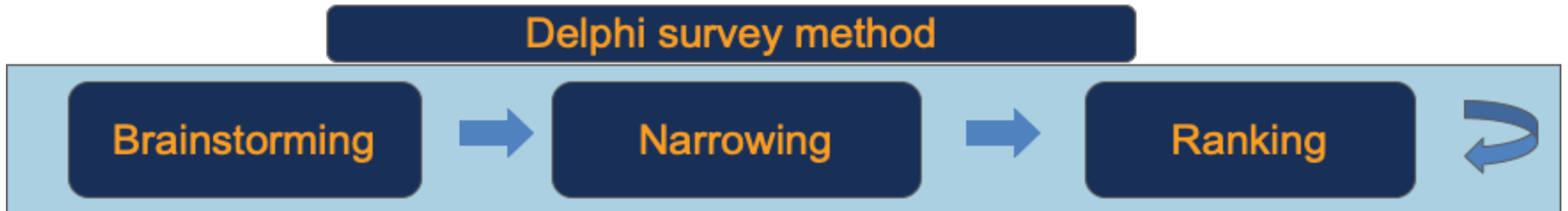
Data Repository Investment Value & Relevance (DRIVR) project

WDS Staff: Reyna Broadhurst, Emilie Altman

WDS SC Members: Mamoru Ishii, Johnathan Kool, Yasuhiro Murayama, Hugh Shanahan, Juanle Wang

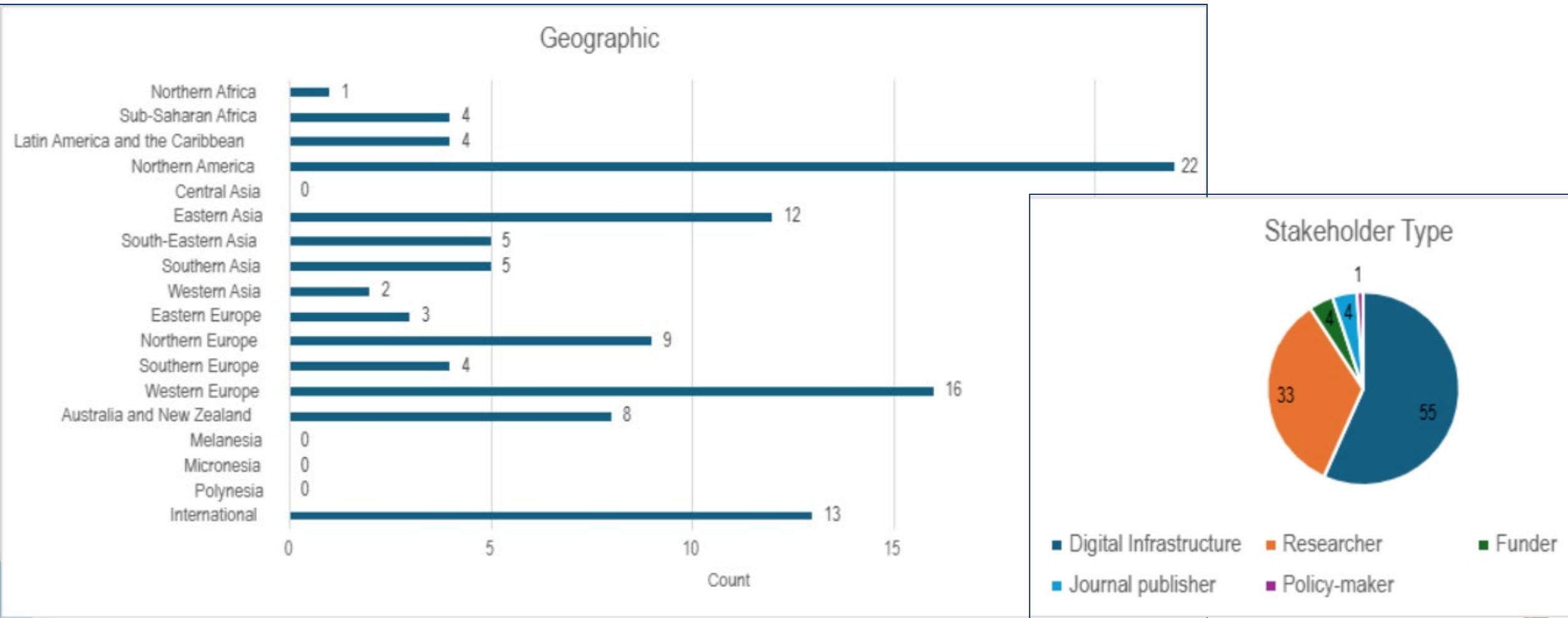
Delphi Study

A working group within the World Data System's Scientific Committee is undertaking a study using the Delphi survey method to identify the most important value-added benefits that data repositories provide to the international research ecosystem.

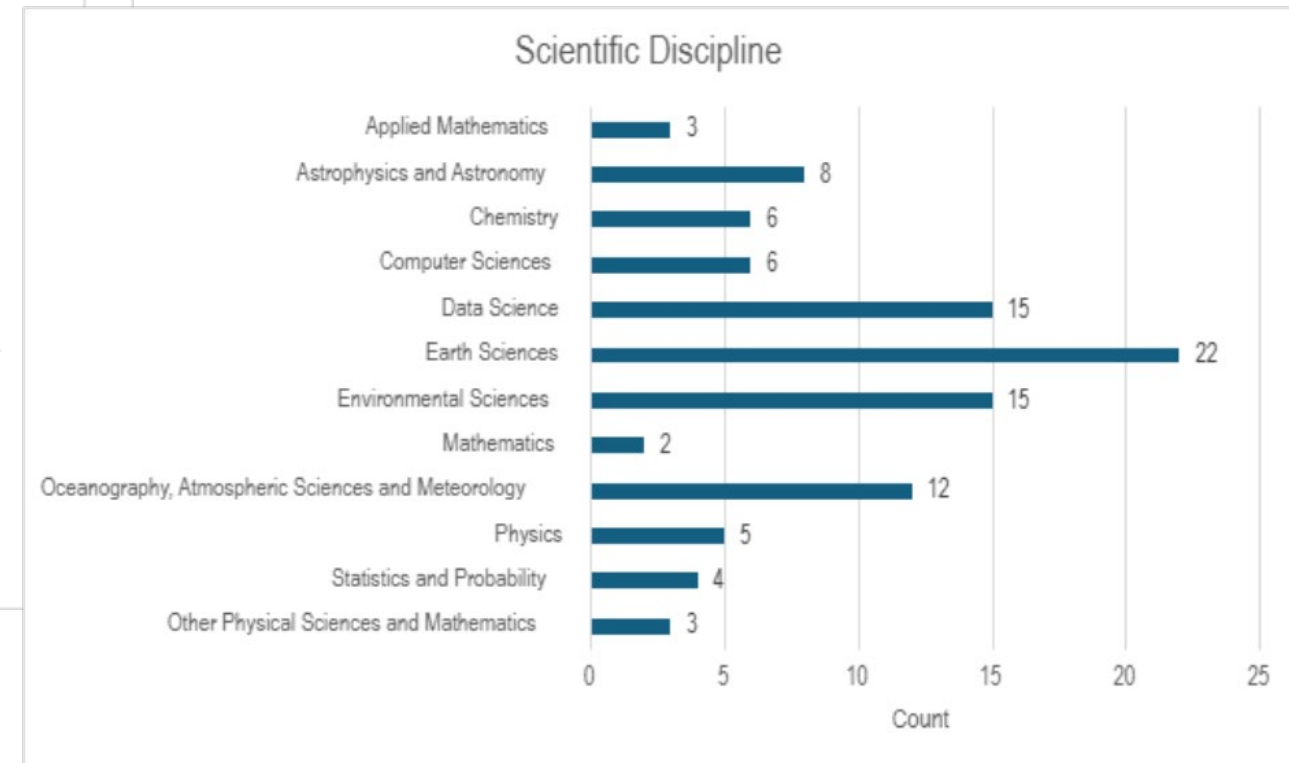
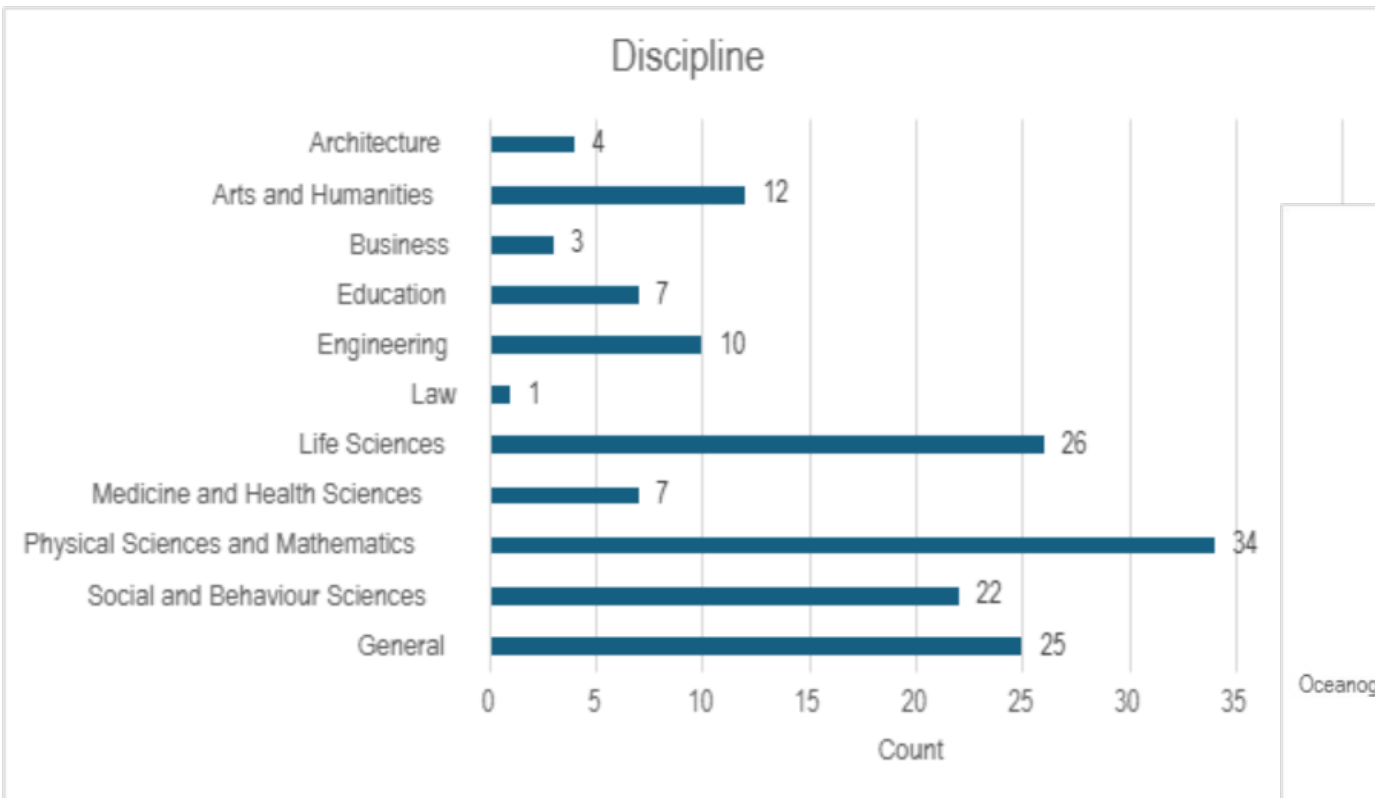


Participant attrition: 97, 53, and 31 respondents in phases

Delphi Study - Brainstorming



Delphi Study - Brainstorming



Delphi Study - Brainstorming

Brainstorming provided 37 benefits as inputs to the narrowing phase:

<https://wds-ito.org/value-added-benefits-narrowing/>

Aggregated Data Products
Artificial Intelligence Data Provision
Best Practice Networks
Bias Mitigation
Categorized and Labelled Data
Citizen Science
Community Driven Standards and Protocols
Community Focused Services
Cost-Effective Data Management
Cybersecurity
Data Curation
Data Deposit Services
Data Licensing and Legal Compliance

Data Management of Major Research Infrastructure
Data Quality Assurance
Data Rescue Services
Data Reuse
Data Usage and Impact Analysis
Evidence-based Decision Making
Interdisciplinary Study Potential
Long-term Active Data Preservation
Multi-facet Data Discovery and Accessibility
Near-Real Time Access
Open Data Access
Persistent Identifier Application

Provenance and Versioning
Provision of Education Resources
Rare Dataset Access
Researcher Collaboration Building
Scientific Reproducibility and Robustness
Sensitive Data Services
Systems Interoperability
Technical Quality Assurance
Technological Responsiveness and Evolution
Third Party Platform Integration
Trustworthiness
User Training and Support

Delphi Study – Ranking & Results



Displaying 19 of 37
benefits brainstormed

Results to be provided
in 2026

We invite you to
reach out to us to
develop your
narratives that align
with the higher
ranked benefits

Pre-Forum Survey - Reminder

Sustainability and Emerging Technologies

Please complete the survey by 1 December 2025

tiny.utk.edu/WDS_preforum_survey



Member Lightning Talks

Video: 4TU.Research Data

Madeleine de Smaele

INTERMAGNET and the World Data System

Jürgen Matzka

INTERMAGNET

Executive Council and Operations Committee

<https://intermagnet.org/>

Juergen.Matzka@gfz.de

INTERMAGNET's Vision

“A global, real-time, permanent geomagnetic observatory network, which is recognized as a key Earth observation system and which provides data that serves scientific research into the Earth, from its deep interior to space, and supports operational services benefiting society.”

Member institutes:	51
Member observatories:	157 (incl. historic)

INTERMAGNET
observatories

INTERMAGNET's key products

- Global 1-minute and 1-second provisional geomagnetic observatory data in real-time
- Global 1-minute and 1-second quasi-definitive data
- Global peer reviewed 1-minute and 1-second definitive geomagnetic observatory data
- Software to work with geomagnetic data
- A comprehensive technical reference manual
- Advice and support for observatories

Achievements in 2024 and 2025

- Opening of the INTERMAGNET organization to new team members and structures.
- Business as usual: peer review, data stewardship, DOI for definitive data, API for data distribution...
- continuous efforts on making metadata machine-readable and easy to update by data providers

Plans for 2025 to 2027

- Very fast near real-time data (MQTT, seedlink)
- metadata
- Simplification of rules (INTERMAGNET is 35 years old)
- Become more stringent on data quality, more lenient on membership. E.g., allow observatories that only partly fulfill requirements to stay in INTERMAGNET, but make sure that sub-standard data is not becoming part of the INTERMAGNET data sets. Discussing two-tier system.

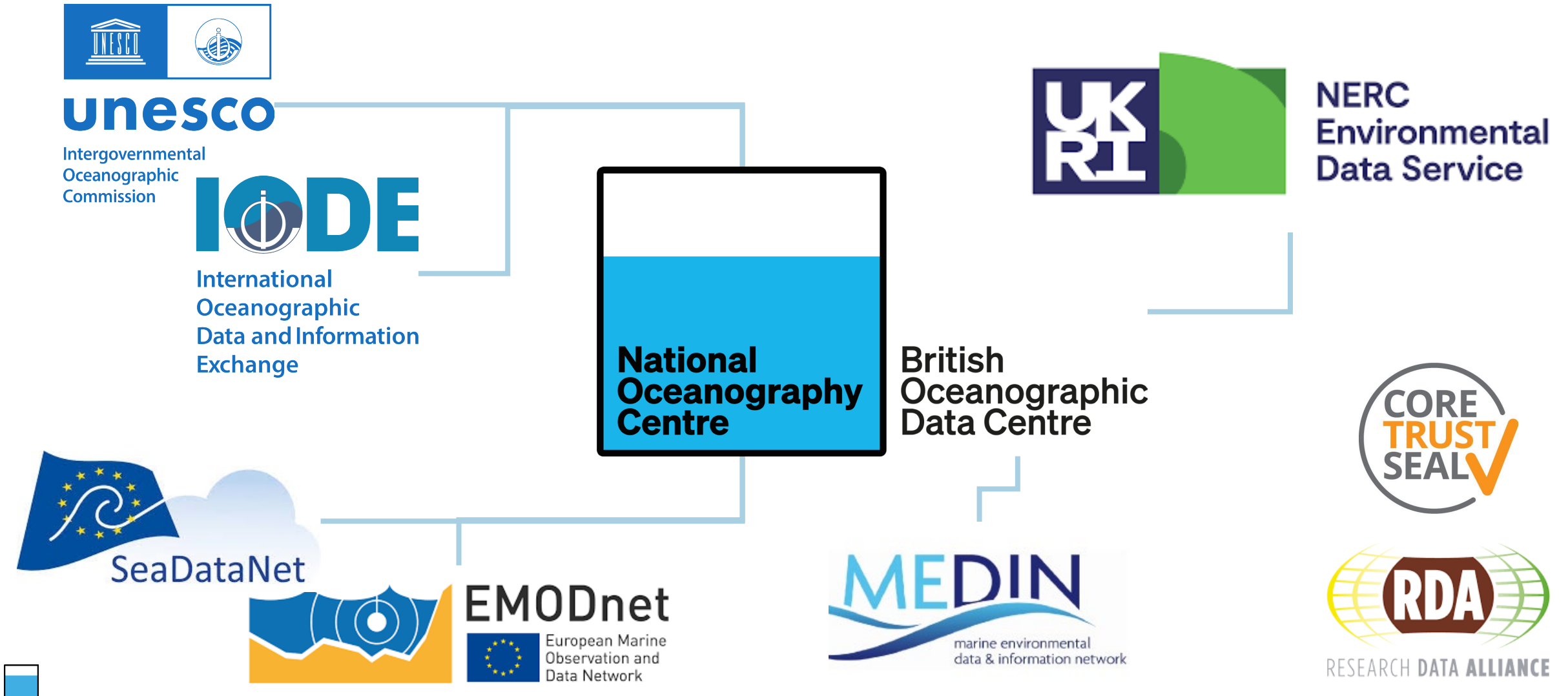
National Oceanography Centre

James Ayliffe

NOC WDS Report 2025



Introduction of your organization/repository



Highlights of milestones from the past year

- Contribution to the IODE programme and UN decade actions
- Improvements Towards Automated Submission and Ingestion
- Delivery of data management workshops
- Reply paper on Global Sea Level Observations
- Facilitating New International Data Flows (OBIS/ICES)
- IOC Ocean Acidification Metadata Interoperability and Vocabulary Workshops
- Complex Citation Recommendations Published
- Contribute to international products and standards such as the General Bathymetric Chart of the Oceans (GEBCO), Argo Float Community and EMODnet products
- Development of a Vocabulary Semantic Analyser



Your repository/organization plans in the near term

- CoreTrustSeal reaccreditation due in October 2026
- Increased development for automation, interoperability, integration, data access and data delivery:
 - Providing API access to high value datasets for enhanced AI usage.
 - PID registries (specifically for instrumentation)
 - Catalogues, with a focus on SpatioTemporal Asset Catalogs (STAC), a community led common structure for describing and cataloguing spatiotemporal assets;
 - Semantic interoperability
 - Governance
- Cross-domain interoperability



Top challenges faced by your repository/organization

- Funding
 - Domestic and international: particularly for routine observation programmes
- AI
 - Rapid access to large volumes of data for Machine Learning
 - Provenance, TRUST, CARE
- Increasing size of data and data complexity
- Increased diversity of user requirements



Video: Social Science Data Archive in Bosnia & Herzegovina (DASS-BIH)

Amela Kurta

Strasbourg Astronomical Data Centre (CDS)

Caroline Bot

Strasbourg astronomical Data Centre in 2024-25



Intro -Services for reference astronomy data



Reference Database of Astronomical Objects :
~20 million objects, ~69 million IDs, 49 million citation links, (treating ~15000 articles/yr)



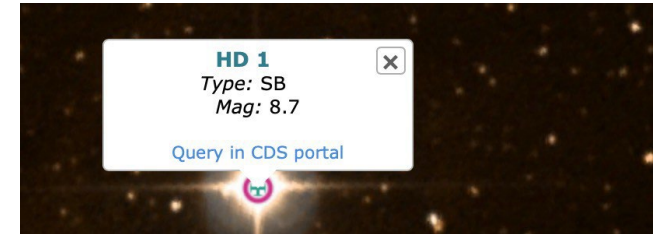
Reference service of astronomical catalogues :
>27000 Catalogues, > 90 billion rows (curating ~1200 catalogues/yr)



Visualisation and image database :
*1325+ HiPS surveys: images and cubes (>960 TB)
Aladin Desktop Client, Aladin Lite - embeddable web app*



*+ Cross-match service, CDS Portal, and many APIs...
Made interoperable by standards (IVOA, CDS, +)*



VizieR

Send to VO tools

Show the target form
Show column information

The 4 columns in color are computed by VizieR, and are not part of the original data (note that the computed coordinates are computed from the positions and the proper motions given in the table)

1355/pairdr3 Gaia DR3 Part 1: Main source (Gaia Collaboration, 2022) 2022yCat.1355..JG ReadMeStop
Plot annotation Gaia data release 3 (Gaia DR3), (original column names in green) (1811709771 rows) spectrum timeSeries

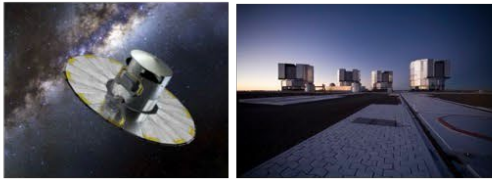
start AladinLite plot the output query using TAP/SQL

Full	RA J2000 "huma"	DE J2000 "duma"	RA ICRS deg	DE ICRS deg	Source	e-RA ICRS mas	e-DE ICRS mas	Pls mas	e- mas	i
1 00 42 26.3705801516 +77 33 55.008591631	010.60998097567	+77.56526583707	563466006629566208	0.0462	0.0444	0.6961	0.0505	5		
2 00 43 00.6194052635 +77 32 58.721250132	010.75262139915	+77.54965290021	563466040987884032	0.4369	0.5041	0.2083	0.5262	2		
3 00 43 01.7918673214 +77 33 57.851692169	010.75744643314	+77.56607297757	563466071052868480	0.3386	0.3301	0.7106	0.3704	1		
4 00 43 02.3680182542 +77 34 16.547720069	010.75980119041	+77.57127395256	563466075349043200	0.2992	0.3152	0.6006	0.3383	3		
5 00 42 50.6604737357 +77 34 12.178056859	010.71105999397	+77.57004838502	563466075346416768	0.1482	0.1341	0.4687	0.1529	1		
6 00 42 50.5738549270 +77 34 15.414726261	010.71070276319	+77.57094494277	563466075349042816	0.0356	0.0340	0.5404	0.0384	1		
7 00 42 54.2250279674 +77 34 12.711563905	010.72593761653	+77.57019765664	563466071052872064	5.5532	8.4735					
8 00 42 42.9503380307 +77 33 57.198220302	010.67894119051	+77.56589633503	563466105412602624	0.5720	0.6321	-0.3764	0.6017	2		
9 00 42 33.1637155816 +77 34 17.971008877	010.63818315480	+77.57157675613	563466105417608176	0.1945	0.1988	0.6166	0.7501	1		



CDS – a part of the astronomy data infrastructure

Connections to the Observatories and Space Agencies

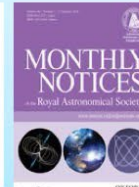
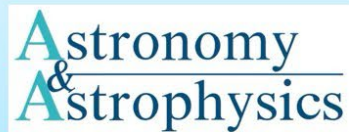


Collaboration with other Astronomy Data Centres



- Harvard Smithsonian ADS
- NASA Extragalactic Database

Astrophysics Journals



+ ...

Building the Data Sharing framework of Astronomy: *The Virtual Observatory*



Certified:



Open Science:



RESEARCH DATA ALLIANCE



European Projects:



ASTRO-CC

Engagement highlights

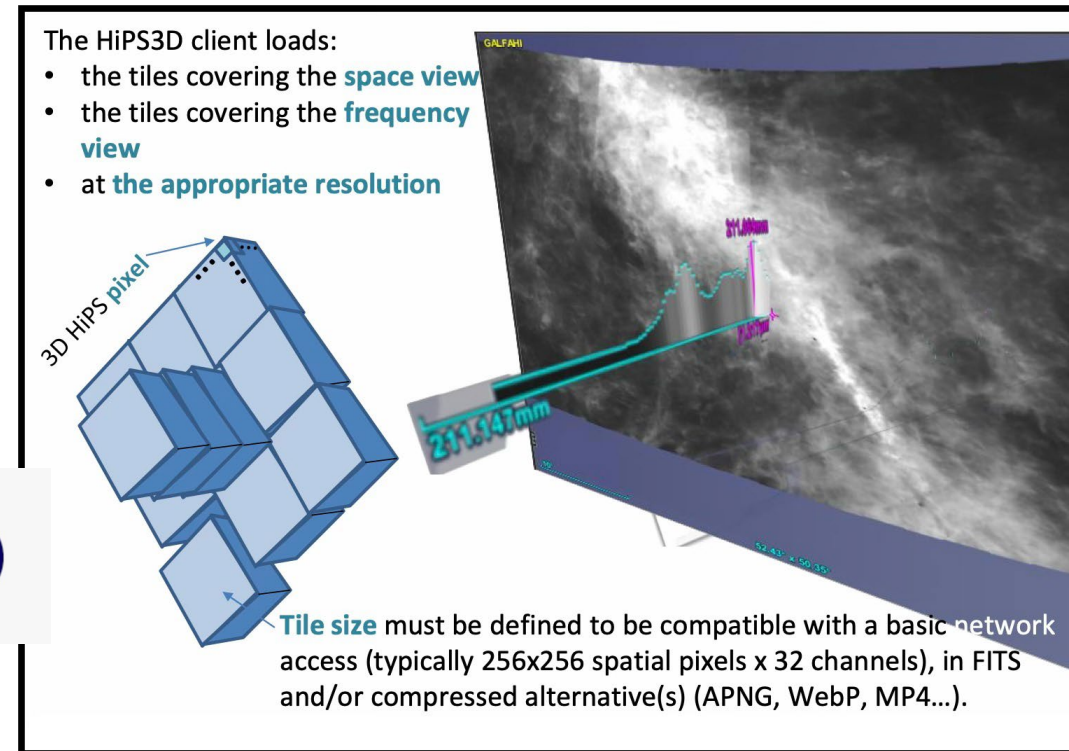
- Engagement with our users at in-person community conference events.
- Training event at IAU 2024 in Cape Town
- For African students and educators



Milestones and highlights

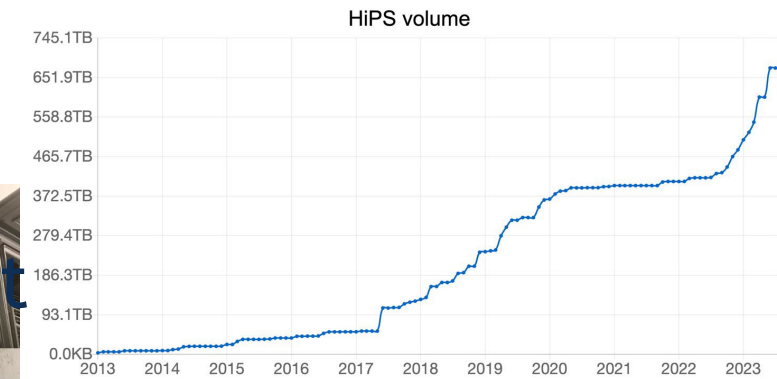
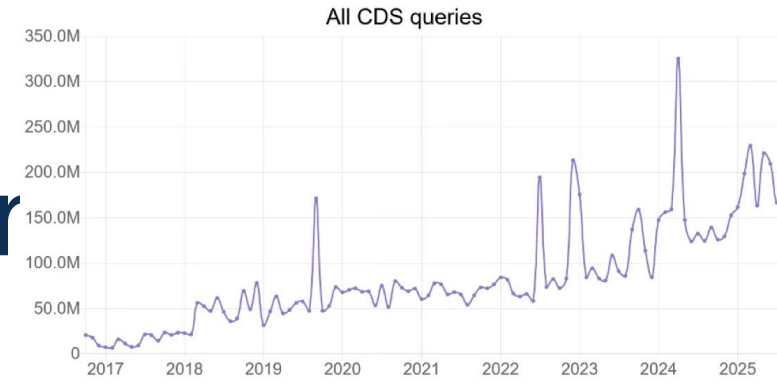
- Output of several years of R&D on visualization of very large data cubes -> HiPS3D prototype
- Done in the context of the SKA observatory
- But in line with our missions generic to ALL astronomical data cubes

SKAO



Challenges : balancing evolution and r

- Technology changes, science changes
 - Publication and data increase
 - Usage continues to increase
- Major storage upgrade - AllSky Data 2 project
 - Data on 2 sites + 5 mirrors
- Renewal of VizieR associated data ingestion system
 - ODAS project (Open Data Astronomy)



Video: World Data Centre for Geomagnetism, Edinburgh

Sarah Reay

Video: World Data Centre for Soils

Dr. Bas Kempen

Video: World Glacier Monitoring Service

Michael Zemp, Isabelle Gartner-Roer, Samuel U. Nussbaumer, Ethan Welty

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WDS Data Stewardship Award

2025 Awardees

2019 WDS Data Stewardship Award Winner

Libby Liggins (center)



2025 WDS Data Stewardship Award Third Place



Dr. Bhaleka Persaud

Research Data Management Specialist,
University of Waterloo, Canada

2025 WDS Data Stewardship Award Second Place

Prof. Micheal Olaolu Arowolo

Assistant Professor of Health Informatics,
Xavier University of Louisiana, USA



2025 WDS Data Stewardship Award First Place



Dr. Youhua Ran

Professor

Northwest Institute of Eco-Environment
and Resources, Chinese Academy of
Sciences, China

[Watch his presentation on his impactful
work that led to this award.](#)

2026 WDS Data Stewardship Award

Nominations Open!



<https://worlddatasystem.org/news-events/data-stewardship-awards/>

Discussion

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Thank you!

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WDS Newsletters



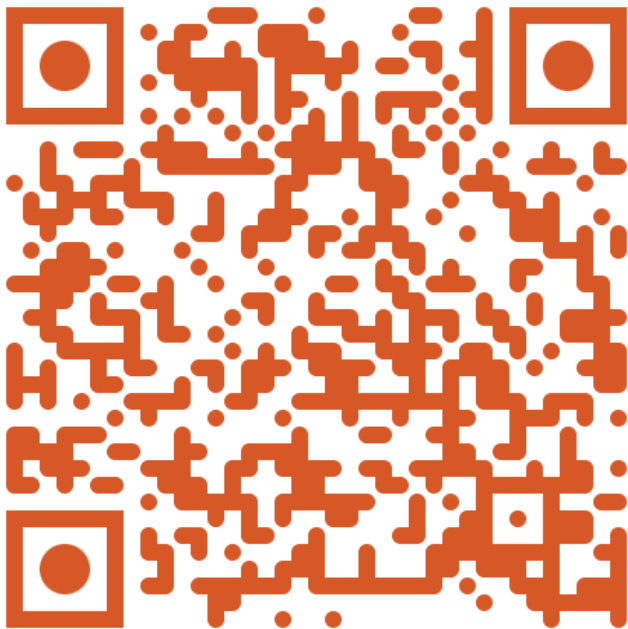
Scan here!

**Read and subscribe for future updates around the
WDS community!**

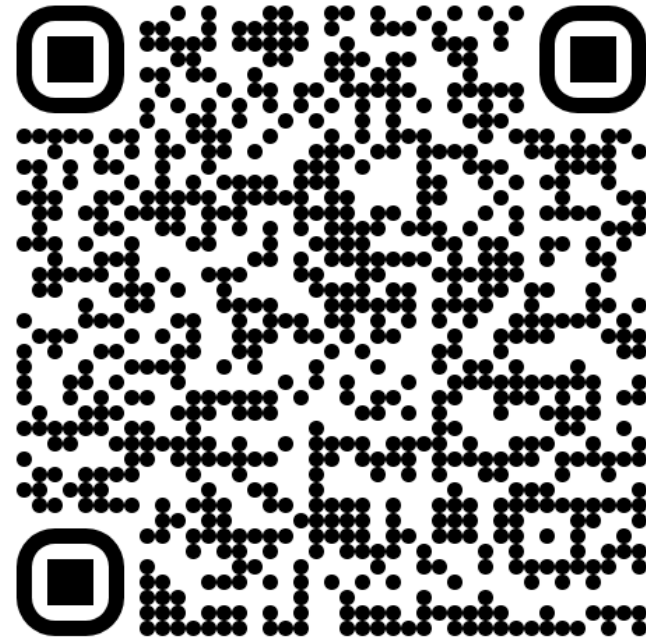
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Join the WDS Community!

WDS Membership



WDS-Early Career Researcher Network



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WDS Endorsements

BARCELONA
DECLARATION ON
OPEN RESEARCH
INFORMATION



**International
Science Council**

Safeguarding and Enhancing
International Scientific
Collaboration for Climate Action



<https://worlddatasystem.org/endorsements/>

For more info:

Email us: wds-ipo@utk.edu

Visit our website: <https://worlddatasystem.org>

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LinkedIn: [@company/world-data-system](https://www.linkedin.com/company/world-data-system)

X (formerly Twitter): [@ISC_WDS](https://twitter.com/ISC_WDS)

Vimeo: [@worlddatasystem](https://vimeo.com/worlddatasystem)

BlueSky WDS-IPO: [@worlddatasystem.org](https://bsky.app/profile/worlddatasystem.org)

BlueSky WDS-ITO: [@wds-ito.org](https://bsky.app/profile/wds-ito.org)

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World Data System International Technology Office (WDS-ITO) is hosted by the University of Victoria. This work is supported by the Digital Research Alliance of Canada and Ocean Networks Canada.

