

Knowledge Network and Open Metadata Catalogue: Working Group Charter

Background

- 1) The WDS Scientific Committee (WDS-SC) identified at its 7th Meeting (1–2 November 2012), the need to update the concept of the [WDS Data Portal](#) and build an online **open WDS Metadata Catalogue** that can be used to discover and access the quality-assessed scientific data and information holdings of WDS Regular and Network Members. The Metadata Catalogue would also provide a unique and aggregated metadata entry point for interested initiatives such as the Global Earth Observation System of Systems.
- 2) The WDS-SC also identified the need to test the feasibility of developing a scalable and agile **WDS Knowledge Network**, which draws information from the WDS Metadata Catalogue but which is heavily supplemented with additional data and information from a variety of other sources. By richly cataloguing information about accredited data centres/service providers (and other known data providing entities), ICSU-WDS can become the lead source of information on global capability with respect to scientific data centre/service providers. Information about these entities would be openly discoverable electronically by presenting both human and machine interfaces into the Knowledge Network. This Knowledge Network would, by default, differentiate providers on the basis of their accreditation (i.e., accreditation provided by ICSU-WDS and any other accreditation schemes that currently exist or emerge to cover specific domains/networks). Such a Knowledge Network would provide a powerful tool for research projects and science funders to map the multidisciplinary data and information supplier landscape, and in so doing help to identify, for example, datasets or existing gaps in information provision or partners who are available for collaborations. Further, the existence of this Knowledge Network would help reduce global duplication of data management and data sharing efforts, and hence result in the improved cost-effectiveness of science funding programmes.
- 3) ICSU-WDS resolved to merge the Metadata and Knowledge Network Working Groups, this updated Charter reflects changes to accommodate that decision.
- 4) The vision for the WDS contribution to Global Research Data Infrastructure is set out in a separate implementation plan and accompanying specification documents, and this Working Group Charter is designed to provide an oversight mechanism for the implementation task.

Scope of WDS Activities Requiring Oversight

- 1) Confirm the requirements and specifications for an open WDS Metadata Catalogue and once agreed, develop a strategy and oversee implementation.
- 2) Confirm the requirements and specifications for a WDS Knowledge Network and once agreed, develop a strategy and oversee its implementation.
- 3) Document and disseminate the specifications for an open WDS Metadata Catalogue of Data Centres/Data Service Providers, and agree its integration with re3data.
- 4) Look for obvious content synergies with the redeveloped, WDS International Programme Office (WDS-IPO) hosted WDS Member accreditation system (in terms of reusing information supplied by applicants and requesting information that can populate the Metadata Catalogue, Global Registry, and Knowledge Network).
- 5) Identify existing sources of Data Centre/Data Service Provider information that can readily be harvested, categorized, organized, and used to seed the Knowledge Network.
- 6) Conduct a bounded pilot-project to demonstrate linked data approaches for knowledge representation and discovery in the Knowledge Network, based on (1) .
- 7) Assist with identification of appropriate standards and technology choices to assist with the establishment of a Global Research Data Infrastructure.

Terms of Reference

The Working Group has multiple roles:

- 1) Assistance with specific implementation projects and deliverables—see Annexure A.
- 2) Oversight and guidance in respect of data science principles and guidelines.
- 3) Identification of and engagement with key stakeholders, projects, and initiatives.
- 4) Assist with identification of funding opportunities and medium-term hosting of the Metadata Catalogue/Knowledge Network.
- 5) Engage with appropriate RDA Working Groups to maintain synergy and alignment with expert consensus—see Annexure B.

Meetings will be held monthly via teleconference, and every 6 months a face-to-face meeting will be scheduled as part of the WDS-SC Meeting agenda. Non-SC members will be able to join via teleconference.

Deliverables and Milestones

- 1) **Concept White Paper:** Describes the basis of the WDS approach to develop a Metadata Catalogue integrated with a Knowledge Network resource. Describes the rationale, advantages, research questions

and challenges, and conceptual architecture. This assists WDS membership with understanding the future directions of ICSU-WDS from a technology perspective (Draft Available).

- 2) **Standards and Technologies Guidelines:** A detailed review and selection of standards and technologies that will support the conceptual architecture. This output not only guides ICSU-WDS in the development of its own Metadata Catalogue and Knowledge Network, but also serves as a blueprint and a technical roadmap for WDS membership in respect of interoperability. It is a supplement to the recently published ICSU-WDS Data Management Principles.
- 3) **Platform for Metadata Catalogue Deployment:** A suitable platform and host institution needs to be identified for the WDS Metadata Catalogue implementation. A service level agreement and funding arrangements, if any, needs to be formalized.
- 4) **Platform for Knowledge Network Deployment:** A suitable platform for the Knowledge Network needs to be identified—bearing in mind that it need not physically be in the same location as the WDS Metadata Catalogue, and may even be a federated collection of node repositories. Again, a service level agreement and funding arrangements must be formalized.
- 5) **Pilot Implementation:** The Knowledge Network pilot implementation will demonstrate the usefulness of the concept and technology by leveraging (initially) WDS Metadata Catalogue information such as is available, and WDS membership information. The scope of the pilot implementation needs to be confirmed by the Working Group, and is dependent on progress with the WDS Metadata Catalogue.
- 6) **WDS Metadata Catalogue Implementation:** The WDS Metadata Catalogue needs to be made operational as soon as resources permit, and is an ongoing process. A minimum critical mass is required before launch, and this decision ultimately lies with the WDS-SC.

Schedule

- 1) Agree a Terms of Reference and Project Charter for the Working Group: April 2016.
- 2) Canvass external members and obtain commitment to participate: April 2016.
- 3) Inaugural Working Group Meeting: End May 2016. Subsequent meetings for a period of 18 months on a monthly basis, by agreement between members.
- 4) Confirmation of technology choices and applicable standards: End May 2016.
- 5) Knowledge Network Pilot Project Implementation: End September 2016.
- 6) Ongoing WDS Metadata Catalogue Implementation: From April 2016.
- 7) Ongoing promotion and discussion search for funding opportunities and supporting projects: From April 2016.

Membership

The Chair or Co-chairs and the members of the Working Group are appointed by the WDS-SC, and the membership will be reviewed every two years during one of the WDS-SC Meetings. External experts and Representatives of WDS Member Organizations are eligible to join the Working Group.

Co-chairs:

- **Wim Hugo** (*WDS-SC, SAEON, South Africa*)
- **Michael Diepenbroek** (*PANGAEA, Germany*)

Members:

- **Ingrid Dillo** (*WDS-SC, DANS, Netherlands*)
- **Paolo Manghi** (*OpenAIRE, NMIS-ISTI, Italy*)
- **Sandro La Bruzzo** (*OpenAIRE, NMIS-ISTI, Italy*)
- **Yasuhiro Murayama** (*WDS-SC, National Institute for Communications and Technology, Japan*)
- **Donald Hobern** (*GBIF Secretariat, Natural History Museum, Denmark*)
- **Jared Lyle** (*ICPSR, University of Michigan, USA*)

Ex officio:

- **Mustapha Mokrane** (*WDS-IPO, Japan*)
- **Rorie Edmunds** (*WDS-IPO, Japan*)

Finances

Participation of members in this WDS Working Group activity is voluntary, and no financial support is available from the WDS-IPO for travels and other costs. Meetings will be conducted by electronic means (GoToMeeting or WebEx) provided by the WDS-IPO and/or other partners. Face-to-face meetings can be organized as the opportunity arises at international conferences only if financial support can be provided.

Procedures

The Co-chairs will be responsible for Working Group meeting agenda and for calling the meetings. They will report to the WDS-SC Executive Committee regularly, and at least twice-a-year on the occasion of the biannual WDS-SC face-to-face Meetings.

Term and Review

The Working Group activity and continued operation will be reviewed in September 2017.

Annexure A: Implementation Projects

- 1) WDS Metadata Catalogue Implementation Pilot.
 - a) Implementer: OpenAIRE
 - b) Contact Person: Paolo Manghi
 - c) Funding: OpenAIRE
 - d) In-kind contributions: PANGAEA, SAEON, WDS-IPO
- 2) WDS Knowledge Network Implementation Pilot.
 - a) Implementer: SAEON
 - b) Contact Person: Wim Hugo
 - c) Funding: SAEON, DIRISA
 - d) In-kind contributions:
- 3) Guidelines for ICSU-WDS Membership on Metadata Implementation
 - a) Implementer: WDS-IPO
 - b) Contact Person: Mustapha Mokrane
 - c) Funding: WDS-IPO
 - d) In-kind contributions: Wim Hugo, Ingrid Dillo,...

Annexure B: RDA Alignment

- 1) Brokering Interest Group: <https://rd-alliance.org/groups/brokering-ig.html>
- 2) Data Fabric Interest Group: <https://rd-alliance.org/group/data-fabric-ig.html>
- 3) Metadata Interest Group: <https://rd-alliance.org/groups/metadata-ig.html>
- 4) RDA/WDS Certification of Digital Repositories Interest Group: <https://rd-alliance.org/groups/rdawds-certification-digital-repositories-ig.html>
- 5) Vocabulary Services Interest Group: <https://rd-alliance.org/groups/vocabulary-services-interest-group.html>
- 6) Data Description Registry Interoperability Working Group: <https://rd-alliance.org/groups/brokering-framework-working-group.html>