WDS/DSA Certification – International collaboration for a trustworthy research data infrastructure

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Today's research is international, transdisciplinary, and data-enabled, which requires scrupulous data stewardship, full and open access to data, and efficient collaboration and coordination. New expectations on researchers based on policies from governments and funders to share data fully, openly, and in a timely manner present significant challenges but are also opportunities to improve the quality and efficiency of research and its accountability to society. Researchers should be able to archive and disseminate data as required by many institutions or funders, and civil society to scrutinize datasets underlying public policies. Thus, the trustworthiness of data services must be verifiable. In addition, the need to integrate large and complex datasets across disciplines and domains with variable levels of maturity calls for greater coordination to achieve sufficient interoperability and sustainability.

The World Data System (WDS) of the International Council for Science (ICSU) promotes long-term stewardship of, and universal and equitable access to, quality-assured scientific data and services across a range of disciplines in the natural and social sciences. WDS aims at coordinating and supporting trusted scientific data services for the provision, use, and preservation of relevant datasets to facilitate scientific research, in particular under the ICSU umbrella, while strengthening their links with the research community.

WDS certifies its Members, holders and providers of data or data products, using internationally recognized standards. Certification of scientific data services is essential to ensure trustworthiness of the global research data infrastructure. It contributes to building a searchable, distributed, interoperable and sustainable research data infrastructure. Several certification standards have been developed over the last decade, such as the Network of Expertise in long-term Storage and Accessibility of Digital Resources in Germany (NESTOR) seal, German Institute for Standardization (DIN) standard 31644, Trustworthy Repositories Audit and Certification (TRAC) criteria and the International Organization for Standardization (ISO) standard 16363. In addition, the Data Seal of Approval (DSA) and WDS have set up core certification mechanisms for trusted digital repositories in 2009, which are increasingly recognized as de facto standards. While DSA emerged in Europe in the Humanities and Social Sciences, WDS started as an international initiative with historical roots in the Earth and Space Sciences. Their catalogues of requirements and review procedures are based on the same principles of openness, transparency. A unique feature of the DSA and WDS certification is that it strikes a balance between simplicity, robustness and the effort required to complete.

A successful international cross-project collaboration was initiated between WDS and DSA under the umbrella of the Research Data Alliance (RDA), an international initiative started in 2013 to promote data interoperability which provided a useful and neutral forum. A joint working group was established in early 2014 to reconcile and simplify the array of certification options and improve and stimulate core certification for scientific data services. The outputs of this collaboration are a Catalogue of Common Requirements (https://goo.gl/LJZqDo) and a Catalogue of Common Procedures (https://goo.gl/vNR0q1) which will be implemented jointly by WDS and DSA.