

## **Developments in the certification of data centres, services and repositories through an RDA/WDS/DSA partnership**

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The International Council for Science World Data System (ICSU-WDS) is striving to build worldwide 'communities of excellence' for scientific data services by certifying Member Organizations - holders and providers of data or data products - from wide-ranging fields by using internationally recognized standards. WDS Members are the building blocks of a searchable common infrastructure, from which a data system that is both interoperable and distributed can be formed.

As part of the process of developing the WDS, certification criteria and a procedure for evaluating candidates for membership were developed by the WDS Scientific Committee to ensure the trustworthiness of WDS Members in terms of authenticity, integrity, confidentiality and availability of data and services. Certification is important because it promotes trust and confidence in the usability and persistence of shared data resources. It also helps repositories, data centres and services improve their practices and procedures. The WDS has 17 certification criteria grouped under the following headings:

- WDS general requirements and policies (Organization specific requirements)
- Organizational framework
- Management of data, products and services
- Technical infrastructure

As of February 2016, the World Data System has 95 Member Organizations in four different categories: 61 Regular Members; 10 Network Members; 6 Partner Members; 18 Associate Members, with reviews underway for several other applicants.

In addition to the WDS Certification, several certification standards and accreditation procedures for data repositories at differing levels of rigour have been developed worldwide. These include: Data Seal of Approval (DSA), Network of Expertise in long-term Storage and Accessibility of Digital Resources in Germany (nestor) Seal/German Institute for Standardization standard 31644 and the Trustworthy Repositories Audit and Certification criteria/International Organization for Standardization (ISO) standard 16363. The DSA and the WDS are two examples of organizations that have set up core certification mechanisms; however the two standards have evolved and operated independently. The primary focus of DSA has been on digital repositories in the Humanities and Social Sciences, whereas the focus of WDS has been on Earth and Space Sciences for historical reasons. Nevertheless, both initiatives have fully multidisciplinary missions.

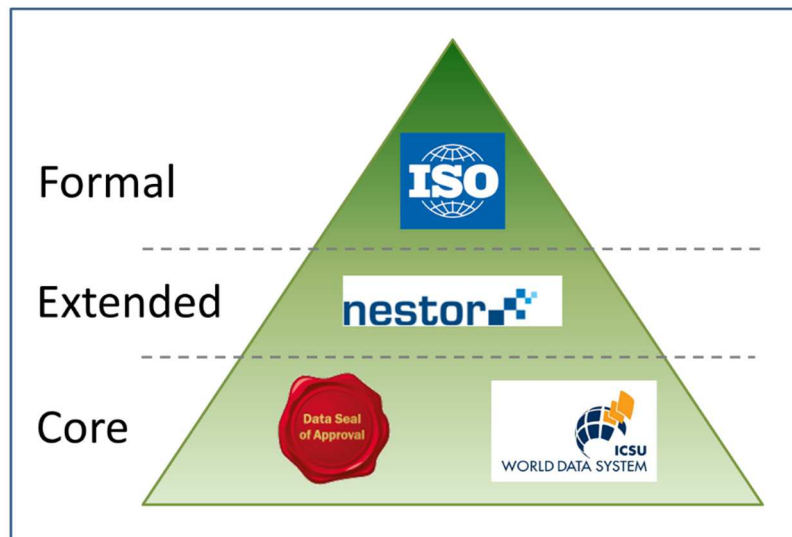


Figure 1: The different certification levels, each with increasing rigour.  
 DSA and ICSU-WDS represent core certification.

In 2014, under the umbrella of the Research Data Alliance (RDA)/WDS Interest Group on Certification of Digital Repositories, a Working Group (Repository Audit and Certification DSA-WDS Partnership WG) was established - consisting of representatives from the DSA and WDS communities and beyond - to explore and develop a DSA-WDS partnership with the objectives of realizing efficiencies, simplifying assessment options, stimulating more certifications and increasing impact on the community.

The WG has delivered a harmonized catalogue of criteria for core certification of repositories that is drawn from the DSA and WDS requirements, as well as a set of common procedures for repository assessment. This presentation will examine and discuss these, outlining the issues overcome in establishing the catalogue of Common Requirements. These are expected to replace the current certification catalogues of the Data Seal of Approval and the ICSU World Data System. They include an introduction on the benefits of certification, background information, all guidance text and a glossary. Both the new catalogue and (to some extent) the procedures have been validated through a testbed comprised of DSA and WDS community members undergoing renewal of their certifications. The testbed results have been published in short report; the insights resulting from this and subsequent improvements to the Common Requirements will be assessed.

By reconciling the fundamental and lightweight certification mechanisms of DSA and ICSU-WDS, the joint WG has taken a first step in simplifying the array of certification options, and shown the value to be gained from a certification procedure requiring relatively low investment of time and effort. Looking to the future, a proposal building on the WG outputs, Trust4Data, has been submitted to the EU. Its objective is to establish a Core Certification Service for a wide range of research data repositories and data centres. It carries the ambition to develop and create a standard information (object and process) model for Core Certification and deploy this in a service within a dedicated group of early adopters. A brief overview of the proposal and its outputs will be given.