# 1 Data Management

Develop best practices and tools for non-static, machine-readable data management plans which can evolve throughout the research data lifecycle, as well as be machine-readable by collaborators and stored with the data.

## Data Type Model and Registry - Data Type Registries (DTR) WG Recommendations

Published by the Data Type Registries WG providing machine-readable and researcher-accessible registries of data types that support the accurate use of data. **> ICT TECH SPECIFICATION**

## Machine Actionable Policy Templates - Practical Policy WG Recommendations

Defining best practices of how to deal with data automatically and in a documented way with computer actionable policy. **> ICT TECH SPECIFICATION**

## PID Information Types (PIT) WG Recommendations

Persistent Identifier Type Registry produced by the PID Information Types WG, a conceptual model for structuring typed information to better identify PIDs, common interface for access to this information. **> ICT TECH SPECIFICATION**

## RDA Research Data Collections WG Recommendations

A comprehensive model for actionable collections and a technical interface specification to enable client–server interaction.

## Recommendation on PID Kernel Information

A set of guiding principles, architectural considerations, use cases and a fundamental metadata schema to manage information in Persistent Identifier records for scalable middleware infrastructure and automated processes.

## Research Data Repository Interoperability WG Final Recommendations

Provides recommendations with respect to an interoperable packaging and exchange format for digital content.

## The FAIRsharing Registry & Recommendations: Interlinking Standards, Databases & Data Policies

Guide for citation and its implementation in a registry of standards, databases and data policies.

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# 2 Data Collection

Capture scientific evidence that allows analysis to lead to the formulation of convincing and credible answers to questions of researchers.

## Matrix of use cases and functional requirements for research data repository platforms

Based on use cases, matrix describes forty-four functional requirements identified for research data repository platforms and provides a score identifying relative importance.

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# 3 Data Description

Documentation is an essential component of research data management and allows researchers to make sense of data in the future.

## Repository Audit and Certification DSA–WDS Partnership WG Recommendations

Creates harmonized Common Procedures for certification of repositories at the basic level, drawing from the procedures already put in place by the Data Seal of Approval (DSA) and the ICSU World Data System (ICSU-WDS). **> ICT TECH SPECIFICATION**

## Research Data Repository Interoperability WG Final Recommendations

Provides recommendations ith respect to an interoperable packaging and exchange format for digital content.

## Wheat Data Interoperability Recommendations

Impacting the discoverability, reusability and interoperability of wheat data by building a common framework for describing, representing linking and publishing wheat data.

## Basic Vocabulary of Foundational Terminology Query Tool

Data Foundation & Terminology (DFT) WG Recommendations: produced by the Data Foundation & Terminology WG which ensures researchers use a common terminology when referring to data. **> ICT TECH SPECIFICATION**

## Data Description Registry Interoperability Model

Interoperability model addressing the problem of cross platform discovery by connecting datasets together.

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## Metadata Standards Directory Working Group Recommendations

Community curated standards catalogue for metadata interoperability.

## RDA/TDWG Attribution Metadata Working Group: Final Recommendations

Supports standardized metadata for attributing work and tracking provenance in the curation and maintenance of research collections.

## Data Discovery Paradigms: User Requirements and Recommendations for Data Repositories

This output helps data repositories improve search and discovery of data.

## Eleven Quick Tips for Finding Research Data

Educates and trains research students and early career researchers, and helps researchers more effectively and precisely discover data that meets specific needs.

## Matrix of use cases and functional requirements for research data repository platforms

Based on use cases, matrix describes forty-four functional requirements identified for research data repository platforms and provides a score identifying relative importance.

## Research Data Repository Interoperability Primer

Use cases and an overview of standards, technologies and tools that could be components of an adoptable approach to facilitating interoperability between different research data repository platforms.

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# 4 Identity, Store & Preserve

Collections and streams of digital objects are growing at an incredibly rapid pace. We need to understand on what these objects are, how we need to be documenting and storing them, and how they should all link and talk to one another before we get overtaken by a forest of data.

## Scalable Dynamic Data Citation Methodology
Supports efficient processing of data and linking from publications. **> ICT TECH SPECIFICATION**

## Machine Actionable Policy Templates - Practical Policy WG Recommendations
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## Repository Audit and Certification DSA–WDS Partnership WG Recommendations
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## 39 Hints to Facilitate the Use of Semantics for Data on Agriculture and Nutrition
A number of highlights on issues to be addressed in order to make the use of semantics more straightforward and widespread

## WDS/RDA Assessment of Data Fitness for Use WG Outputs and Recommendations
A practical process by which CoreTrustSeal certified repositories can evaluate dataset holding for their fitness for use.

## Federated Identity Management for Research Collaborations
Common requirements of Research Communities seeking to leverage Identity Federation for Authentication and Authorisation.

## Matrix of use cases and functional requirements for research data repository platforms
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# 5 Disseminate, Link & Find

An increasing number of publishers and journals are implementing policies that require or recommend published articles to be accompanied by the underlying research data.

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### An open, universal literature-data cross-linking service
RDA/WDS Publishing Data Services WG Recommendations: An open, universal literature-data cross-linking service to improve data visibility, discoverability, re-use and reproducibility.

### Data Description Registry Interoperability Model
Interoperability model addressing the problem of cross platform discovery by connecting datasets together.

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### RDA/WDS Publishing Data Workflows WG Recommendations
A data-publishing reference model assisting research communities in understanding options for data publishing workflows and increases awareness of emerging standards and best practices.

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### Repository Audit and Certification DSA–WDS Partnership WG Recommendations
Creates harmonized Common Procedures for certification of repositories at the basic level, drawing from the procedures already put in place by the Data Seal of Approval (DSA) and the ICSU World Data System (ICSU-WDS). > ICT TECH SPECIFICATION

### CODATA/RDA Summer School in Data Science & Cloud Computing in the Developing World WG Recommendations
A framework to run a series of Summer Schools in Data Science and data sharing in low and middle income countries (LMICs).

### Sustainable Business Models for Brokering Middleware to support Research Interoperability
Discusses the strengths and weakness of five classes of business models in the context of long-term sustainment of brokering middleware.

### A survey of current practices in data search services
Survey results based on an examination of practices that data repositories employ in helping users search as well as common data discovery issues, such as relevancy.

### Data Discovery Paradigms: User Requirements and Recommendations for Data Repositories
Output helps data repositories improve search and discovery of data.

### Eleven Quick Tips for Finding Research Data
Educates and trains research students and early career researchers, and helps researchers more effectively and precisely discover data that meets specific needs.

### Matrix of use cases and functional requirements for research data repository platforms.
Based on use cases, matrix describes forty-four functional requirements identified for research data repository platforms and provides a score identifying relative importance.

### Research Data Repository Interoperability Primer
Set of use cases and an overview of standards, technologies and tools that could be components of an adoptable approach to facilitating interoperability between different research data repository platforms.

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# 6 Policy, Legal Compliance & Capacity

Currently, all scientific communities use their own set of policies, if any. A generic set of policies that can be revised and adapted by users to build up their own data collection does not exist.

## A curriculum for foundational Research Data Science skills for Early Career Researchers

This recommendation describes the curriculum and example materials to give Early Career Researchers (ECR's) the foundational skills in Data Science to work with their data.

## RDA & CODATA Legal Interoperability Of Research Data: Principles And Implementation Guidelines

A set of principles and practical implementation guidelines offered as high-level guidance to all members of the research community who are engaged in activities that involve access to and reuse of research data from diverse sources.

## Repository Audit and Certification DSA–WDS Partnership WG Recommendations

Creates harmonized Common Procedures for certification of repositories at the basic level, drawing from the procedures already put in place by the Data Seal of Approval (DSA) and the ICSU World Data System (ICSU-WDS).

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## RDA DMP Common Standard for Machine-actionable Data Management Plans

Allows representing Data Management Plans in a machine-actionable way, to enable exchange of information between systems acting on behalf of stakeholders involved in the research life cycle, such as, researchers, funders, repository managers, ICT operators, data stewards, etc

## Matrix of use cases and functional requirements for research data repository platforms

Based on use cases, matrix describes forty-four functional requirements identified for research data repository platforms and provides a score identifying relative importance.

## Persistent identifiers: Consolidated assertions

Set of assertions about the nature, creation and usage of Persistent Identifiers (PIDs). It is not meant to produce another comprehensive document on PIDs, but to identify agreements across documents that have been suggested to be included by experts.

## Recommendations for Implementing a Virtual Layer for Management of the Complete Life Cycle of Scientific Data

Brief summaries of the requirements and the current state of work on repositories, registries, identifiers, metadata, types, licenses, and, in general, the whole ecosystem of interlinked digital objects needed for managing the life cycle of scientific data.

## Results of an Analysis of Existing FAIR Assessment Tools

First result of the FAIR Data Maturity Model WG, based on the analysis of existing approaches related to FAIR self-assessment tools. Questions and options stemming from theses different approaches were classified according to the FAIR principles/facets.

## Summary of Virtual Layer Recommendations

Provides a high-level conceptual framework to support Digital Object management and service development.

## Engaging Researchers with Data Management: The Cookbook

Provides examples of 24 innovative, searchable and re-usable case studies on how institutions can effectively engage with researchers about research data.

## 23 Things: Libraries for Research Data

An overview of practical, free, online resources and tools that users can immediately take advantage of to incorporate research data management into the practice of librarianship.

## Addressing the Gaps: Recommendations for Supporting the Long Tail of Research Data

Seven recommendations applicable to various stakeholders - including governments, funders, research institutions and researchers - to help improve the current approach to managing long tail data.

## Data Discovery Paradigms: User Requirements and Recommendations for Data Repositories

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