The Research Data Alliance (RDA) in a nutshell

July 2019

THE RESEARCH DATA ALLIANCE
www.rd-alliance.org

building the social and technical bridges that enable open sharing of data

32 FLAGSHIP OUTPUTS

of which 4 ICT Technical Specifications

75 ADOPTION CASES

across multiple disciplines, organisations & countries

104 GROUPS WORKING ON GLOBAL DATA INTEROPERABILITY CHALLENGES

of which 35 WORKING GROUPS & 67 INTEREST GROUPS

8,642 INDIVIDUAL MEMBERS FROM 137 COUNTRIES

67,9% Academia & Research
14,2% Public Administration
12,7% Enterprise & Industry

50 ORGANISATIONAL MEMBERS & 8 AFFILIATE MEMBERS

Vision
Researchers and innovators openly share data across technologies, disciplines, and countries to address the grand challenges of society.

Mission
RDA builds the social and technical bridges that **enable open sharing** of data.

What is RDA?

RDA is an international **member based organization** focused on the development of infrastructure and community activities that reduce barriers to data sharing and exchange, and the acceleration of data driven innovation worldwide.

With more than 8,600 members globally representing 137 countries, RDA includes **researchers, scientists and data science professionals** working in multiple disciplines, domains and thematic fields and from different types of organisations across the globe.

RDA is building the social and technical bridges that enable open sharing of data to achieve its vision of researchers and innovators openly sharing data across technologies, disciplines, and countries to address the grand challenges of society.

What does RDA do?

Members come together through self-formed, volunteer, focussed Working Groups, exploratory Interest Groups to exchange knowledge, share discoveries, discuss barriers and potential solutions, explore and define policies and test as well as harmonise standards to enhance and facilitate global data sharing & re-use.

RDA members collaborate together across the globe to tackle numerous infrastructure & data sharing challenges related to:

- Reproducibility
- Data preservation
- Best practices for domain repositories
- Legal interoperability

- Data citation
- Data type registries
- Metadata
- and so many more!

MY DATA   MY TAX MONEY

MONEY FOR RESEARCH

DATA SHARING

Who Can Join RDA?

Any individual or organization, regardless of profession or discipline, with an interest in reducing the barriers to data sharing and re-use and who agrees to RDA's guiding principles of:

- ◦ *Openness*
- ◦ *Consensus*
- ◦ *Balance*
- ◦ *Harmonization*
- ◦ *Community-driven*
- ◦ *Non-profit and technology-neutral*

**Individual Membership is free @
https://www.rd-alliance.org/user/register**
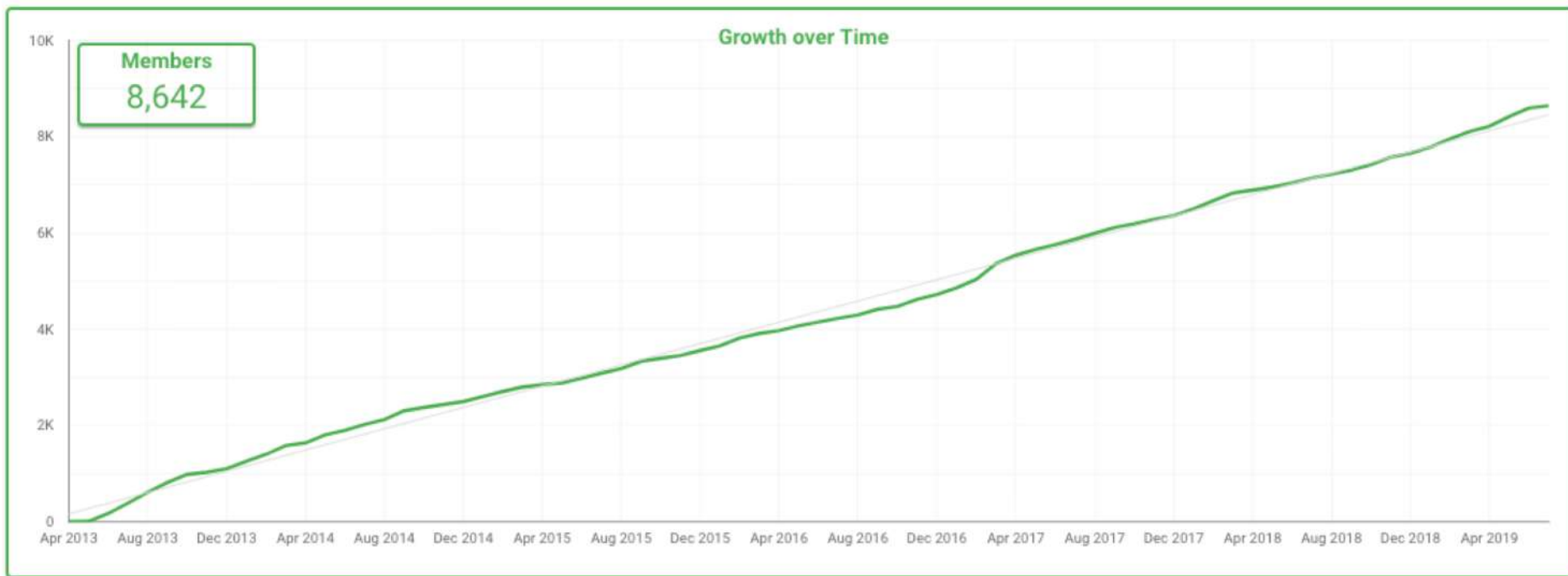
Why Join RDA as an Individual Member?

Individual Member Benefits

- *Contribute to acceleration of data infrastructure development*
- *Work and share experiences with collaborators throughout the world*
- *Access to extraordinary network of colleagues with various levels of experience, perspectives and practices*
- *Gain greater expertise in data science regardless of whether one is a student, early or seasoned career professional*
- *Enhance the quality and effectiveness of personal work and activities*
- *Improve one's competitive advantage professionally and positioning oneself for leadership within the broader research community*
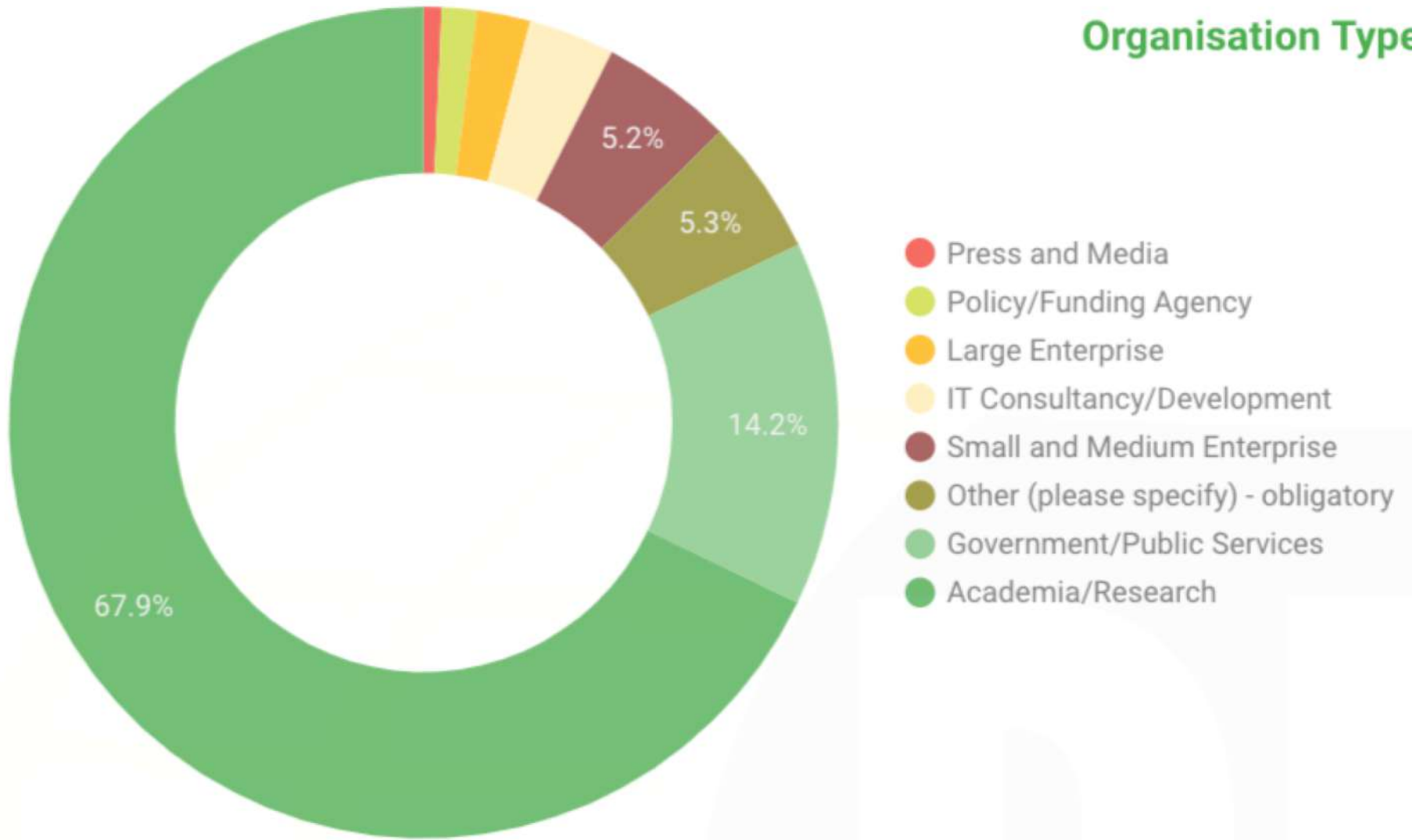
Individual RDA Members 8,642

Who is RDA

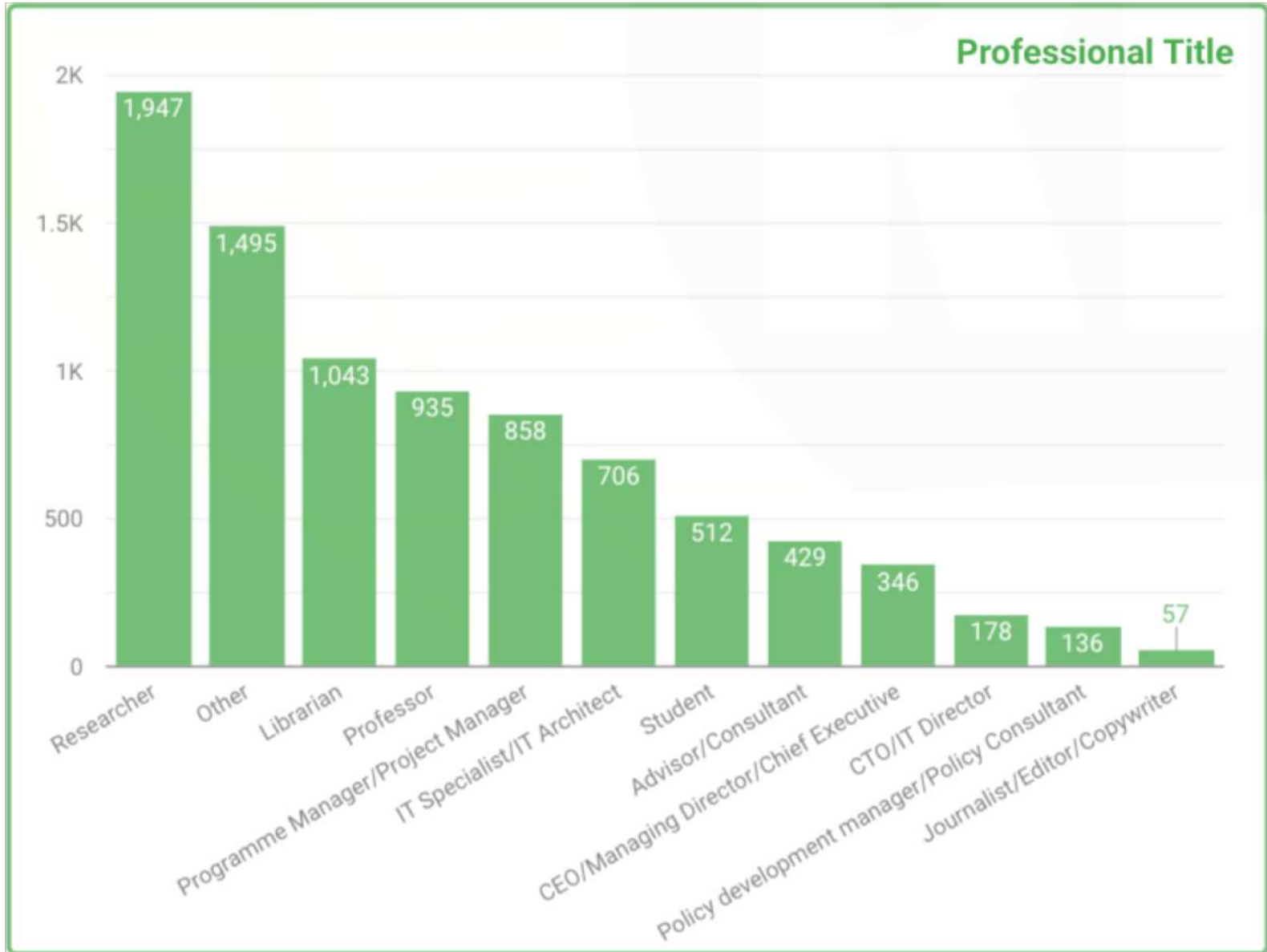**RDA Worldwide Growth**

Growth over Time

Members
8,642

Who is RDA

Organisation Type

- 5.2%
- 5.3%
- 14.2%
- 67.9%

Legend:
- Press and Media
- Policy/Funding Agency
- Large Enterprise
- IT Consultancy/Development
- Small and Medium Enterprise
- Other (please specify) - obligatory
- Government/Public Services
- Academia/Research

Who is RDA

Professional Title

Professional Title	Count
Researcher	1,947
Other	1,495
Librarian	1,043
Professor	935
Programme Manager/Project Manager	858
IT Specialist/IT Architect	706
Student	512
Advisor/Consultant	429
CEO/Managing Director/Chief Executive	346
CTO/IT Director	178
Policy development manager/Policy Consultant	136
Journalist/Editor/Copywriter	57

RDA Geographical Distribution

Worldwide distribution

1 — 2,072

Continent distribution

- Europe 51.5%
- North America 28%
- Asia 8%
- Africa 4.9%
- Oceania 4.5%
- South America
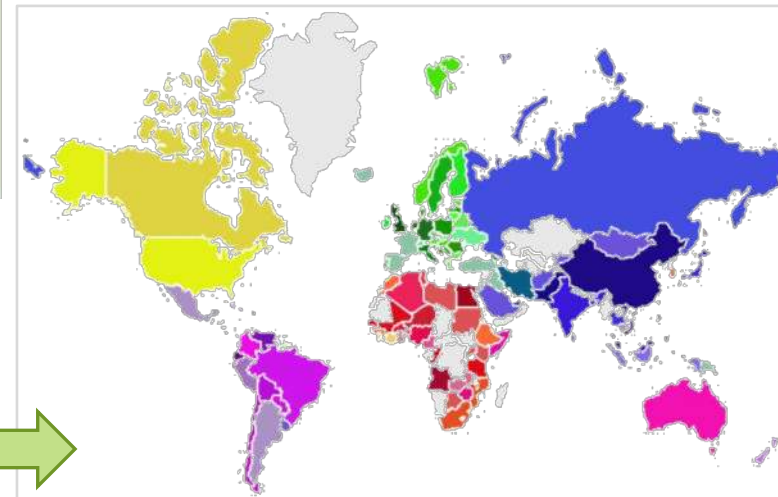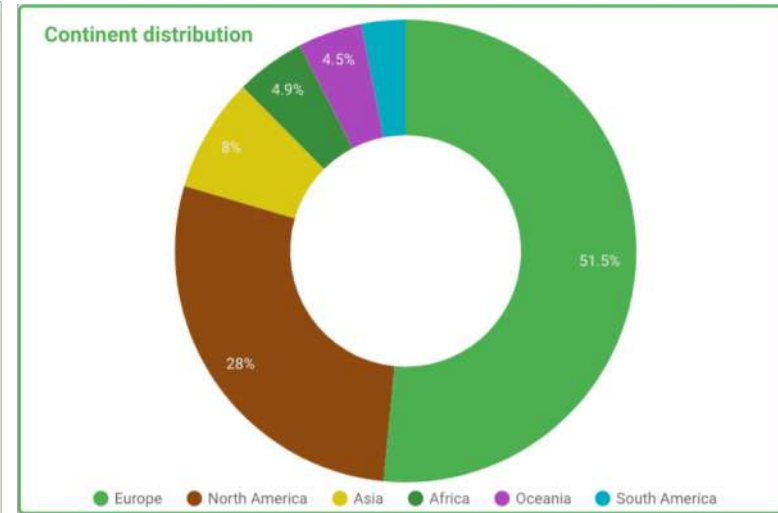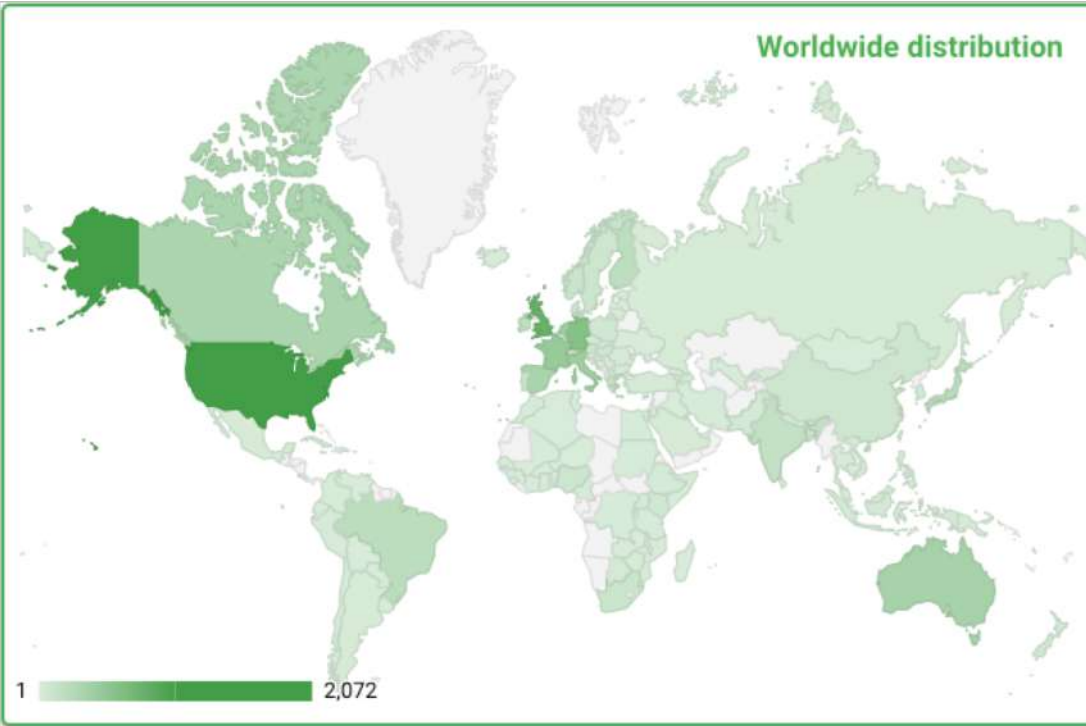
RDA members come from 137 different countries

Why Join RDA as an Organisational Member?

Organisational Member Benefits

- *Provide an **organizational perspective** on the work of RDA and ability to influence RDA's direction*

- *Assist in **implementation & adoption** of RDA Recommendations & Outputs*

- *Participate in all RDA Organizational Forums*

- *Receive regular **updates** on the work of the RDA*

- *Attend Organizational Assembly meetings and vote on **proposed policies** for consideration by the RDA Council and for members of the Organizational Advisory Board*

- *Provide **advice to RDA Council** through the Organizational Advisory Board*

- *Be recognized on the RDA Website and at RDA Meetings as a **supporter of data interoperability***

50 Organisational & 8 Affiliate Members

RDA Organisational & Affiliate Members

50 Organisational Members

8 Affiliate Members

https://rd-alliance.org/organisation/rda-organisation-affiliate-members.html

Total 102 groups:
35 Working Groups & 67 Interest Groups

Domain Science - focused

- **Agrisemantics WG**
- **FAIRSharing Registry WG**
- **Capacity Development for Agriculture Data WG**
- **On-Farm Data Sharing (OFDS) WG**
- **Rice Data Interoperability WG**
- **Wheat Data Interoperability WG**
- **Reproducible Health Data Services WG**
- **Preserving Scientific Annotation WG**
- Agricultural Data IG (IGAD)
- Biodiversity Data Integration IG
- Chemistry Research Data IG
- Digital Practices in History and Ethnography IG
- ESIP/RDA Earth, Space, and Environmental Sciences IG
- Geospatial IG
- Global Water Information IG
- Health Data IG
- Linguistics Data IG
- Marine Data Harmonization IG
- Quality of Urban Life IG
- RDA/CODATA Materials Data, Infrastructure & Interoperability IG
- Research data needs of the Photon and Neutron Science community IG
- Small Unmanned Aircraft Systems' Data IG
- Structural Biology IG
- Weather, Climate and Air quality IG
- From Observational Data to Information IG
- Social Sciences & Humanities Research Data IG
- Research Data Management in Engineering

Partnership Groups

- **RDA / TDWG Metadata Standards for attribution of physical and digital collections stewardship WG**
- **RDA/WDS Scholarly Link Exchange WG**
- **RDA/WDS Publishing Data Workflows WG**
- ELIXIR Bridging Force IG
- RDA/NISO Privacy Implications of Research Data Sets IG
- RDA/WDS Publishing Data IG

RDA active Interest (IG) & Working Groups (WG) by Focus (2)

Total 102 groups:
35 Working Groups & 67 Interest Groups

Reference and Sharing - focused

- **Data Citation WG**
- **Data Description Registry Interoperability WG**
- **Empirical Humanities Metadata WG**
- **International Materials Resource Registries WG**
- **Provenance Patterns WG**
- **Research Data Collections WG**
- **Research Data Repository Interoperability WG**

- **Data Usage Metrics WG**
- Data Discovery Paradigms IG
- National Data Services IG
- RDA/CODATA Legal Interoperability IG
- Reproducibility IG
- Sharing Rewards and Credit (SHARC) IG

Community Needs - focused

- **RDA/CODATA Summer Schools in Data Science and Cloud Computing in the Developing World WG**
- CODATA/RDA Research Data Science Schools for Low and Middle Income Countries
- Archives & Records Professionals for Research Data IG Data for Development IG
- Development of Cloud Computing Capacity and Education in Developing World Research IG
- Early Career and Engagement IG

- Education and Training on handling of research data IG
- Ethics and Social Aspects of Data IG
- International Indigenous Data Sovereignty IG
- Open Questionnaire for Research Data Sharing Survey IG
- Data for Development IG
- Research Funders and Stakeholders on Open Research and Data Management Policies and Practices IG

Total 102 groups:
35 Working Groups & 67 Interest Groups

Data Stewardship and Services – focused

- ☐ **Brokering Framework WG**
- ☐ **DMP Common Standards WG**
- ☐ **Exposing Data Management Plans WG**
- ☐ **WDS/RDA Assessment of Data Fitness for Use WG**
- ☐ **Data Versioning WG**
- ☐ **FAIR Data Maturity Model WG**
- ☐ Active Data Management Plans IG
- ☐ Data in Context IG
- ☐ Data Rescue IG
- ☐ Domain Repositories IG
- ☐ Virtual Research Environments IG
- ☐ Libraries for Research Data IG
- ☐ Long tail of research data IG
- ☐ Physical Samples and Collections in the Research Data Ecosystem IG
- ☐ Preservation e-Infrastructure IG

- ☐ Preservation Tools, Techniques, and Policies IG
- ☐ RDA/WDS Certification of Digital Repositories IG
- ☐ RDA/WDS Publishing Data Cost Recovery for Data Centres IG
- ☐ Repository Platforms for Research Data IG
- ☐ Research Data Architectures in Research Institutions IG
- ☐ Research Data Provenance IG
- ☐ Data policy standardisation and implementation IG
- ☐ GO FAIR IG
- ☐ Open Science Graphs IG

Base Infrastructure – focused

- ☐ **Array Database Assessment WG**
- ☐ **Data Type Registries WG**
- ☐ **Metadata Standards Catalog WG**
- ☐ **PID Kernel Information WG**
- ☐ **Persistent Identification of Instruments WG**
- ☐ **Software Source Code ID WG**
- ☐ Data Fabric IG
- ☐ Data Foundations and Terminology IG

- ☐ Disciplinary Interoperability Framework IG
- ☐ Big Data IG
- ☐ Brokering IG
- ☐ Metadata IG
- ☐ PID IG
- ☐ Software Source Code IG
- ☐ Vocabulary Services IG
- ☐ Federated Identity Management IG
- ☐ Data Economics IG

RDA Historical Groups

Historical Groups

- ❑ **Brokering Governance WG**
- ❑ **Metadata Standards Directory WG**
- ❑ **PID Information Types WG**
- ❑ **Practical Policy WG**
- ❑ **RDA/WDS Publishing Data Bibliometrics WG**
- ❑ **RDA/WDS Publishing Data Services WG**
- ❑ **Repository Audit and Certification DSA–WDS Partnership WG**
- ❑ **Data Foundations and Terminology WG**
- ❑ **Mapping the Landscape IG**

9 Groups

RDA Recommendations that make data work

"Create - Adopt - Use"

✓ Adopted code, policy, specifications, standards, or practices that enable data sharing

✓ "Harvestable" efforts for which 12-18 months of work can eliminate a roadblock

✓ Efforts that have substantive applicability to groups within the data community but may not apply to all

✓ Efforts that can start today

32 flagship recommendations & outputs with over 75 cases of adoption in different domains, organisations and countries

RDA Recommendations & Outputs

RDA Recommendations & Outputs

THE RDA OUTCOMES LEGEND
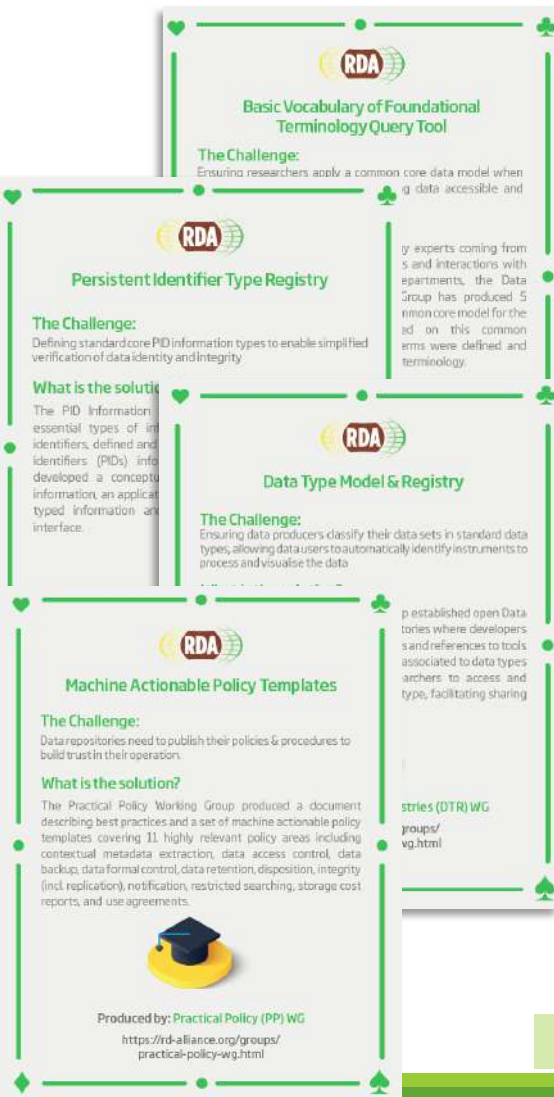
Recommendations: are the flagship outputs of RDA. They are RDA's equivalent of the "specifications" or "standards" that other organisations create and endorse. The process for creating and endorsing these is already defined.

Supporting Outputs: are the outputs of RDA WGs and IGs that are fruit of RDA work, but are not necessarily adoptable bridges. "Upon request", these sort of outputs go through a community comment period and if no major objections or gaps are identified they get the RDA Brand.

Other Outputs: include workshop reports, published articles, survey results, etc. Anything a WG or IG wants to register and report. Upon request, these are published and discoverable on the RDA website but have no level of endorsement.

RDA Recommendations

Data Foundation & Terminology Model: produced by the Data Foundation & Terminology WG which ensures researchers use a common terminology when referring to data.

PID Information Types API: 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.

The Data Type Registries Model: published by the Data Type Registries WG providing machine-readable and researcher-accessible registries of data types that support the accurate use of data

Practical Policies Recommendations: defining best practices of how to deal with data automatically and in a documented way with computer actionable policy.

rd-alliance.org/recommendations-and-outputs/all-recommendations-and-outputs

RDA Recommendations
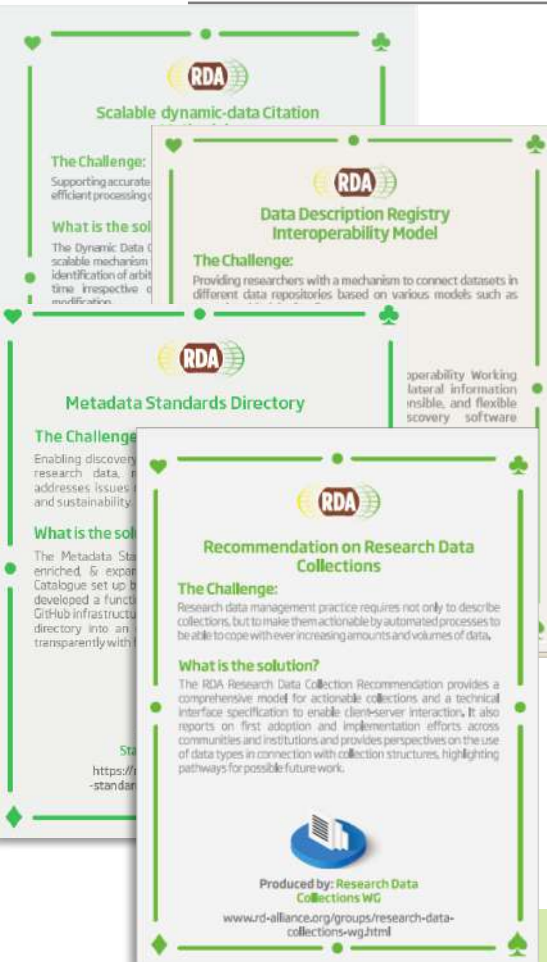
Dynamic-data Citation Methodology: Supports efficient processing of data and linking from publications.

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

Metadata standards directory Recommendations: Community curated standards catalogue for metadata interoperability

Research Data Collections Recommendations: A comprehensive model for actionable collections and a technical interface specification to enable client-server interaction.

rd-alliance.org/recommendations-and-outputs/all-recommendations-and-outputs

RDA Recommendations

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

Brokering Governance Recommendations: Sustainable Business Models for Brokering Middleware to support Research Interoperability

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

Research Data Repository Interoperability WG Final Recommendations: interoperable packaging and exchange format for digital content.

rd-alliance.org/recommendations-and-outputs/all-recommendations-and-outputs

RDA Recommendations

RDA/WDS Repository Audit and Certification Catalogues:
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).

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

Research Data Interoperability WG Final Recommendations:
Provides recommendations with respect to an interoperable
packaging and exchange format for digital content.
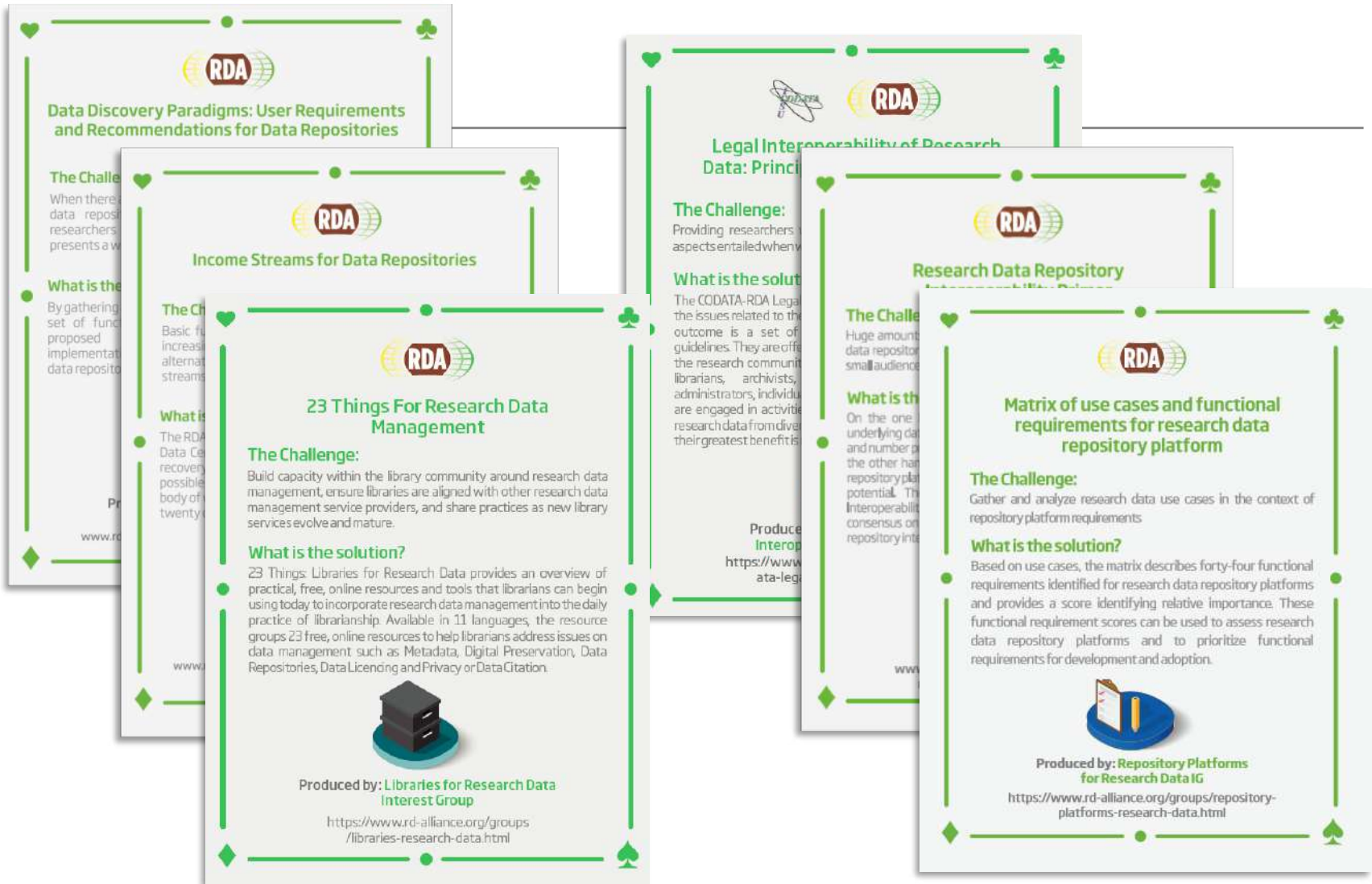
RDA Recommendations

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

FAIRsharing: standards, databases, repositories and policies - Final Recommendation: Guide for citation and its implementation in a registry of standards, databases and data policies

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.

PID Kernel Information Working Group: 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.

RDA Supporting Outputs

Data Discovery Paradigms: User Requirements and Recommendations for Data Repositories

The Challenge

When there [...]
data reposi[...]
researchers [...]
presents a w[...]

What is the [...]

By gathering [...]
set of func[...]
proposed [...]
implementat[...]
data reposito[...]

Income Streams for Data Repositories

The Ch[...]

Basic fu[...]
increasi[...]
alternat[...]
streams[...]

What is [...]

The RDA [...]
Data Ce[...]
recovery [...]
possible [...]
body of [...]
twenty [...]

23 Things For Research Data Management

The Challenge:

Build capacity within the library community around research data management, ensure libraries are aligned with other research data management service providers, and share practices as new library services evolve and mature.

What is the solution?

23 Things: Libraries for Research Data provides an overview of practical, free, online resources and tools that librarians can begin using today to incorporate research data management into the daily practice of librarianship. Available in 11 languages, the resource groups 23 free, online resources to help librarians address issues on data management such as Metadata, Digital Preservation, Data Repositories, Data Licencing and Privacy or Data Citation.

Produced by: Libraries for Research Data Interest Group

https://www.rd-alliance.org/groups /libraries-research-data.html

Legal Interoperability of Research Data: Princi[...]

The Challenge:

Providing researchers [...]
aspects entailed when [...]

What is the solut[...]

The CODATA-RDA Lega[...]
the issues related to th[...]
outcome is a set of [...]
guidelines. They are offe[...]
the research communit[...]
librarians, archivists, [...]
administrators, individu[...]
are engaged in activitie[...]
research data from dive[...]
their greatest benefit is [...]

Produce[...]
Interop[...]
https://www[...]
ata-leg[...]

Research Data Repository Interoperability Primer

The Challe[...]

Huge amount[...]
data reposit[...]
small audience[...]

What is th[...]

On the one [...]
underlying da[...]
and number p[...]
the other han[...]
repository pla[...]
potential. Th[...]
Interoperabilit[...]
consensus on[...]
repository inte[...]

Matrix of use cases and functional requirements for research data repository platform

The Challenge:

Gather and analyze research data use cases in the context of repository platform requirements

What is the solution?

Based on use cases, the matrix describes forty-four functional requirements identified for research data repository platforms and provides a score identifying relative importance. These functional requirement scores can be used to assess research data repository platforms and to prioritize functional requirements for development and adoption.

Produced by: Repository Platforms for Research Data IG

https://www.rd-alliance.org/groups/repository-platforms-research-data.html

RDA Supporting Outputs

23 Things: Libraries For Research Data:
An overview by of practical, free, online resources and tools that users can immediately take advantage of to incorporate research data management into the practice of librarianship.

A survey of current practices in data search services:
based on an examination of practices that data repositories employ in helping users search their holdings and common data discovery issues, such as relevancy.

Addressing the Gaps: Recommendations for Supporting the Long Tail of Research Data:
seven recommendations for a variety of 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**:
help data repositories improve search and discovery of their data.

Eleven Quick Tips for Finding Research Data:
to educate and train research students and early career researchers, and to help researchers more effectively and precisely discover data that meets their specific needs.

RDA Supporting Outputs

Income Streams for Data Repositories:
insight for Data Centre managers and Research Infrastructures into alternative options for cost recovery, substantiated by the results from a survey of over twenty data centres around the globe, and in different domains.

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 the access to and reuse of research data from diverse sources.

Matrix of use cases and functional requirements for research data repository platforms:
Based on use cases, the 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 initial use cases, as well as an overview of standards, technologies and tools that could be components of an agreed adoptable approach to facilitating interoperability between different research data repository platforms.

RDA Supporting Outputs

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

Summary of Virtual Layer Recommendations:
Provides a high-level conceptual framework to support Digital Object management and service development.

Federated Identity Management for Research Collaborations:
common requirements of Research Communities seeking to leverage Identity Federation for Authentication and Authorisation

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.

The RDA CoreTrustSeal adoption story across domains and regions

Recent **Adoption Story**
Data Archiving and Networked Services (DANS)

RDA ADOPTION STORY

The RDA CoreTrustSeal adoption story across domains and regions

The Repository Audit and Certification Catalogues, a two-part recommendation produced by the RDA Repository Audit and Certification DSA–WDS Partnership WG created a common procedures and requirements for certification of repositories at the core level, drawing from the procedures and catalogues of criteria already put in place by the DSA and WDS. On the basis of this effort, the DSA and the WDS Certification of Regular Members merged into the CoreTrustSeal, thereby gradually replacing these predecessor certification standards.

CoreTrustSeal offers to any interested data repository a core level certification based on the DSA–WDS Core Trustworthy Data Repositories Requirements catalogue and procedures.

Call for Supporting and Other RDA Outputs

RDA Recommendations and Outputs take the form of technical specifications, code, policies or practices, harmonized standards or reference models. In the widest sense these aim for:

- ☐ Greater data sharing, exchange, interoperability, usability and re-usability;
- ☐ Greater discoverability of research data sets;
- ☐ Better management, stewardship, and preservation of research data;
- ☐ New data standards or harmonization of existing standards.

Become one of the next RDA adopters!
If you are interested in any of the RDA's recommendations or would like to share your group's results with our international community, please fill the contact form at https://www.rd-alliance.org/interest-rda-recommendations or write to enquiries@rd-alliance.org.

What are Plenary Meetings?

- Organised around the world every 6 months
- exciting & productive events bringing together a unique community of **data science professionals, from multiple disciplines and domains**;
- help move the community forward in **creating tangible deliverables** that improve data sharing across disciplines, technologies, and countries;
- heart of the plenaries are working meetings of **RDA Working & Interest groups** and new potential groups through **Birds of a Feather** meetings
- presentation of new **Outputs and Adoption** cases

RDA Plenary Meetings: benefits of attending

Exchange knowledge, share discoveries, discuss barriers and potential solutions

Learn about new trends, strategies, research developments, directions and policies

Expand your network and meet new committed and passionate data science professionals, working in multiple disciplines
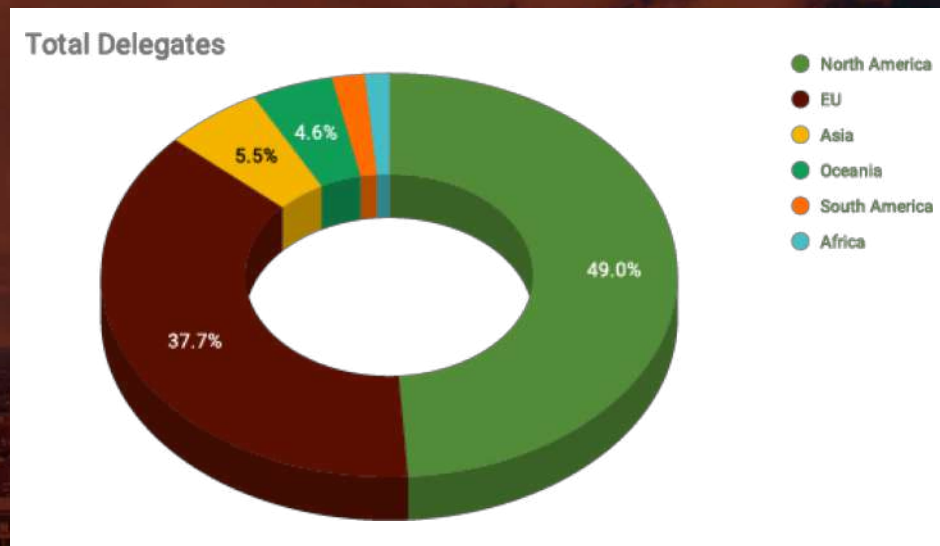
Contribute to acceleration of data infrastructure development

RDA Plenary 13

Held on 2 - 4 April 2019
Philadelphia, PA

Total Participants: 435

Total Delegates

- North America
- EU
- Asia
- Oceania
- South America
- Africa

49.0%
37.7%
5.5%
4.6%

Attendees at P13

Continent	Countries	Total Delegates
North America	2	213
Europe	17	164
Asia	7	24
Oceania	1	20
South America	3	8
Africa	4	6

62 breakout meetings over the 8 allocated RDA sessions.
13 of those were Birds of a Feather (BoF),
13 working groups
30 Interest groups
14 joint group meetings to cross fertilise amongst groups with a common interest or activity focus.

Organised by: RESEARCH DATA ALLIANCE U.S. | Drexel UNIVERSITY

rd-alliance.org/plenaries

RDA in a Nutshell

WWW.RD-ALLIANCE.ORG/
@RESDATALL

RDA Global

Email - enquiries@rd-alliance.org
Web - www.rd-alliance.org
Twitter - @resdatall
LinkedIn - www.linkedin.com/in/ResearchDataAlliance
Slideshare - http://www.slideshare.net/ResearchDataAlliance

RDA Europe
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Twitter - @RDA_Europe

RDA US
Twitter - @RDA_US