



# RDA in a nutshell

Warsaw, 28 January 2017

Leif Laksonen/RDA Europe 3

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# THE RESEARCH DATA ALLIANCE

[www.rd-alliance.org](http://www.rd-alliance.org)

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

## 17 FLAGSHIP OUTPUTS

of which 4 ICT  
Technical  
Specifications

## 75 ADOPTION CASES

across multiple  
disciplines,  
organisations &  
countries

## 84 GROUPS WORKING ON GLOBAL DATA INTEROPERABILITY CHALLENGES

of which 35 WORKING GROUPS  
& 49 INTEREST GROUPS

## 4,788 INDIVIDUAL MEMBERS FROM 117 COUNTRIES

66% Academia & Research  
15% Public Administration  
11% Enterprise & Industry

## 46 ORGANISATIONAL MEMBERS & 6 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?

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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 4,780 members globally representing 117 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.*

# From DAITF/DWF to RDA

- The effort started as bottom-up activities in US and Europe and supported by NSF, NIST, Presidential Office and European Commission (EC)
- The **Data Access and Interoperability Task Force** (DAITF) grew as an offspring to EUDAT and OpenAIRE with the help from the EC
  - Meeting in Lyon September 2011
  - Pre-ICRI DAITF Preparation Workshop, Copenhagen, 20/21 March 2012
- RDA Europe project proposal refining the concept of the DAITF (EU) 2011 – with a project start 1 September 2012
- Concept Paper – **Data Web Forum** (US) presented in 2012
- RDA Global Steering Group was established in August 2012 (high level push by NSF + EC + AU)
- “Research Data Alliance Planning Meeting: Global Data” 1 – 3 October 2012 in Washington DC
- EUDAT 1st Conference in Barcelona 22-24 October 2012 had several presentations about the RDA Global and a broad discussion about data interoperability/re-use
- The first RDA Council members announced in Barcelona 2012 during the EUDAT conference: Fran Berman (US), John Wood (EU), Ross Wilkinson (AU)
- **RDA Global launched in Gothenburg on the 18<sup>th</sup> March 2013**

# 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!



# 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?

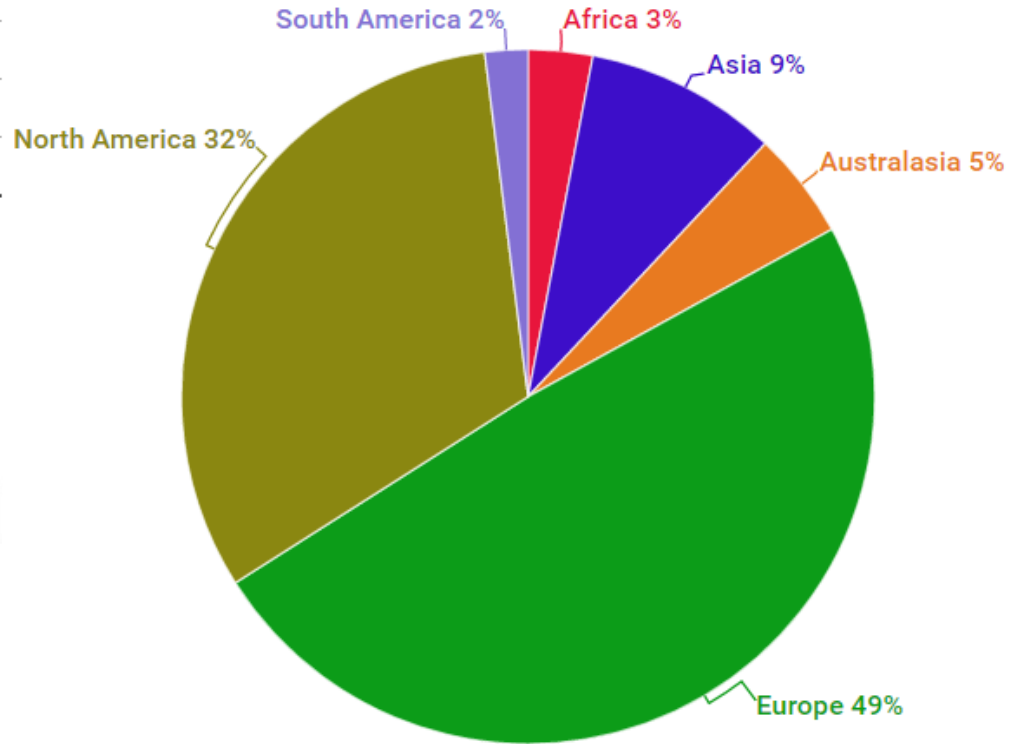
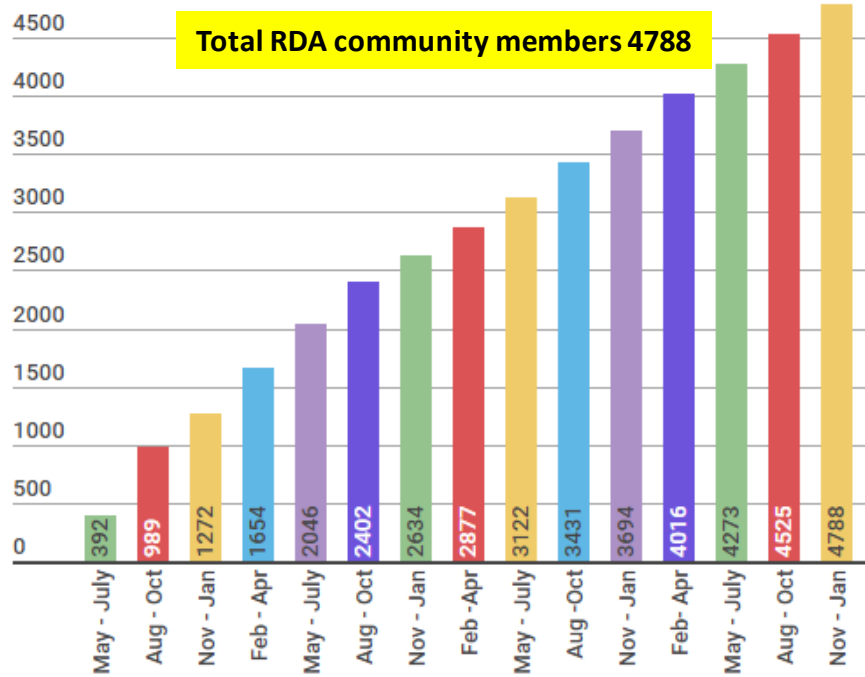
## Individual Member Benefits

- **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 4788**

# RDA worldwide growth

Total RDA community members 4788

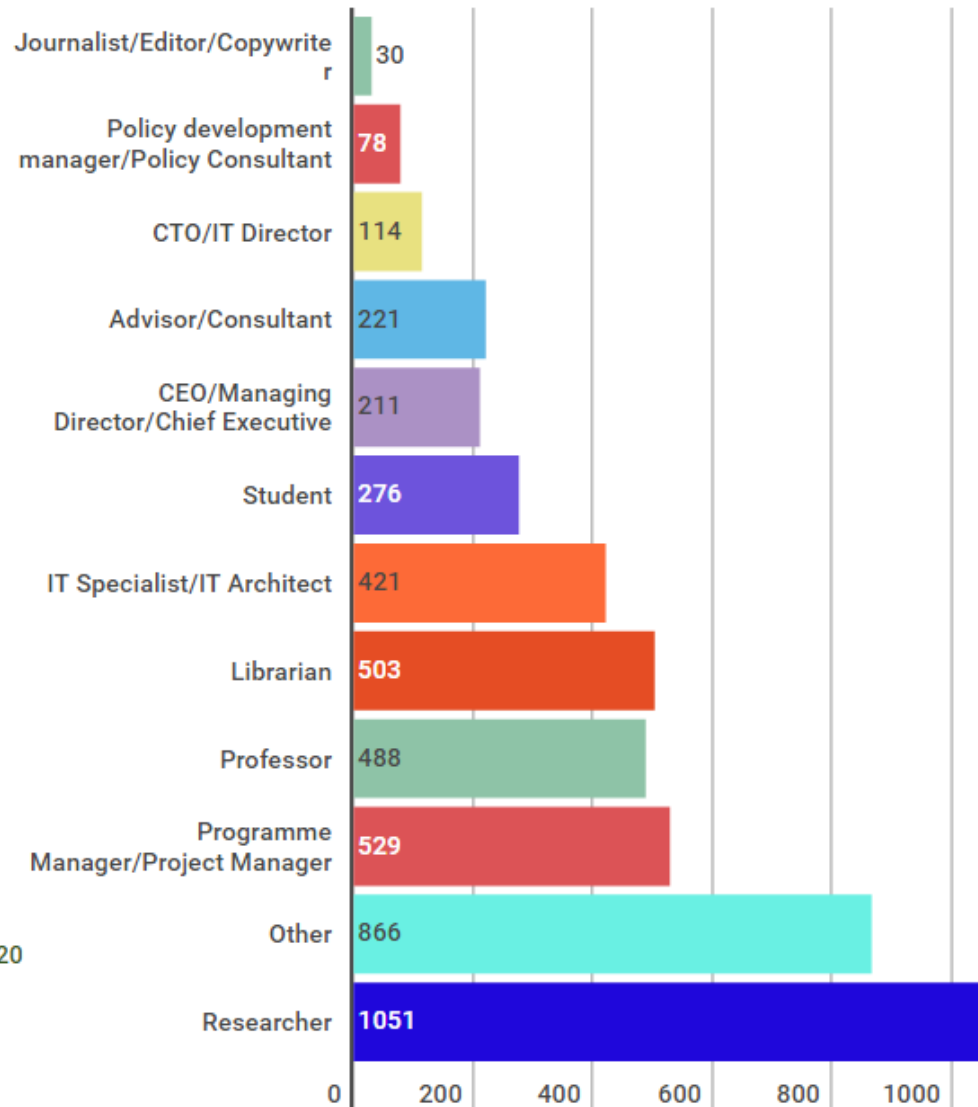
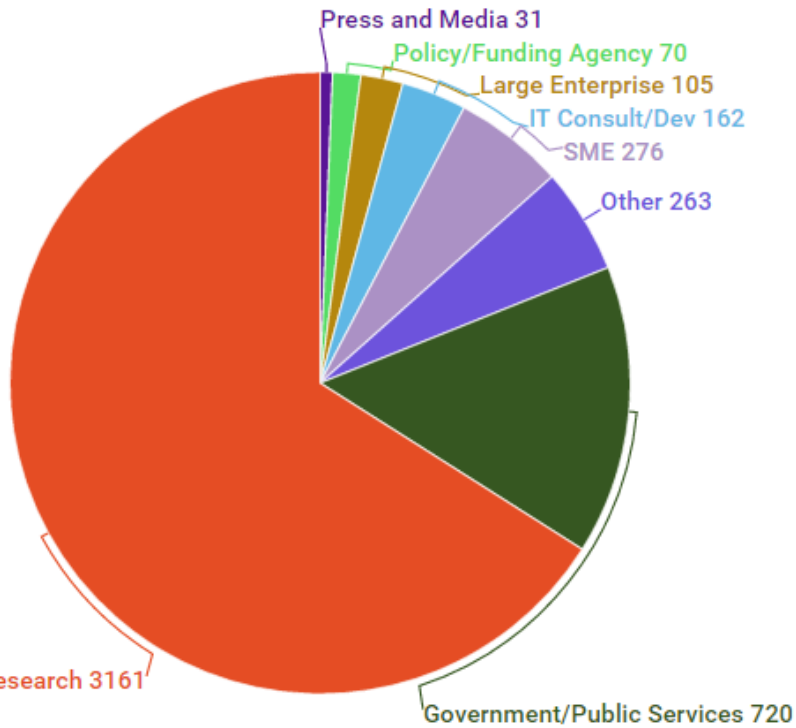


117 Countries





# Who is RDA?



# 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**

**46 Organisational & 6 Affiliate Members**

# Organisational & Affiliate Members

**46 RDA Organisational Members**



**6 RDA Affiliate Members**



# RDA Interest (IG) & Working Groups (WG) by Focus (1)

Total 84 groups:  
35 Working Groups & 49 Interest Groups

## Domain Science - focused

- Agrisemantics WG**
- BioSharing Registry WG**
- Fisheries Data Interoperability WG**
- On-Farm Data Sharing (OFDS) WG**
- Rice Data Interoperability WG**
- Wheat Data Interoperability WG**
- Agriculture Data IG (IGAD)
- Biodiversity Data Integration IG
- Chemistry Research Data IG
- Digital Practices in History and Ethnography IG

- Geospatial IG
- Global Water Information IG
- Health Data IG
- Mapping the Landscape 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

## Community Needs - focused

- Data Science and data-related education and training certification and accreditation schemes WG**
- RDA/CODATA Summer Schools in Data Science and Cloud Computing in the Developing World WG**
- Teaching TDM on Education and Skill Development WG**
- Archives & Records Professionals for Research Data IG

- Data for Development IG
- Development of Cloud Computing Capacity and Education in Developing World Research IG
- Education and Training on handling of research data IG
- Ethics and Social Aspects of Data IG

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

Total 84 groups:  
35 Working Groups & 49 Interest Groups

## Reference and Sharing - focused

- Data Citation WG
- Data Description Registry Interoperability WG
- Data Security and Trust WG
- Empirical Humanities Metadata WG
- RDA / WDS Publishing Data Bibliometrics WG
- Research Data Collections WG
- QoS-DataLC Definitions WG
- International Materials Resource Registries WG
- National Data Services IG
- RDA/CODATA Legal Interoperability IG
- Reproducibility IG
- Data Discovery Paradigms IG
- Repository Core Description WG
- Research Data Repository Interoperability WG

## Partnership Groups

- RDA / TDWG Metadata Standards for attribution of physical and digital collections stewardship WG
- RDA/NISO Privacy Implications of Research Data Sets IG
- RDA/WDS Scholarly Link Exchange Working Group
- Repository Audit and Certification DSA-WDS Partnership WG
- RDA/WDS Publishing Data IG
- ELIXIR Bridging Force IG

# RDA Interest (IG) & Working Groups (WG) by Focus (3)

Total 84 groups:  
35 Working Groups & 49 Interest Groups

## Data Stewardship and Services – focused

- Brokering Framework WG**
- Brokering Governance WG**
- WDS/RDA Assessment of Data Fitness for Use WG**
- RDA / WDS Publishing Data Services WG**
- RDA / WDS Publishing Data Workflows WG**
- Active Data Management Plans IG
- Data in Context IG
- Data Rescue IG
- Data Versioning IG

- Domain Repositories IG
- Libraries for Research Data IG
- Long tail of research data 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 Provenance IG
- Virtual Research Environments IG

## Base Infrastructure – focused

- Array Database Assessment WG**
- Data Foundation and Terminology WG**
- Data Type Registries WG**
- Metadata Standards Catalog WG**
- Metadata Standards Directory WG**
- PID Information Types WG**
- PID Kernel Information WG**
- Practical Policy WG**

- Data Fabric IG
- Data Foundations and Terminology IG
- Big Data IG
- Brokering IG
- Federated Identity Management IG
- Metadata IG
- PID IG
- Vocabulary Services IG

# RDA Recommendations that make data work

## “Create - Adopt - Use”

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- ✓ 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

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



# 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.



# Adoption & Implementation

*“Solving the problem must include **adopters** in the process, to ensure that real problems are addressed. Open problem solving is the key.”*

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.

## RECOMMENDATIONS & OUTPUTS

All Recommendations & Outputs

Adoption Use Cases

Become an RDA Adopter



### Addressing data challenges

<https://www.rd-alliance.org/recommendations-and-outputs/all-recommendations-and-outputs>



### 75 Adoption Cases

<https://www.rd-alliance.org/recommendations-and-outputs/adoption-recommendations>

## Find out how you can become an Adopter

<https://www.rd-alliance.org/recommendations-and-outcomes/become-rda-adopter>

**The Adoption**

The Adoption process involves in the following:

- (1) the realization of a mapping between the OpenRD Recommendation and the RDA format;
- (2) the realization of OpenRD metadata to include the RDA format;
- (3) the realization of OpenRD metadata to include the RDA format;
- (4) the realization of OpenRD metadata to include the RDA format;

The RDA Service is being proposed in a production level as OpenRD service configuration of OpenRD metadata and will be OpenRD Information Data with transformation services to handle the data services by loading the service as an exchange format exposed to the RDA service OpenRD data source and registering to OpenRD.

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**Lessons Learnt**

Clearly data service definition and open metadata, the RDA Service is being proposed in a production level as OpenRD service configuration of OpenRD metadata and will be OpenRD Information Data with transformation services to handle the data services by loading the service as an exchange format exposed to the RDA service OpenRD data source and registering to OpenRD.

## RDA Adoption Stories - Tell us yours!

RESEARCH DATA ALLIANCE

### DKRZ adopts 6 RDA outputs for climate data modelling

DKRZ is integrating permanent identifier for use cases supporting precise data tracking, automated replication and versioning, custom and early data creation into the Earth System Grid Federation data infrastructure which supports ICS3 Climate data provisioning. This requires alternative ID information to be interoperable across multiple services and tools and formulating community specific ID profiles. Furthermore, future automated processing workflows could leverage such information as well if bound to specific data type and branched through a dedicated service.

**The Challenge**

“Current data management practices still rely largely on managing files and directories in file systems. Factors such as the relative increase of data volume compared to available network bandwidth and the easy availability of remote and on-demand computing resources are drivers behind bringing processing and data closer together. National and international policy changes in Earth Science funding may also impact on the ability and expectations of individual data service users.”

Says Tobias Weigel, a Computer scientist at the adopting organisation, Deutsches Klimarechenzentrum (DKRZ):

Together, these factors lead to scenarios where it will be increasingly difficult to manage data on a per-file or per-directory basis and deal with data transfer, replication and the cycle management in a comparatively low level of automation. Future tools may increasingly hide the location and structure of scientific data objects from the user, resulting more intelligence from back-end services. Services that provide easy data presentation and processing and make data provenance transparent may be particularly valuable for interdisciplinary users unfamiliar with established community practices.

Weigel continues: “Without solutions that increase automation, some of maintaining services will increase, which would have a devastating effect on service quality or mean resources available for developing new services required for future user demands. Past experience has shown that many tasks such as data transfer or replication suffer from manual intervention required as long as no comprehensive data tracking solution is in place. Such tasks may take up even more resources given that the data volume and number of objects to manage increase exponentially.”

**RDA RECOMMENDATIONS ADOPTED**

Data Recommendation and Terminology simplify understanding and communication about basic concepts such as digital objects and persistent identifiers.

File Information Types: describe ID record profiles and formats from types provided across communities.

Data Fabric: gain a better understanding of digital objects and their contexts concerning operations and storage development.

Basic Types: implement types for information types and eventually link types with processing services.

Byzantine Data Challenge: clarify data creation procedures and data representation options for potentially unreliable data.

**ANSWERING COMMUNITY NEEDS**

The community that benefits from individual programs across data management processes across multiple organisations internationally. Of particular interest within the European context is the European framework for Earth System Modelling (ESM). The breadth of scientific and user communities beyond the core climate modelling community can involve other disciplines such as climate impact research, adaptation and mitigation policies, public services, agriculture and so on, as climate change is a global phenomenon and challenge and touches on a huge number of areas.

**WHY RDA**

RDA can best be found as a venue where experts from different disciplines and shaped by different community practices can combine their collective knowledge to build mutually workable solutions. While manageable time spans, the RDA support to move to other adoption cases achieved by providing known application scenarios and long-term challenges and finding good matches with manageable goals with the existing solutions needed.

Find out more  
Visit RDA @ rd-alliance.org  
Email: [enquiries@rd-alliance.org](mailto:enquiries@rd-alliance.org)

<https://www.rd-alliance.org/recommendations-and-outputs>

Adopting RDA Outputs for Climate

# 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

# INTERNATIONAL DATA WEEK 2016

WWW.INTERNATIONALDATAWEEK.ORG

DENVER, COLORADO, US

11-17 SEPTEMBER 2016

Organized by:



## ▪ RDA deliverables presented:

- RDA/CODATA Summer Schools in Data Science and Cloud Computing in the Developing World WG
- Brokering Governance WG
- Metadata Standards Catalog WG Recommendations
- Biosharing Registry WG Recommendations
- Scholix Framework
  - + 6 Adoption cases

## ▪ 69 Breakout session meetings:

- 12 BoF Meetings
- 31 Interest group meetings
- 10 Working group meetings
- 16 Joint group meetings
- 69 Breakout sessions

## ▪ Newcomers Session, 2 RDA organisational members meeting, TAB and Chairs session

- RDA/EU sponsored 8 European Early Career Researchers and Scientists & RDA/US sponsored 8 Fellowship
- 42 posters on display



**RESEARCH DATA ALLIANCE**  
8th Plenary Meeting

15-17 September 2016  
Denver, Colorado, US

549 participants from 33 countries





# **RDA 9th Plenary Meeting**

## **Data Infrastructures for Open Science**

**5-7 April 2017, Barcelo Sants Hotel,  
Barcelona, Spain**

Organised by Barcelona Supercomputing Center (BSC) with the support of RDA Europe



The 9th RDA Plenary Meeting will take place from 5th to 7th April 2017 at the Barcelo Sants Hotel, Barcelona, Spain. The plenary meeting is organised by the Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS) with the support of RDA Europe.

<https://www.rd-alliance.org/plenaries/rda-ninth-plenary-meeting-barcelona>

*Looking forward to seeing you all in Barcelona!*



# Early Career Support Programme

Call for applications



RDA Europe is offering travel support to Early Career European Researchers & Scientists working with Data to attend the 9th RDA Plenary meeting, Barcelona, Spain, 5-7 April 2017.

Closed!

~~APPLICATIONS are due 31 January 2017, midnight CET~~

~~<https://www.rd-alliance.org/rda-eu-early-career-support-programme-rda-9th-plenary>~~

New opportunities for the autumn Plenary!

# RDA 10<sup>th</sup> ème



Montréal, Canada  
19-21 September 2017  
*19 au 21 septembre 2017*

Plenary Meeting  
*Conférence plénière*

The 10th RDA Plenary Meeting will take place from 19 to 21 September 2017 in Montreal, Canada. The meeting is co-organised by RDA, the University of Montreal and Research Data Canada, Canada.

<https://www.rd-alliance.org/plenaries/rda-tenth-plenary-meeting-montreal-canada>

## RDA in a Nutshell

[WWW.RD-ALLIANCE.ORG/](http://WWW.RD-ALLIANCE.ORG/)  
[@RESDATALL](https://twitter.com/RESDATALL)

LEIF LAAKSONEN  
[LEIF.LAAKSONEN@CSC.FI](mailto:LEIF.LAAKSONEN@CSC.FI)



### RDA Global

**Email - [enquiries@rd-alliance.org](mailto:enquiries@rd-alliance.org)**

**Web - [www.rd-alliance.org](http://www.rd-alliance.org)**

**Twitter - [@resdatall](https://twitter.com/resdatall)**

**LinkedIn -**

**[www.linkedin.com/in/ResearchDataAlliance](http://www.linkedin.com/in/ResearchDataAlliance)**

**Slideshare -**

**<http://www.slideshare.net/ResearchDataAlliance>**

### RDA Europe

**Email - [info@europe.rd-alliance.org](mailto:info@europe.rd-alliance.org)**

**Web - [europe.rd-alliance.org](http://europe.rd-alliance.org)**

**Twitter - [@RDA\\_Europe](https://twitter.com/RDA_Europe)**

### RDA US

**Twitter - [@RDA\\_US](https://twitter.com/RDA_US)**