



**ESCAPE**

European Science Cluster of Astronomy &  
Particle physics ESFRI research Infrastructures

# The RDA FAIR Data Maturity Model Licences in Astronomy

**Françoise Genova**

**Work done with François Bonnarel (CDS), Marco Molinaro (INAF),  
Mark Allen (CDS)**

**IVOA Virtual Interoperability Meeting**

**May 2020**

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.



# The Research Data Alliance



Research Data Sharing  
without barriers

- Created in 2013 by the Australian government, the European Commission and the NSF (USA)
- A neutral, open, international forum to discuss all the aspects of scientific data sharing and produce recommendations and other outputs
- Yesterday 10 599 members from Today 9778 members from 144 countries
- 103 Working Groups and Interest Groups tackling many different subjects – technological and sociological
- <https://www.rd-alliance.org/>



# We are not the only ones...



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RDA 15th Plenary Meeting - Au X

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## RDA 15th Plenary Meeting - Australia

Home » Plenaries » RDA 15th Plenary Meeting - Australia



15th Research Data Alliance Plenary Meeting  
Melbourne Convention and Exhibition Centre, MCEC  
Data for Real-World Impact  
18-20 MARCH 2020  
#rdaplenary  
www.rd-alliance.org

**10 APR 2020** RDA 15th Plenary Meeting - Australia

**Friday 10th April 2020 update**

Thank you for participating in RDA's VP15! We are so grateful to CSIRO, AARNet and Australian Research Data Commons (ARDC) for their support and to you, our RDA community, for your involvement.

A special congratulations to Katarzyna Biernacka, the winner of the VP15 Poster Session who received the most votes from our virtual attendees, for her poster titled 'The Missing Data - The Relationship Between Legal Requirements and Open Research Data'.

- 15th Plenary - Participant Survey
- RDA Virtual Plenary Programme
- 15th Plenary - Virtual Poster Session
- RDA 15th Plenary - Our Host, Supporters and Sponsors
- RDA Remote Meeting Guide
- Update on Plenary 15 Refunds

**Next Event**

**RDA COVID-19 Update Webinar**

Webinar on **Tuesday May 5th - 11:00 Universal Time**



# Many relevant activities, among which...

- Data Repository Audit and Certification Recommendation >>> Core Trust Seal



➤ Discussed at Paris Interop, May 2019, DCP Session

- FAIR Data Maturity Model Working Group
  - Core criteria for FAIR data



**The FAIR guiding principles:** <https://doi.org/10.1038/sdata.2016.18>

*To be Findable:*

- F1. (meta)data are assigned a globally unique and persistent identifier
- F2. data are described with rich metadata (defined by R1 below)
- F3. metadata clearly and explicitly include the identifier of the data it describes
- F4. (meta)data are registered or indexed in a searchable resource

*To be Accessible:*

- A1. (meta)data are retrievable by their identifier using a standardized communications protocol
  - A1.1. the protocol is free, open and universally implementable
  - A1.2. the protocol allows for an authentication and authorization procedure, where necessary
- A2. metadata are accessible, even when the data are no longer available

*To be Interoperable:*

- I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation
- I2. (meta)data uses vocabularies that follow FAIR principles
- I3. (meta)data include qualified references to other (meta)data

*To be reusable:*

- R1. (meta)data are richly described with a plurality of accurate and relevant attributes
  - R1.1. (meta)data are released with a clear and accessible data usage license
  - R1.2. (meta)data are associated with data provenance
  - R1.3. (meta)data meet domain relevant community standards

Figure 2. The FAIR guiding principles

Wilkinson et al. 2016, Scientific Data **3**, 160018



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FAIR Data Maturity Model WG X

https://www.rd-alliance.org/groups/fair-data-maturity-model-wg

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Home Working and Interest Groups Working Group FAIR Data Maturity Model WG

## WG FAIR Data Maturity Model WG

Taxonomy:

Posts Create Wiki index Events Repository Outputs Case Statements Plenaries Members create new content

Group Status: ● WGs Wrapping up (from ~12 months after RDA endorsement) ● Leave Group

**i**

**NEW! February 2020:** In order to make it easier for you to collaborate with your teams, we have improved the user experience of your Groups' online space. A series of icons and labels now guide your activity and help you post messages to the group members, create and organise wiki pages, send events' announcements, publish and organise the outputs and case statements resulting from your group's activity and browse all the members of your Group. One new area also collects the Plenary sessions your group contributed to.

We hope that you'll find this useful! Please do not hesitate to send your comments and suggestions to the [RDA Secretariat here](#).

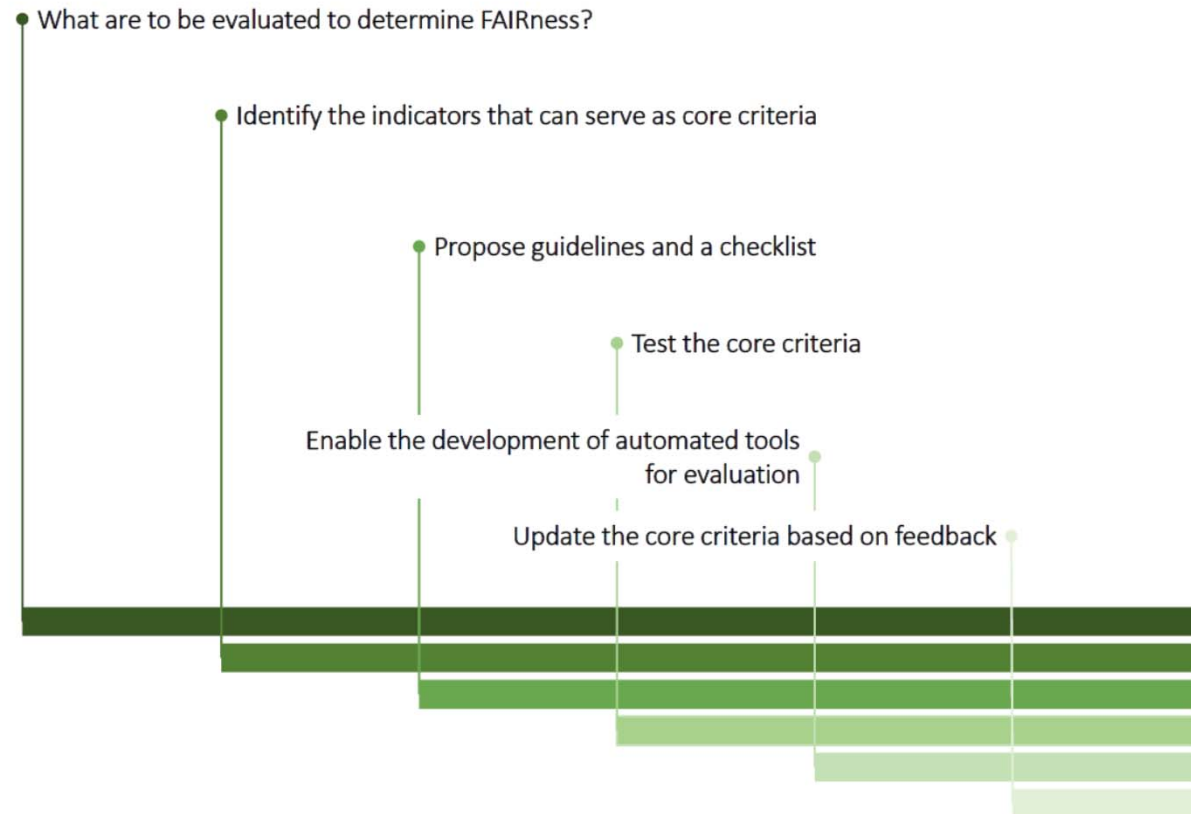
**Status:** Recognised & Endorsed  
**Chair (s):** Edit Herczog, Keith Russell, Shelley Stall  
**Group Email:** [fair\\_maturity@rda-groups.org](mailto:fair_maturity@rda-groups.org)  
**Secretariat Liaison:** Stefanie Kethers



# The WG Objectives and timeline

## Objectives

FAIR data maturity model

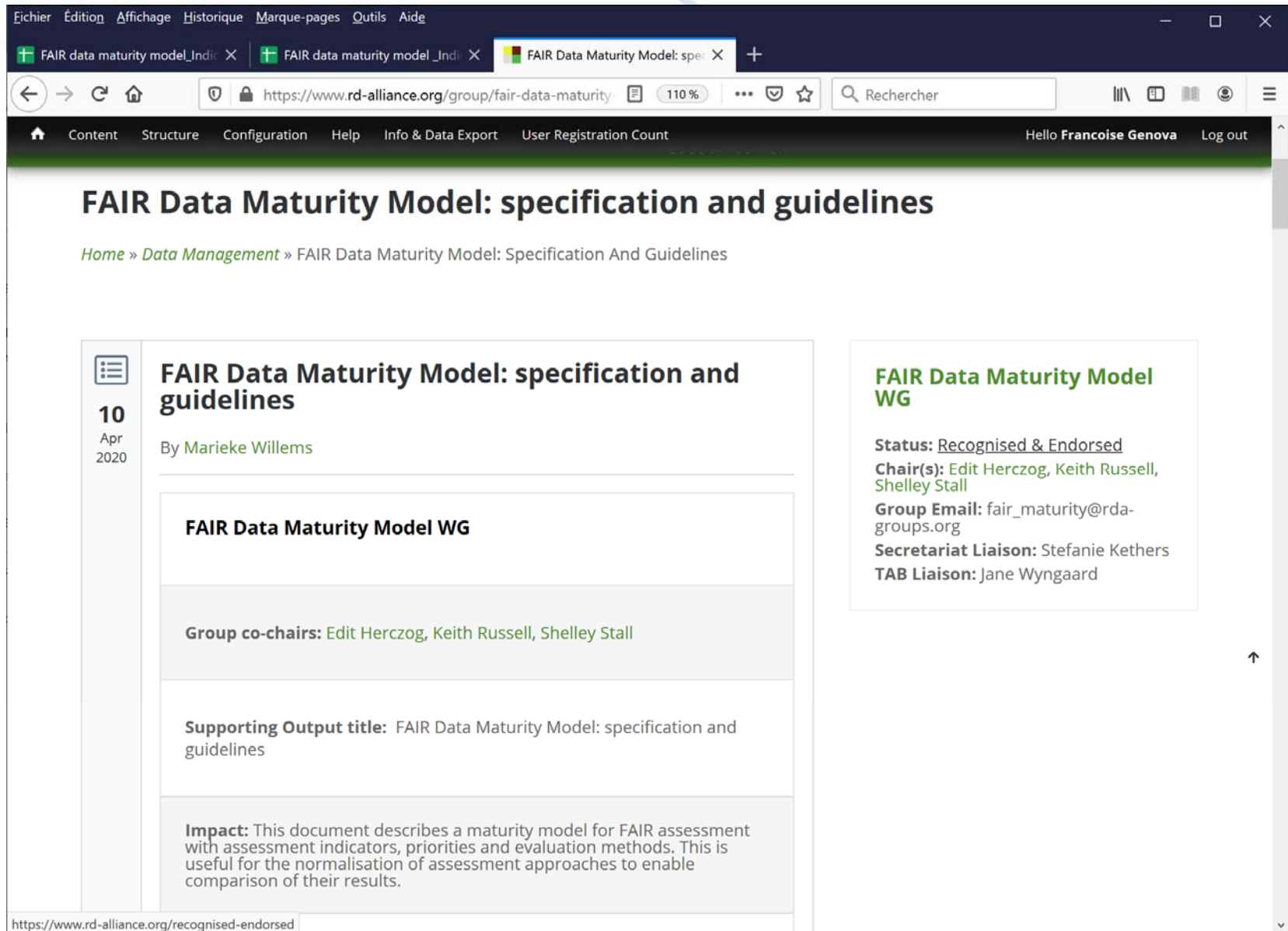


23/03/2020

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

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FAIR data maturity model\_Indic X FAIR data maturity model\_Indic X FAIR Data Maturity Model: spec X

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# FAIR Data Maturity Model: specification and guidelines

Home » Data Management » FAIR Data Maturity Model: Specification And Guidelines

 **10**  
Apr  
2020

## FAIR Data Maturity Model: specification and guidelines

By [Marieke Willems](#)

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### FAIR Data Maturity Model WG

**Group co-chairs:** [Edit Herczog](#), [Keith Russell](#), [Shelley Stall](#)

**Supporting Output title:** FAIR Data Maturity Model: specification and guidelines

**Impact:** This document describes a maturity model for FAIR assessment with assessment indicators, priorities and evaluation methods. This is useful for the normalisation of assessment approaches to enable comparison of their results.

### FAIR Data Maturity Model WG

**Status:** [Recognised & Endorsed](#)  
**Chair(s):** [Edit Herczog](#), [Keith Russell](#), [Shelley Stall](#)  
**Group Email:** [fair\\_maturity@rda-groups.org](mailto:fair_maturity@rda-groups.org)  
**Secretariat Liaison:** [Stefanie Kethers](#)  
**TAB Liaison:** [Jane Wyngaard](#)

https://www.rd-alliance.org/recognised-endorsed





# RDA Request for Comments

- Recommendations and guidelines

<https://www.rd-alliance.org/group/fair-data-maturity-model-wg/outcomes/fair-data-maturity-model-specification-and-guidelines>

- RfC open until 13 May 2020

Three levels of importance are defined:

- **Essential:** such an indicator addresses an aspect that is of the utmost importance to achieve FAIRness under most circumstances, or, conversely, FAIRness would be practically impossible to achieve if the indicator were not satisfied.
- **Important:** such an indicator addresses an aspect that might not be of the utmost importance under specific circumstances, but its satisfaction, if at all possible, would substantially increase FAIRness.
- **Useful:** such an indicator addresses an aspect that is nice-to-have but is not could indicator MAY be satisfied, but not necessarily indispensable.



# **FAIR Data Maturity Model Specification and Guidelines 2020**

**Proposed RDA Recommendation**  
**Produced by: FAIR Data Maturity Model WG, 2019-2020**  
<https://www.rd-alliance.org/groups/fair-data-maturity-model-wg>



FAIR	ID	Indicator	Priority
F1	<a href="#">RDA-F1-01M</a>	Metadata is identified by a persistent identifier	●●● Essential
F1	<a href="#">RDA-F1-01D</a>	Data is identified by a persistent identifier	●●● Essential
F1	<a href="#">RDA-F1-02M</a>	Metadata is identified by a globally unique identifier	●●● Essential
F1	<a href="#">RDA-F1-02D</a>	Data is identified by a globally unique identifier	●●● Essential
F2	<a href="#">RDA-F2-01M</a>	Rich metadata is provided to allow discovery	●●● Essential
F3	<a href="#">RDA-F3-01M</a>	Metadata includes the identifier for the data	●●● Essential
F4	<a href="#">RDA-F4-01M</a>	Metadata is offered in such a way that it can be harvested and indexed	●●● Essential
A1	<a href="#">RDA-A1-01M</a>	Metadata contains information to enable the user to get access to the data	●● Important
A1	<a href="#">RDA-A1-02M</a>	Metadata can be accessed manually (i.e. with human intervention)	●●● Essential
A1	<a href="#">RDA-A1-02D</a>	Data can be accessed manually (i.e. with human intervention)	●●● Essential
A1	<a href="#">RDA-A1-03M</a>	Metadata identifier resolves to a metadata record	●●● Essential
A1	<a href="#">RDA-A1-03D</a>	Data identifier resolves to a digital object	●●● Essential
A1	<a href="#">RDA-A1-04M</a>	Metadata is accessed through standardised protocol	●●● Essential
A1	<a href="#">RDA-A1-04D</a>	Data is accessible through standardised protocol	●●● Essential
A1	<a href="#">RDA-A1-05D</a>	Data can be accessed automatically (i.e. by a computer program)	●● Important
A1.1	<a href="#">RDA-A1.1-01M</a>	Metadata is accessible through a free access protocol	●●● Essential
A1.1	<a href="#">RDA-A1.1-01D</a>	Data is accessible through a free access protocol	●● Important
A1.2	<a href="#">RDA-A1.2-02D</a>	Data is accessible through an access protocol that supports authentication and authorisation	● Useful
A2	<a href="#">RDA-A2-01M</a>	Metadata is guaranteed to remain available after data is no longer available	●●● Essential
I1	<a href="#">RDA-I1-01M</a>	Metadata uses knowledge representation expressed in standardised format	●● Important
I1	<a href="#">RDA-I1-01D</a>	Data uses knowledge representation expressed in standardised format	●● Important
I1	<a href="#">RDA-I1-02M</a>	Metadata uses machine-understandable knowledge representation	●● Important
I1	<a href="#">RDA-I1-02D</a>	Data uses machine-understandable knowledge representation	●● Important
I2	<a href="#">RDA-I2-01M</a>	Metadata uses FAIR-compliant vocabularies	●● Important



FAIR	ID	Indicator	Priority
I2	<a href="#">RDA-I2-01D</a>	Data uses FAIR-compliant vocabularies	● Useful
I3	<a href="#">RDA-I3-01M</a>	Metadata includes references to other metadata	●● Important
I3	<a href="#">RDA-I3-01D</a>	Data includes references to other data	● Useful
I3	<a href="#">RDA-I3-02M</a>	Metadata includes references to other data	● Useful
I3	<a href="#">RDA-I3-02D</a>	Data includes qualified references to other data	● Useful
I3	<a href="#">RDA-I3-03M</a>	Metadata includes qualified references to other metadata	●● Important
I3	<a href="#">RDA-I3-04M</a>	Metadata include qualified references to other data	● Useful
R1	<a href="#">RDA-R1-01M</a>	Plurality of accurate and relevant attributes are provided to allow reuse	●●● Essential
R1.1	<a href="#">RDA-R1.1-01M</a>	Metadata includes information about the licence under which the data can be reused	●●● Essential
R1.1	<a href="#">RDA-R1.1-02M</a>	Metadata refers to a standard reuse licence	●● Important
R1.1	<a href="#">RDA-R1.1-03M</a>	Metadata refers to a machine-understandable reuse licence	●● Important
R1.2	<a href="#">RDA-R1.2-01M</a>	Metadata includes provenance information according to community-specific standards	●● Important
R1.2	<a href="#">RDA-R1.2-02M</a>	Metadata includes provenance information according to a cross-community language	● Useful
R1.3	<a href="#">RDA-R1.3-01M</a>	Metadata complies with a community standard	●●● Essential
R1.3	<a href="#">RDA-R1.3-01D</a>	Data complies with a community standard	●●● Essential
R1.3	<a href="#">RDA-R1.3-02M</a>	Metadata is expressed in compliance with a machine-understandable community standard	●●● Essential
R1.3	<a href="#">RDA-R1.3-02D</a>	Data is expressed in compliance with a machine-understandable community standard	●● Important

**Licences**

