



How to Implement the FAIR Data Principles?

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Data Archiving and Networked Services - DANS

Second EOSCpilot Stakeholders Forum
22 November 2018
Vienna, Austria



- 14:00 – 14:05: Short Introduction on the FAIR principles by Elly Dijk - DANS
- 14:05 – 14:35: Presentation 'Results from the FAIR Expert Group Stakeholder Consultation on the FAIR Data Action Plan' by Simon Hodson of European Commission Expert Group on FAIR data
- 14:35 – 14:55: Presentation 'Ready, Set, GO FAIR' by Barend Mons - Go FAIR
- 14:55 – 15:15: FAIR Assessment for Repositories and Researchers by Eliane Fankhauser - DANS
- 15:15 – 16:00: Panel discussion 'Implementing FAIR' chaired by Patrick Aerts - DANS



FAIR Data Principles and EOSC

EUROPEAN OPEN SCIENCE CLOUD

BRINGING TOGETHER CURRENT AND FUTURE DATA INFRASTRUCTURES

A trusted, open environment
for sharing scientific data

Open and seamless
services to analyse and
reuse research data

Linking data

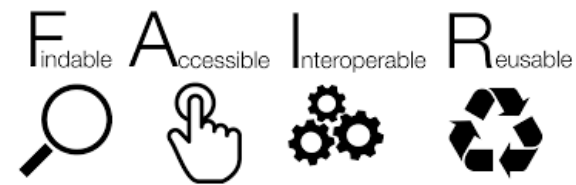
Connecting across borders
and scientific disciplines

Connecting scientists
globally

Improving science

Long term
and sustainable





- According to the FAIR Data Principles, data should be:
 - 1. Findable** – Easy to find by **both humans and computer systems** and based on mandatory description of the metadata that allow the discovery of interesting datasets;
 - 2. Accessible** – Stored for long term such that they can be easily accessed and/or downloaded with **well-defined license and access conditions** (*Open when possible, closed when necessary*), whether at the level of metadata, or at the level of the actual data content;
 - 3. Interoperable** – Ready to be combined with other datasets **by humans as well as computer systems**;
 - 4. Reusable** – Ready to be used for **future research** and to be processed further **using computational methods**.



FAIR Data Principles – How?

Findable

- Assign persistent IDs, provide rich metadata, register in a searchable resource, ...

Accessible

- Retrievable by their ID using a standard protocol, metadata remain accessible even if data aren't...

Interoperable

- Use formal, broadly applicable languages, use standard vocabularies, qualified references...

Reusable

- Rich, accurate metadata, clear licences, provenance, use of community standards...



H2020 Programme

Guidelines on
FAIR Data Management in Horizon 2020

To make data open for the use by other researchers research should become findable, accessible, interoperable and reusable (FAIR).

Realising the European Open Science Cloud

First report and recommendations
of the Commission High Level Expert Group
on the European Open Science Cloud

Drafted by the Commission High Level Expert Group on the European Open Science Cloud

Members : Paul Ayrin, Jean-Yves Berthou, Rachel Bruce (Rapporteur), Stefanie Lindstedt, Anna Monreale, Barend Mons (Chair), Yoshihiro Murayama (Observer, Japan), Caj Södergård, Klaus Tochtermann, Ross Wilkinson (Observer, Australia).

The Commission High Level Expert Group on the European Open Science Cloud operates in full autonomy and transparency. The views and recommendations in this report are those of the Expert Group members acting in their personal capacities and do not necessarily represent the opinions of the European Commission or any other body, nor do they commit the Commission to implement them.

Version 3.0
26 July 2016

Wilkinson, M. D. et al. The FAIR Guiding Principles for scientific data management and stewardship. *Sci. Data* 3:160018 doi: 10.1038/sdata.2016.18 (2016).



GO FAIR Initiative Implementing

GO FAIR: a bottom-up international approach




for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services

nature > scientific data > comment > article

SCIENTIFIC DATA

Comment | OPEN | Published: 26 June 2018

A design framework and exemplar metrics for FAIRness

Mark D. Wilkinson , Susanna-Assunta Sansone , Erik Schultes, Peter Doorn, Luiz Olavo Bonino da Silva Santos & Michel Dumontier 

Scientific Data 5, Article number: 180118 (2018) | [Download Citation](#)

The FAIR Principles¹ (<https://doi.org/10.25504/FAIRsharing.WW10U>) provide guidelines for the publication of digital resources such as datasets, code, workflows, and research objects, in a manner that makes them Findable, Accessible, Interoperable, and Reusable (FAIR). The



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June 7, 2018

Journal article Open Access

FAIR Data Action Plan: Interim recommendations and actions from the European Commission Expert Group on FAIR data

 Hodson, Simon;  Jones, Sarah; Collins, Sandra;  Genova, Françoise;  Harrower, Natalie;  Mietchen, Daniel; Petrauskaitė, Ruta; Wittenburg, Peter

An interim FAIR Data Action Plan developed by the [European Commission Expert Group on Turning FAIR Data into reality](#). The Group has a remit to provide recommendations, indicators and input on the financing of activities required to turn FAIR data into reality at an EU, Member State and international level. See the full interim report at <https://doi.org/10.5281/zenodo.1285272>



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Panel



Sarah Jones



Barend Mons



Eliane Fankhauser



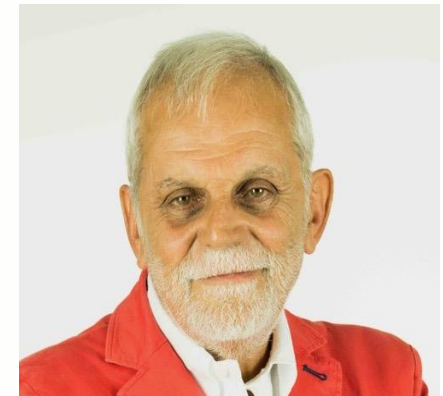
Partrick Aerts



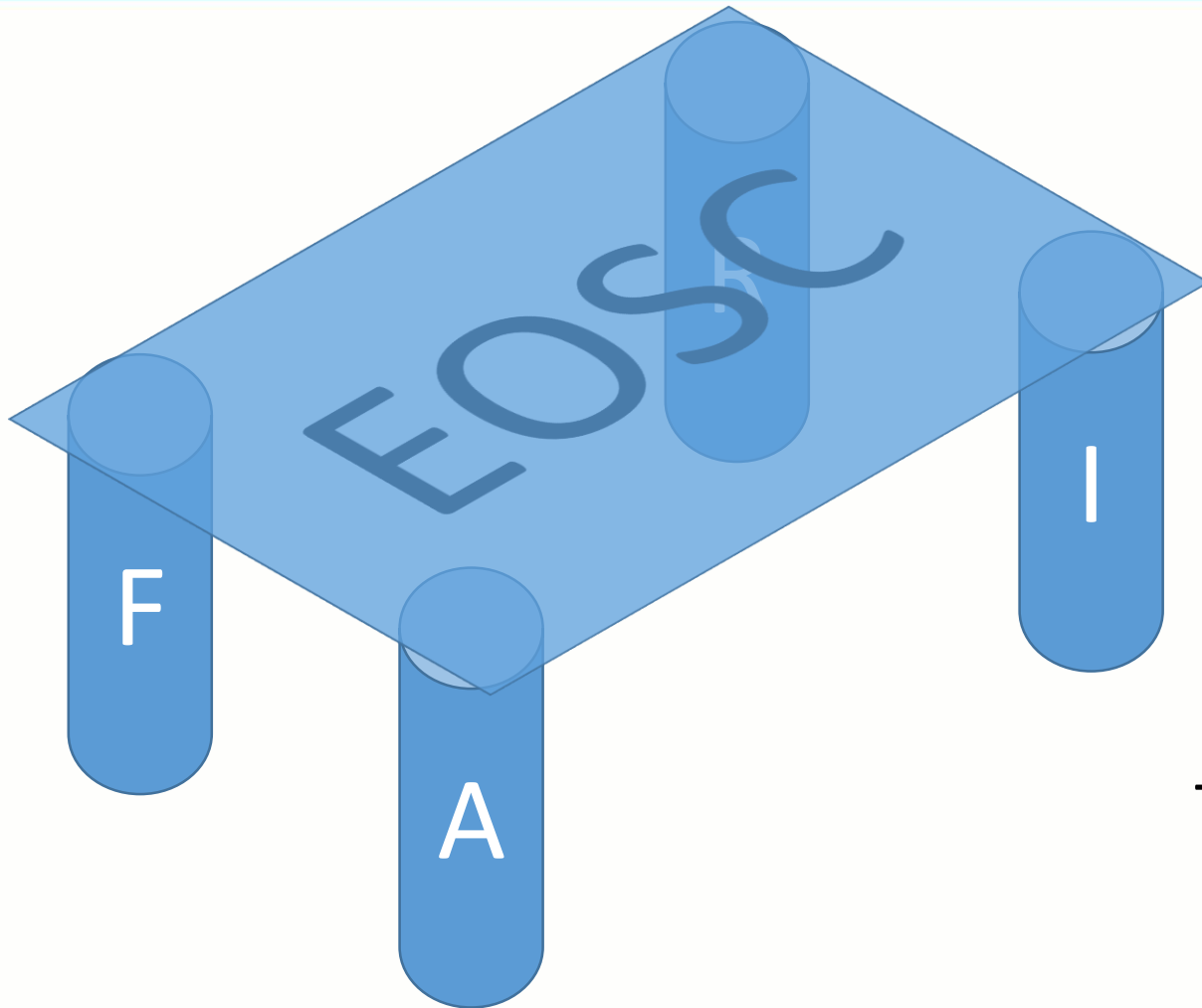
Silvana Muscella



Garreth O'Neill



Franco Niccolucci



The EOSC is
carried by
FAIR



Questions to address (1)

👤 First some reflective questions based on the discussions yesterday and this morning

👤 Need universities to be (more explicitly) involved?

👤 Universities expressed their concern of lack of direct involvement

👤 -> Do universities not form the principal route to get FAIR implemented across all disciplines?

👤 Re-use?

👤 In the general case, data are hardly ever re-used



👤 Exceptions are, when data contribute to some sort of “catalogue”, like in genomics, astronomy, weather, ...

👤 -> Do we need to encourage re-use, just enable re-use or – generally - forget about re-use?






Questions to address (2)

-FAIR and the Core Trust Seal

-  Putting data into a trusted repository does not imply they are FAIR
-  Making data FAIR does not imply they are stored into a Trusted repository

 -> **Should matters be aligned?**

FAIR Implementation





-  Per discipline or unified?
-  A common layer and leave the rest to the disciplines?
-  Focus on F and A and the use of standard formats and leave the rest to communities?

 -> **What is the preferred option?**







Questions to be addressed (3)

FAIR proliferation

-  Firstly try to reach the very end-user (scientist)
-  Secondly proliferate towards the non-academic public sector
-  Thirdly, proliferate to the industry
-  Not necessarily in that order

 -> **But, or no but...?**

FAIR Training

-  GO-FAIR says
 -  Go-Change-the mindset
 -  Go-Buld the infrastructure
 -  Go-Train

 -> **Who do we train and how**

-  PhD, Postdoc, students
-  By (national) service providers, universities, other?



Questions to be addressed (4)

FAIR versus Open

 FAIR does not imply Open

 Open does not imply Free

 **-> Are Non-open, but findable and accessible data less FAIR?**

 **-> Are non-Free, but Open data, less FAIR**

 **-> What do we want to achieve ultimately?**

Thank you!

