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Lessons from a tool of FAIR literacy based on key assessment criteria.

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This poster presents the design and assessment of a tool developed as part of the RDA-SHARC IG work based on key works (notably from **FORCE 11***; **EC Working group on Rewards under Open science***; **GO FAIR*** initiative) to get a FAIR compliance assessment either by evaluators or by researchers themselves. It also reports on a discussion about the construction of pre-fairification processes to better understand the requirements and investments in FAIRification.

- https://www.force11.org/
  E.U. European Commission Directorate-General for Research and Innovation report: Evaluation of Research Careers fully acknowledging Open Science Practices; Rewards, incentives and/or recognition for researchers practicing Open Science. 2017
  https://www.go-fair.org/fair-principles/fairification-process/

About FAIRification

Making resources available for community reuse means ensuring that data (and related materials) are findable and accessible on the web, and that they comply with international standards making them interoperable and reusable by others. This refers to the FAIR principles: Findable / Accessible / Interoperable / Reusable) that have been defined as part of the international initiative Force11 www.force11.org and published in Wilkinson et al. (2018).

FAIRness is a *sine qua non* condition for transdisciplinary work with no misunderstanding as well as preserving consistency of aggregated data.

Assessing FAIRness

Assessing compliance with FAIR practices and increasing understanding of FAIRness criteria, i.e. promoting FAIRness literacy, are critical steps to make it real.
A solution to foster FAIRification is to reward the compliance with FAIR principles as a first-class research output. To that aim, appropriate human readable criteria must first be identified to enable the assessment of FAIRness. A methods and processes workflow needs to be defined for the preparation of FAIRification.

Designing a tool to assess FAIRness

The tool must be understandable by all stakeholders including those who are not experts in data science; It is designed to be generic and trans-disciplinary
https://docs.google.com/spreadsheets/d/1vloqbekIGlqiDwzE9jqZzoaoDCbwYQlxOWbZzIxIYbI/edit?usp=sharing

Assessing the tool / lessons learned

To obtain a tool as realistic as possible, we have designed an assessment survey to seek feedback from the scientific community on the clarity and usability of the proposed criteria and tool.
(links below at the bottom)

Focus on the needs that have come out from the survey:

1- Fostering the pre-FAIRification decision ----------

2- Planning pre-FAIRification training and support ----------

3- Structuring pre-FAIRification processes: planning a step-by-step process -

4- Ensuring all criteria are well understood in the pre-FAIRification process -

5- Enabling crediting / rewarding mechanisms from the start ----------

Pre-FAIRification : a necessary research community level action

Pre-FAIRification is the process necessary within a community to permit the implementation of FAIR principles regarding the initial FAIRness literacy of each stakeholder (including awareness raising and especially training planning).

How to define a research community?
A scientific community corresponds to all scientists working in a field on a global scale (even if they are competitors). They have interests / needs and a set of working themes in common. We use a "community perimeter" to describe the thematic(s) of interest for a given set of scientists and targeted disciplines (possibly interdisciplinary). **The wider the perimeter, the longer and more expensive it is to agree** (this in any case requires an iterative approach).
Regarding broad disciplinary communities "e.g. biodiversity or agriculture for example), the community is defined by the use of a common vocabulary.

What are FAIRisation, preFAIRification and FAIRification for the RDA-SHARC group

FAIRisation: includes all the necessary processes to implement FAIR principles from the moment a political decision has been validated in this direction. It includes pre-Fairification steps, FAIRification steps and evaluation steps for each aspect of FAIRification.
Pre-FAIRification: Processes necessary in a community to permit the FAIR principles implementation with sufficient means regarding the initial FAIRness literacy of each stakeholder (including awareness raising, training, planning in particular).
FAIRification: Process of technical implementation of the FAIR principles , i.e. a stage where the concepts that will be related to data and metadata are defined or chosen within existing ontologies, and then implemented. The result of FAIRification on FAIR data can be queried by the machine.

RDA-SHARC-IG (SHAring Rewards and Credit Interest Group)*

This work has been done as part of the SHARC-IG, a recognised and endorsed interest group (65 pers., sept 2019) within RDA (Research Data Alliance).
RDA is a community-driven organisation that aims to enable open sharing of data worldwide.

1
Enhance consensus between decision makers and data stakeholders
This step requires the clear identification of the community perimeter (disciplines and skills) in which FAIRification would be a goal. This perimeter must be realistic and ideally at a global (international) level and its definition relies on the approval by key decision-makers (and long-term support)

2
Build resources for literacy and training
FAIRification will be based on different missions and skills, but requires that all members of a research community take into account and understand FAIR criteria, regardless of their initial level of knowledge. Identifying the skills and missions of each stakeholder for FAIRification is critical.

3
Define different levels of resources for an iterative and adaptive training process
The biggest challenge is to involve all community members in the preFAIRification process. Pedagogical vectors must be adaptable to the heterogeneity of the stakeholders and anticipate different pedagogic levels/steps.
That is the most important step in the process and must be designed to be achieveable by any member of the community.

4
Make sure during initial training the understandability of the material is clear and if necessary correct criteria
In the pre-FAIRification process, especially in an international community, or as the perimeter of the community evolves, understanding each criterion may be problematic for some stakeholders (for example, if criteria are too far away from their concerns). Efforts must be made to resolve these issues.

5
Motivate and coach stakeholders
Decision makers should follow the same literacy path as the community.
Rewards and credits should be based on iterative assessment of i) FAIRness literacy, ii) awareness of FAIRification iii) returns on investment.
Plan to promote rewards for the best achievements on the long term.

Pre-FAIRification: a community challenge

*** MORE INFORMATION:**

★ SHARC interest group at www.rd-alliance.org/groups/sharing-rewards-and-credit-sharc-ig
★ **For survey links (active), go to:**
1/ FAIR Self-assessment *simulation* and global *feedback* at https://sondage.osupytheas.fr/index.php/115136 ;
2/ *FINDABLE- feedback* survey at https://sondage.osupytheas.fr/index.php/922722 ;
3/ *ACCESSIBLE- feedback* survey at https://sondage.osupytheas.fr/index.php/213283 ;
4/ *INTEROPERABLE- feedback* survey at https://sondage.osupytheas.fr/index.php/323172 and
5/ *REUSABLE- feedback* survey at https://sondage.osupytheas.fr/index.php/417435.

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