Request for Information (RFI)
A software tool to assess the FAIRness of research outputs against a structured checklist of requirements [FAIRWare]
Issued: 20 December 2018

1. Introduction

The Wellcome Trust (the 'Trust', 'Wellcome') is the world's second highest spending global charitable foundation, both politically and financially independent. Wellcome supports scientists and researchers, takes on big problems, fuels imaginations, and sparks debate. Our funding supports over 14,000 people in more than 70 countries. In the next five years, we aim to spend up to £5 billion helping thousands of curious, passionate people all over the world explore ideas in science, population health, medical innovation, the humanities and social sciences and public engagement.

Further information on the Wellcome Trust can be found at www.wellcome.ac.uk and all prospective suppliers are encouraged to visit the website to gain an insight into the organisation.

2. The Project Brief

Summary
Wellcome's Insight & Analysis and Open Research teams wish to procure an online tool capable of checking the FAIRness (Findable, Accessible, Interoperable, Reusable) of all research outputs commonly produced by researchers in receipt of Wellcome funding. As a minimum this should include research articles, monographs and book chapters, data, code, and materials.

We anticipate that the project would comprise two major stages:

1. The compilation of a structured checklist of FAIR requirements for each output type to be assessed by the tool. These requirements should align with current consensus on what constitutes a FAIR output in each case and will likely operationalise the FAIR Guiding Principles[1] tailored to each output type. For example, research data is commonly held to be FAIR if it satisfies the following criteria:

   a. Findable – Data have sufficiently rich metadata and a unique and persistent identifier.

   b. Accessible – Metadata and data are understandable to humans and machines. Data is deposited in a trusted repository.

   c. Interoperable - Metatdata use a formal, accessible, shared, and broadly applicable language for knowledge representation.

   d. Re-usable – Data have clear usage licences and provide accurate information on provenance.

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[1] The FAIR Guiding Principles for scientific data management and stewardship
https://doi.org/10.1038/sdata.2016.18

2. Development of a piece of software capable of reliably assessing the extent to which the research output types listed above satisfy these FAIR requirements.

Code developed through this work must be made available under a liberal open source license (MIT licence or equivalent) and allow maximal re-use by anyone who wishes to re-use and/or develop it further.

The tool should assign a score/badge to every output based on the extent to which it is published in alignment with FAIR principles and allow for these scores to be aggregated at the level of researchers, studies, clinical trials, grants, institutions and funders.

Following development the tool would ideally be maintained at a persistent web address permitting access and use by anyone who wished to make use of it. Rankings of FAIRness scores could potentially be publicly listed to encourage positive behaviour change and highlight cases of good practice.

3. Background

The FAIR Guiding Principles[2] are intended to help researchers share their outputs such that they are findable, accessible, interoperable and reusable. The principles provide guidance for scientific data management and stewardship and are relevant to all stakeholders in the current digital ecosystem.

The Principles have generated widespread discussion and endorsement among publishers, research funders, and institutions; with several large bodies (including the European Commission[3]) publicly declaring their intention to encourage FAIR sharing of all research data produced as a result of their funding.

However there currently exists no widely accepted, standard means of assessing the FAIRness or otherwise of research data and other outputs; limiting the extent to which funders and other stakeholders can monitor FAIR compliance and therefore enforce policies.

4. Key requirements

To help determine to what extent outputs generated by researchers are FAIR we believe two pieces of work are necessary:

1. To develop a structured checklist of FAIR requirements for a range of common research outputs (at a minimum research articles, monographs and book chapters, data, code, and materials) and seek endorsement from a broad cohort of stakeholders.

2. To develop an online system that provides the following functionality:

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[2] The FAIR Guiding Principles for scientific data management and stewardship
https://doi.org/10.1038/sdata.2016.18
[3] Guidelines on FAIR Data Management in Horizon 2020
http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

A. Integrates with Research Fish to check the FAIR status of all digital objects submitted by Wellcome researchers.

B. Allows for batch upload of unique identifiers via .CSV upload allowing users to check the FAIR status of digital objects not submitted through Research Fish.

C. Assigns a FAIRness rating to every output based on the extent to which it is published in alignment with FAIR principles, and allow for ratings to be aggregated at the level of studies, clinical trials, grants, researchers, institutions and funders.

D. Employs transparent definitions of FAIRness which permit future refinement by the community for all classes of research output.

E. Is made available under a liberal open source license (MIT licence) that permits anyone to benefit from, improve upon and redistribute the code.

F. Publicly displays FAIR rankings to encourage positive behaviour change and highlight cases of good practice.

5. RFI Questions

Before commissioning the development of the checklist and tool described above, the Wellcome Trust wishes to solicit the views of potential suppliers and other informed parties regarding the feasibility of this procurement, and the likely approach suppliers would take to satisfy the brief. To that end we would greatly appreciate your responses to the following questions:

1. Is the supplier aware of any work around developing a structured checklist of FAIR requirements for research outputs? If so, please provide details and if not, set out how this piece of work might be taken forward.

2. Is the supplier aware of a system containing - in whole or in part - the key functionality described in this document which already exists or is currently being developed? If so, please provide details and if not, set out how this piece of work might be taken forward.

3. What are the supplier's comments regarding the general feasibility of developing the products described above, given the current digital ecosystem?

4. Can the supplier suggest any refinements to the project brief which would add value to the final product?

5. Can the supplier describe the general approach they would undertake to deliver the products, including any refinements stipulated in question 3?

6. The initial focus of this tool is to assess the FAIRness of articles, monographs, book chapters, data, code and materials. Suppliers should comment on the viability of extending this to include other outputs such as those solicited by the Research Fish Common Question Set[4].

7. Following the development of the tool - how would the supplier recommend the tool be maintained in such a way as to permit persistent access and use by any party who wished to make use of it?

8. What timescale would be necessary for the supplier to deliver the products as described?

9. What approximate budget would be would be necessary for the supplier to deliver the products as described?

10. Which element of the product would you be most capable of developing: the checklist; the software or both? If your skill set in only in one area, outline the approach you would take for supporting the other element of the work.

6. Timetable

Below indicated the timelines which this RFP exercise is planned to run against;

#	Activity	Responsibility	Target Date
1	RFI issue to suppliers	Wellcome	20 December 2018
2	Response to RFI	[Supplier]	28 February 2019
3	RFI Evaluation	Wellcome	31 March 2019
4	Potential RFP	Wellcome	Q2 2019

#1 – RFI Issue

The RFI document will be circulated to the Supplier representatives for review.

#2 – Response to RFI

Suppliers will submit any questions they have about the RFI exercise to the Wellcome contact.

#3 – RFI Evaluation

Wellcome will evaluate the responses submitted by suppliers and potentially compile a Request For Procurement.

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[4] Output types solicited by the Research Fish Common Question Set include: Publications, Engagement activities, Influence on Policy, Research Tools & Methods, Intellectual Property & Licensing, Medical Products, Interventions and Clinical Trials, Artistic & Creative Products, Software & Technical Products, Other Outputs & Knowledge, Conferences.

#4 – Potential RFP
An RFP document will potentially be circulated to Supplier representatives, contingent on the responses received to the RFI.

7. Non-Disclosure and Confidentiality

Prospective suppliers should be aware that inappropriate publicity could have a serious effect upon Wellcome's business. The information contained within this document or subsequently made available to prospective suppliers is deemed confidential and must not be disclosed without the prior written consent of Wellcome unless required by law.

8. Independent Proposal

By submission of a proposal, prospective suppliers warrant that the prices in the proposal have been arrived at independently, without consultation, communication, agreement or understanding for the purpose of restricting competition, as to any matter relating to such prices, with any other potential supplier or with any competitor.

9. Costs Incurred by Prospective Suppliers

It should be noted that this document relates to a Request for Proposal only and not a firm commitment from Wellcome to enter into a contractual agreement. In addition Wellcome will not be held responsible for any costs associated with the production of a response to this Request for Proposal.

10. Wellcome Contact Details

The single point of contact within this RFI exercise for all communications is as indicated below;

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