

UKRO Open Science Obligations in Horizon 2020

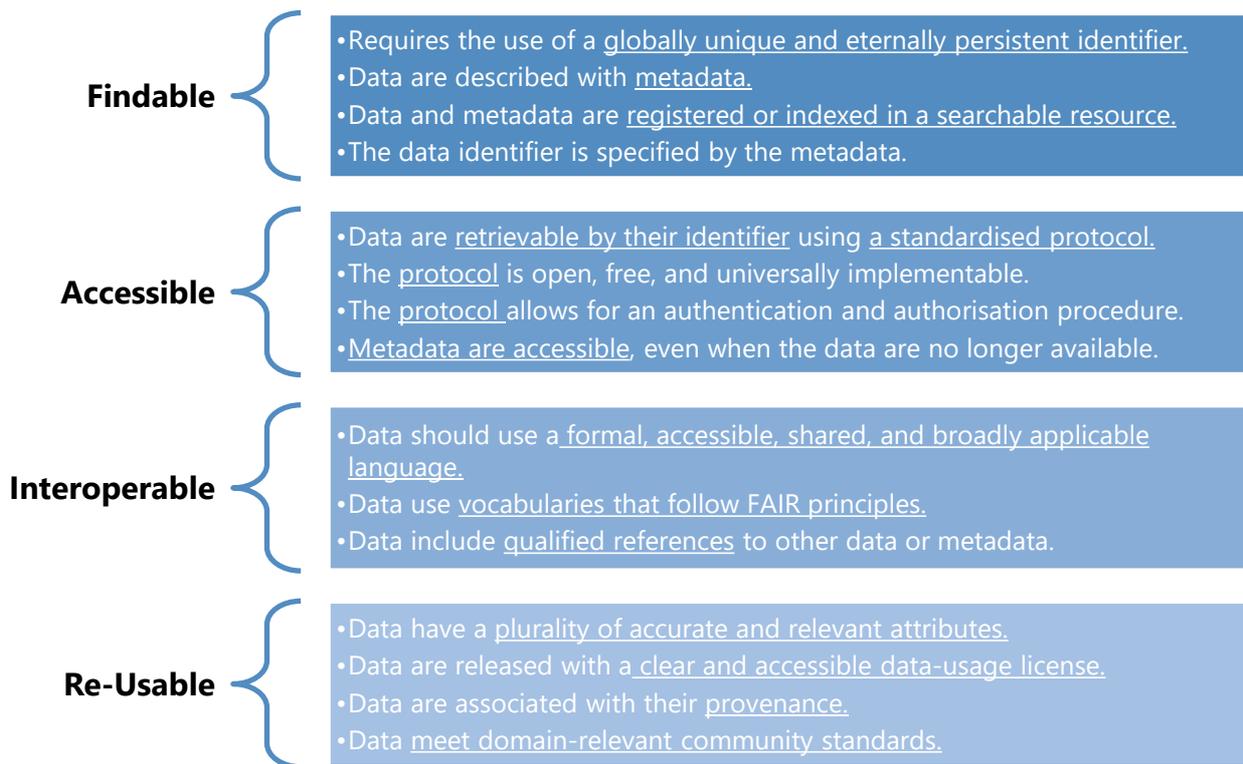
What is meant by Open Science?

Open Science means the ‘practising’ of science in a manner that allows contribution and collaboration, as well as setting up practices and mechanisms to enable the reuse, redistribution and reproduction of research and its underlying data and methods. The key driver behind Open Science policy is to facilitate an open end-to-end process for research, ensuring that outputs are automatically open to those outside of project consortia. This is based on the principle that the results of publicly funded Research should be publicly available. The policy underpinning the Open Science Agenda is further expanded on in the **UKRO factsheet: Open Science Policy**.

Open Science is one of the “Three Os” of the European Commission introduced in 2015 by Commissioner Moedas (Open Science, Open Innovation and Open to the World). Open Access is also a key component of Responsible Research and Innovation. This means that beneficiaries of Horizon 2020 awards have specific obligations regarding Open Access of publications and data, in particular the consideration of the FAIR data principles.

What is FAIR Data?

The FAIR principles for scientific data management and stewardship were published in 2016 following consultation with a diverse set of stakeholders. The principles aim to support good data management by ensuring that data sets are Findable, Accessible, Interoperable and Reusable (FAIR). The Horizon 2020 programme endorses the FAIR principles and guidelines are provided on FAIR Data management in Horizon 2020. The principles are defined as follows:



What are the obligations under Horizon 2020?

Article 29 of the Annotated Model Grant Agreement defines the Open Access obligations in Horizon 2020. This includes the following clauses:

29.1 Obligation to disseminate results

This defines the obligation for each beneficiary to disseminate results – as soon as possible - by disclosing them to the public by appropriate means unless it goes against their legitimate interest.

29.2 Open Access to scientific publications

This defines the obligations regarding open access to scientific publications. Each beneficiary must ensure open access to all peer-reviewed publications relating to its results. This is mandatory for all Horizon 2020 projects. This does not cover non-peer reviewed types of publications such as books, monographs, conference proceedings etc. However, it is encouraged to provide open access to these other types of publications where possible.

The requirement for open access in Horizon 2020 projects does not imply that beneficiaries are required to publish all results, it only stipulates that where results *are* published then they must be open access. The minimum requirements for open access status are that publications can be read online, downloaded and printed either via a repository for scientific publications or a publication platform or publisher site. Two provisions of open access are acceptable:

- **Gold Open Access – Publishing directly in Open Access**

Open Access is provided immediately through the publisher at the time of publication.

- **Green Open Access – Self-Archiving**

The published article, or final peer-reviewed manuscript is archived in a repository, via which open access is provided. It is not required to be the publishers' final 'mock-up', but the content should be the same as the published version. Beneficiaries shouldn't use repositories with rules which conflict with open access. Open access must be given within a maximum 6 month embargo period (12 months for Social Sciences and Humanities).

29.3 Open Access to research data

This defines the obligation for beneficiaries to either comply with or 'opt out' from the Open Research Data Pilot (ORDP) which has been extended to all actions in Horizon 2020. The ORDP requires that projects should develop a Data Management Plan (DMP) as a project deliverable within the first 6 months, and give open access to digital research data generated during the action.

Open Access means beneficiaries need to take measures to ensure that end-users can access, mine, exploit, reproduce and disseminate data through a research data repository without any charges for them. Only data generated by the beneficiaries during the action or reused digitally during the action are concerned, however beneficiaries are encouraged to digitise any other data and provide open access to these. Article 29.3 applies to two data types:

- Data required to validate published results and associated metadata;
- Any other data and associated metadata which is specified by the beneficiaries in their DMP.

It is recognised that it is not possible to mandate for Open Data at all times, due to reasons of IPR and privacy, however the aim of the Open Data pilot is to reach a situation where research funded by the Commission is as "Open as possible, as closed as necessary". Therefore, projects have the option to opt-out of the Open Data pilot, either at the application stage, or at any point during project implementation if there is justification based on one or more of the following reasons:

- Participation is incompatible with the obligation to protect;
- Participation is incompatible with security obligations;
- Participation is incompatible with rules on protection of personal data;
- Participation would mean the project's main aims would not be achieved;
- Project will not collect/generate any data;
- Other legitimate reasons not to participate (but justification is required).

What does this mean for Publications and Data?

When publishing results of a Horizon 2020 project the beneficiary needs to consider the following steps:

1) Deposit Publications

- In a Repository for scientific publications
- In a machine-readable format
- Published version (content)
- Upon Acceptance/On Publication
- **This is always requested** - even if publishing in an Open Access Journal

4) Deposit Research Data

- Research data necessary to validate the results of the publication
- Ideally in a data repository
- Ensure FAIR Data and Open Access
- Provide tools and protocols where necessary for validation of results

2) Provide OA

- Gold OA is *via* Publisher AND repository. Access on publication
- Green OA is *via* repository, access within a 6 month embargo (12 for SSH)
- **If the publisher requests a longer embargo, this is not compliant**

3) OA to Metadata

- Ensure access to bibliographic metadata that identify the publication
- Grant Number, action name and acronym, plus the terms European Union (EU) and Horizon 2020
- Also need a “persistent identifier” – a DOI that links to authoritative version

It is necessary to give immediate access to all data which can validate results of publications. For other data, beneficiaries are able to specify their own embargo period as part of their DMP, depending on what is appropriate in their research domain.

Data Management Plans

As part of the Open Research Data Pilot projects are required to develop a Data Management Plan (DMP) as a deliverable at the 6 month stage of the grant. All organisations involved in the award should be part of the development of the DMP. This should support the management life-cycle for all data collected, processed or generated by the action, and should cover the mechanisms used to ensure all data fulfils the FAIR criteria. As a minimum this is required to consider:

- Which data will be generated or reused;
- What methodology or standards will be applied;
- How data will be shared/made open access;
- What data will not be shared/made open access and why;
- Preservation and Curation of research data.

Services are available which can help support the development of a Horizon 2020 specific data management plan. The Digital Curation Centre for example provides ‘DMPOnline’ a platform which helps create, review and share DMPs under templates for various funder requirements.

The Cost of Open Access

Under Article 6.2 D3 of the Annotated Model Grant Agreement, it is specified that the costs of dissemination, including those regarding open access to peer reviewed publications (including article processing charges (APCs) or equivalent) are an eligible cost. Article 29.2 also explains that publication charges and APCs are eligible, provided that these costs are **incurred before the end of the action**.

Further to this, Article 29.3 states that costs relating to the implementation of the Open Research Data Pilot are also eligible as part of Article 6.2 D3. This includes the costs for the curation, storage and management of data, as well the costs of a data steward if the project requires this.

More information and Resources:

- **Open Innovation, Open Science, Open to the World**
ec.europa.eu/digital-single-market/en/news/open-innovation-open-science-open-world
- **The FAIR Guiding Principles for Scientific Data Management and Stewardship**
www.nature.com/articles/sdata201618
- **Guidelines on FAIR Data Management in Horizon 2020**
ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf
- **Annotated Model Grant Agreement**
ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf
- **DMPOnline (provided by the Digital Curation Centre)**
dmponline.dcc.ac.uk/
- **ELIXIR Data Stewardship Wizard**
ds-wizard.org/
- **Science Europe Guidance on Data Management Plans**
www.scienceeurope.org/wp-content/uploads/2018/12/SE_RDM_Practical_Guide_Final.pdf
- **ORCID** – Links proposals, publications and outputs of researchers
orcid.org/
- **OpenAIRE** – European Project supporting Open Science
www.openaire.eu
- **FOSTER** – Another European Project with training and resources
www.fosteropenscience.eu/
- **OpenUP Hub** – For Early Stage Researchers to get support on tools and best practice
www.openuphub.eu/
- **For specific questions, contact your UKRO European Advisor**