Open Science in Horizon Europe RIA/IA/CSA

IN THE METHODOLOGY YOU NEED TO ADDRESS BOTH:
1) HOW YOU WILL COMPLY WITH THE MANDATORY PRACTICES
2) HOW YOU WILL ADOPT RECOMENDED PRACTICES

RECOMMENDED PRACTICES

IN THE **LIST OF ACHIEVEMENTS**:
5 RELEVANT OUTPUTS (publications, data) OPENLY ACCESSIBLE + PERSISTENT IDENTIFIER + «AS OPEN AS POSSIBLE»

IN THE PROJECT **METHODOLOGY**
1) EMBEDDED OPEN SCIENCE PRACTICES
2) FAIR DATA MANAGEMENT + DMP SCHEMA

MAXIMIZING IMPACT USING OPEN SCIENCE (OS IS AMONG KEY PATHWAY INDICATORS) + SCHEMA OF DISSEMINATION PLAN (DELIVERABLE M6)

OPEN SCIENCE PRACTICES/SKILLS IN PREVIOUS PROJECTS TO EVALUATE **QUALITY OF IMPLEMENTATION AND CONSORTIUM CAPACITY**

MANDATORY PRACTICES

DEPOSIT+ IMMEDIATE ACCESS (ZERO EMBARGO + CC BY) =
1. OPEN RESEARCH EUROPE
2. OA JOURNAL
3. TRADTIONAL JOURNAL [RETAINING RIGHTS]

1. RESPONSIBLE MANAGEMENT ACCORDING TO **FAIR PRINCIPLES**
2. DATA AND OTHER OUTPUTS «**AS OPEN AS POSSIBLE, AS CLOSED AS NECESSARY**»
3. DATA MANAGMENT PLAN BY M6

INFORMATION ON OUTPUTS/TOOLS AND **ACCESS** TO DATA/RESULTS FOR **VALIDATION OF RESEARCH**

LIST OF ACHIEVEMENTS Template PartA

EXCELLENCE Template PartB

IMPACT Template PartB

QUALITY OF IMPLEMENTATION Template PartB

OPEN SCIENCE Publications

OPEN SCIENCE FAIR data

ENSURE REPRODUCIBILITY

PROJECT PROPOSAL **WILL BE EVALUATED ON**
a) HOW IT WILL ADOPT RECOMMENDED PRACTICES AND b) HOW IT WILL BE COMPLIANT TO MANDATORY ONES

Recommended/mandatory practices

Open Science practices

What?	How?	Mandatory in all calls/recommended
Early and open sharing of research	Preregistration, registered reports, preprints, etc.	Recommended
Research output management	Data management plan (DMP)	**Mandatory**
Measures to ensure reproducibility of research outputs	Information on outputs/tools/instruments and access to data/results for validation of publications	**Mandatory**
Open access to research outputs through deposition in trusted repositories	• Open access to publications • Open access to data • Open access to software, models, algorithms, workflows etc.	• **Mandatory** for peer-reviewed publications • **Mandatory** for research data **but** with exceptions ('as open as possible…') • Recommended for other research outputs
Participation in open peer-review	Publishing in open peer-reviewed journals or platforms	Recommended
Involving all relevant knowledge actors	Involvement of citizens, civil society and end-users in co-creation of content (e.g. crowd-sourcing, etc.)	Recommended

CONSIDERED TOGETHER SEE SLIDE 6 and 10

Slide courtesy of Victoria Tsoukala, EC

In Horizon Europe there is a mention of **Open Science (OS) practices**

- **MANDATORY**: 4 practices. They are detailed in the Grant Agreement Annex V Art.17:
  1. Research output management (Data Management Plan)
  2. Open Access to publications
  3. Open Access to FAIR data according to the principle «as open as possible, as closed as necessary»
  4. Measures to ensure reproducibility of results
- **RECOMMENDED**: several practices concerning an open scientific workflow, open peer review, FAIR data management, dissemination practices. They are detailed in the Standard Application Form and in the Programme Guide (V1, pp. 38-54) which gives useful examples and tools.

«Recommended» practices are not mandatory but strongly encouraged, as they are among the criteria evaluated to accept and fund the project.

The project will be evaluated on

a) how the project will comply to mandatory OS practices (Open Access to publications and FAIR data; reproducibility)
b) how recommended OS practices will be embedded into the project methodology and workflow (see Guide, p. 38]

Specific calls might have additional Open Science mandatory practices and/or require the use of infrastructures federated in EOSC – European Open Science Cloud.

PLEASE NOTICE THAT MSCA, ERC AND EIC HAVE DIFFERENT RULES/TEMPLATES/CRITERIA OF EVALUATION. CSA HAS DIFFERENT SUGGESTED LENGTH

Step	Reference	What should you do?	Useful tools
APPLICATION – PROPOSAL DRAFTING RECOMMENDED OPEN SCIENCE PRACTICES	**Standard Application Form** **Part A** **2. Organization data. List of achievements** List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements relevant to the call **Programme guide V1 p. 40** The significance of publications will not be evaluated on the basis of the Journal Impact Factor of the venue they are published in, but on the basis of a qualitative assessment provided by the proposers for each publication.	Every organization involved in the proposal has to list **5 relevant «outputs/achievements»** (publications, datasets, software…). It is recommended that they have whenever possible a persistent identifier(e.g. DOI, Handle…). A qualitative assessment of the impact and relavance for the project's activities must be provided for each output. Publications are **supposed to be Open.** Data are **supposed to be FAIR and «as open as possible».** Please notice that «Open» referred to publications **does not necessarily equate to «published in an Open Access Journal»**, it means that they have to be available in Open Access – e.g. the authors' accepted manuscript could be deposited in an Open repository (e.g. Zenodo, arXiv, institutional repository…) "The significance of publications will not be evaluated on the basis of the Journal Impact Factor of the venue they are published in, but on the basis of a qualitative assessment provided by the proposers for each publication". [Guide V1, p. 40]. [suggested length: 1 table – 500 character for each achievement as of Sept. 26: EU Commission has been notified it's too short to give all the requested information. To be fixed].	• **A1**. **SHERPA RoMEO** to check the current journal copyright policy in order to deposit your publications [https://v2.sherpa.ac.uk/romeo/] • **A2. Zenodo**, a multidisciplinary, free to all Open archive to deposit texts, data, software, images… Zenodo assigns a DOI to any deposited item. [https://zenodo.org/] • **A3. ORCID ID** for researchers identifier [https://orcid.org/]

Step	Reference	What should you do?	Useful tools
APPLICATION – PROPOSAL DRAFTING RECOMMENDED OPEN SCIENCE PRACTICES + MANDATORY OPEN SCIENCE PRACTICES	**Standard Application Form - Part B** **1. Excellence** **1.2 Methodology** Describe how appropriate open science practices are implemented as an integral part of the proposed methodology. **Programme guide V1 p. 40** Proposers will have to provide concrete information on **how** they plan to comply with the mandatory open science practices. Failure to sufficiently address this, will result in a lower evaluation score. A clear explanation of how they will adopt recommended practices, as appropriate for their projects, will result in a higher evaluation score. If proposers believe that none of the open science practices (mandatory or recommended) apply to their project, then they have to provide a justification	In this section you have to address how the project will **a) comply with mandatory OS practices,** and **b) adopt/adapt the recommended OS practices**. Open Science is a new way of doing research. **That's why it will be evaluated under the «excellence» criterion in RIA/IA.** If you reckon that **no OS practice is suitable for your project proposal**, you have to **justify your choice** in this section with sound reasons. **Mandatory OS practices**: - specify how you will comply to Open Access mandate (see slide 8 for the 3 options: Open Research Europe, Open Access journal, subscription journal+rights to give immediate access) - specify in which «trusted repository» (see slide 10 and 12) you are planning to deposit texts and data and the licence you will assign **Recommended OS practices**: - tip: try to embed as many OS practices as are fitting for your proposal, following the different research steps outlined in **B2** To be highlighted: • early sharing of results • collaborative approach • Open peer review [the default, if you publish in Open Research Europe] • reproducibility practices • open licenses • Citizen science + co-creation • link to Research Infrastructures **Note: in RIA/IA your proposal will be evaluated on how OS practices are properly embedded in your research methodology**. [suggested length: 1 page; in CSA 1 page for OS and data management]	• **B1 Programme Guide** gives a non exhaustive list of recommended practices and related resources/tools p. 42-54 [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf] • **B2 Open Science practices rainbow** [https://doi.org/10.5281/zenodo.1147024] • **B3 The Turing way for reproducible science** [https://the-turing-way.netlify.app/welcome.html] • **B4 FOSTER Open Science handbook** [https://www.fosteropenscience.eu/content/open-science-training-handbook] • **B5 ORION Co-creation menu** [https://www.orion-openscience.eu/public/2018-05/D3.1%20Menu%20of%20Creation%20Tools.pdf] • **B6 CoS4Cloud boosting citizen science technologies** [https://cos4cloud-eosc.eu/]

Step	Reference	What should you do?	Useful tools
APPLICATION – PROPOSAL DRAFTING RECOMMENDED OPEN SCIENCE PRACTICES + MANDATORY OPEN SCIENCE PRACTICES	**Standard Application Form - Part B** **1. Excellence** **1.2 Methodology** Research data management and management of other research outputs **Programme guide V1 p. 40** Proposers will have to provide concrete information on **how** they plan to comply with the mandatory open science practices. Failure to sufficiently address this, will result in a lower evaluation score. A clear explanation of how they will adopt recommended practices, as appropriate for their projects, will result in a higher evaluation score. If proposers believe that none of the open science practices (mandatory or recommended) apply to their project, then they have to provide a justification.	In this section you are asked to **outline how you are going to responsibly manage data and other research outputs** according to the FAIR principles and how you are going to give access according to the principel «as open as possible, as closed as necessary». Please remember that you have to **detail also how the project will be compliant to mandatory** FAIR research data management [see slide 10]. This will be **part of the evaluation criteria of your proposal.** Basically here you have to outline schematically the future DMP – *Data Management Plan*, which will be a deliverable by M6 if the project is funded. Sections to be included: • **Data summary:** type (experimental, observational...), volume, formats • **Findability**: naming conventions, persistent identifiers, metadata • **Accessibility**: where data can be found and under which access conditions [it does not mean «Open»] • **Interoperability**: standards, ontologies, open formats • **Reusability**: licenses for reuse and documentation (software, tools, methods…) to make your data understandable and reusable • **Costing & resourcing** to manage your data (including data stewardship) Specify also how **other research outputs will be managed** (software, protocols, lab notebook, methodologies…) needed to validate your data. [suggested length: 1 page; in CSA 1 page for OS and data management]	• **C1 Programme Guide** specific on data management p. 43-46 [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf] • **C2 Science Europe Guide to Data Management** [https://www.scienceeurope.org/our-resources/practical-guide-to-the-international-alignment-of-research-data-management/] • **C3 FAIR principes** [https://www.go-fair.org/fair-principles/] • **C4 FAIRaware** to test your awareness of the FAIR principles and get practical infos [https://fairaware.dans.knaw.nl] • **C5 FAIR data sharing in the Humanities** [https://doi.org/10.7486/DRI.tq582c863] • **C6 CESSDA Data management Expert Guide** [https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide] • **C7 FAIR cookbook** recipes to make your data FAIR [https://fairplus.github.io/the-fair-cookbook/content/home.html]

Step	Reference	What should you do?	Useful tools
APPLICATION – PROPOSAL DRAFTING RECOMMENDED OPEN SCIENCE PRACTICES	**Standard Application Form Part B** **2. Impact** **2.2 Measures to maximise impact** . Describe the dissemination, exploitation and communication measures that are planned, and the target group(s) addressed . Outline your strategy for the management of intellectual property **Programme guide p. 30-37** We suggest you take a step-by-step approach to dissemination, exploitation and communication when developing your proposals for an application. [clarify the relationship between exploitation and Open Science]	In this section you have to give schematic (in a table) first version of the project's plan for the project **dissemination, exploitation and communication**, bearing in mind they are separate activities and they have to be commensurate and linked to a specific audience [e.g.: Academic community→ Preprint, journal articles, conferences; Society → Blog, Wikipedia entry, plain words video…]. The *Dissemination & communication plan* is a deliverable due in M6 if the project is funded. At this stage, **you will be evaluated on how you are going to openly disseminate**, keeping in mind the Key Impact pathways on Horizon Europe (scientific, economic, societal) among which «Fostering diffusion of knowledge and Open Science» (HEU regulation 2021/695 Annex V). You need also to **address how the project will manage intellectual property rights (**patents, Creative Commons Licenses…). If funded, before its end each project has to draw a ***Results ownership list***. Tips for an Open dissemination: - create a Community in Zenodo under the acronym of the project to deposit all the related material/outputs (preprint, Open versions of the publications, datasets, software, presentations…). Zenodo assigns a DOI, making you compliant with the Findability principle of FAIR. Deposited items in Zenodo can have different access rights (open, restricted, embargoed…) - create a «Project» in Open Science Framework, which is a complete environment in which you can also publish preprints - use code notebooks for data analysis like Jupyter (containing narrative text, executable code, data…) and make it open as early as possible. Note: **patenting and publishing**. There is no conflict (see **D5-D6**). If you plan to patent, dissemination may occurr later. This applies for all publications. Whether they are Open Access or not makes no difference. [suggested length: 5 pages total, hence Open Science 0,5?]	• **D1 Ten simple rules for innovative dissemination** [https://doi.org/10.1371/journal.pcbi.1007704] • **D2 Zenodo** [https://zenodo.org/] • **D3 Open Science Framework** [https://osf.io/] • **D4 EGI Open Notebook** [https://www.egi.eu/services/notebooks/] On **Intellectual Property rights, patenting and Open Science** and the **Right Ownership List** see: • **D5 Annotated Model Grant Agreement**Annex V IPR RULES pp. 132-135 [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf] • **D6 Open Science and Intellectual protection in Horizon Europe** [https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/open-science-vs-ipr-horizon-europe-which-one-wins-2021-09-17_en]

Step	Reference	What should you do?	Useful tools
APPLICATION – PROPOSAL DRAFTING RECOMMENDED OPEN SCIENCE PRACTICES	**Standard Application Form Part B** **3. Quality and efficiency of the implementation** **3.2 Capacity of participants and consortium as a whole** Describe the consortium. How does it match the project's objectives, and bring together the necessary disciplinary and inter-disciplinary knowledge. Show how this includes expertise in social sciences and humanities, open science practices,…	In this section the project partners have to **demonstrate their contribution to the consortium capacity, including Open Science competences and skills.** Elements to be included: expertise in Open Science practices, citizen science projects, collaboration with Research Infrastructures… [suggested lenght: 3 pages total, hence ~0.5 for OS]	

Step	Reference	What should you do?	Useful tools
ACCEPTED PROPOSAL OBLIGATIONS FROM THE GRANT AGREEMENT MANDATORY OPEN SCIENCE PRACTICES **PUBLICATIONS**	**Grant Agreement** **Annex 5** **Art. 17 Open Science** The beneficiaries must disseminate their results as soon as feasible […] *Open science: open access to scientific publications* The beneficiaries must ensure open access **to peer-reviewed scientific publications** relating to their results. In particular, they must ensure that: - at the latest at the time of publication, a machine-readable electronic copy of the published version, or the final peer-reviewed manuscript accepted for publication, **is deposited in a trusted repository** for scientific publications - **immediate open access is provided** to the deposited publication via the repository, under the latest available version of the Creative Commons Attribution International Public Licence (**CC BY**) or a licence with equivalent rights; for monographs and other long-text formats, the licence may exclude commercial uses and derivative works (e.g. CC BY-NC, CC BY-ND) - information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication. Beneficiaries (or authors) **must retain sufficient intellectual property rights to comply with the open access requirements.** **Only publication fees in full open access venues for peer-reviewed scientific publications are eligible for reimbursement.** **Annotated Model Grant Agreement** **Annex 5** **Art. 17 Open Science p. 155-158**	Open Access rules for publications **apply to the accepted peer reviewed version** (the preprint is not sufficient) and require: - **deposit** in a «trusted repository» [see slide 10 and 12] a machine readable version of the paper, even when published in an Open Access journal, for preservation and mining purposes - **immediate access** (zero embargo) to the accepted version Authors **must retain sufficient rights** to comply with this immediate access obligation, adding if needed a **«prior obligation» clause** to the publishers' agreement (clause in Programme Guide, p. 49 - slide 13) . This mandate DOES NOT mean that you have to publish in an Open Access journal. To be compliant you can: 1. **Publish in ORE-Open Research Europe**, , a free open publishing platform provided by the EU Commission. This is the easiest way because it also provides: immediate publication, deposit in Zenodo, open peer review (which is a recommended practice) and inclusion of underlying data/tools required to validate the publication. 2. **Publish in an Open Access journal,** getting immediate access. There might be costs for APCs. You still have to deposit in a «trusted repository» [see slide 10;12]. **Only full Open Access journals APCs are eligible for reimbursment. Hybrid journals** (i.e. traditional subscription journal with an «open choice» for a single article) are **excluded from reimbursement**. 3. **Publish in a traditional susbcription journal**. You need to **check in SHERPA RoMEO if you are allowed to give immediate access**. If any **embargo** is requested, you **need to add the «prior obligation» clause** to the consent-to-publish statement **to maintain the right to deposit in a «trusted repository» and give immediate access** under a Creative Commons BY license. Books: only online versions related costs are eligible for reimboursement – no print costs included. You can apply a more restrictive license (like BY-NC-ND).	• **E1 Open Research Europe** [https://open-research-europe.ec.europa.eu/] • **E2 SHERPA RoMEO** to check for embargo periods (search by ISSN) [https://v2.sherpa.ac.uk/romeo/] • **E3 Directory of Open Access Journals** to find an Open Access journal [https://doaj.org/] • **E4 Open Access book toolkit** for Open Access books [https://www.oabooks-toolkit.org/] • **E5 Creative Commons licenses** [https://creativecommons.org/licenses/?lang=en] • **E6 Programme guide** p. 49 table with licenses and what they allow to do [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf]

Step	Reference	What should you do?	Useful tools
ACCEPTED PROPOSAL OBLIGATIONS FROM THE GRANT AGREEMENT MANDATORY OPEN SCIENCE PRACTICES **DATA**	**Grant Agreement** **Annex 5** **Art. 17 Open Science** The beneficiaries must disseminate their results as soon as feasible […] *Open science: research data management* The beneficiaries must manage the digital research data generated in the action ('data') **responsibly, in line with the FAIR principles** and by taking all of the following actions: - establish a **data management plan ('DMP')** (and regularly update it) - as soon as possible and within the deadlines set out in the DMP, **deposit the data in a trusted repository**; if required in the call conditions, this repository must be federated in the EOSC in compliance with EOSC requirements - as soon as possible and within the deadlines set out in the DMP**, ensure open access — via the repository — to the deposited data**, under the latest available version of the Creative Commons Attribution International Public License (CC BY) or Creative Commons Public Domain Dedication (CC 0) or a licence with equivalent rights, following the principle '**as open as possible as closed as necessary**' […] - provide information via the repository about any research output or any other tools and instruments needed to re-use or validate the data. **Annotated Model Grant Agreement** **Annex 5** **Art. 17 Open Science p. 158-161**	**Open Access rules for data** mandate that: 1. data are **managed in a responsible way** according to the **FAIR principles** 2. a **Data Management Plan (DMP**) is established by M6 and regularly updated **3. data are deposited** in a **«trusted repository»*** **4. data are «as open as possible, as closed as necessary»** according to the DMP provisions 5. information is given on any **output or tool needed to validate or reuse** the data Tips for the DMP: try DMPonline or Data Stewardship Wizard. Some institutions provide their own template. The DMP is a structured way to think of your data. It must be synthetic, schematic and specific to your dataset and research. **FAIR** (Findable, Accessible, Interoperable, Reusable) **does not equate to «Open»**. «Accessible» means to know where the data are deposited and under which access conditions (open, closed, restricted, embargoed) according to the principle **«as open as possible, as closed as necessary». Compelling reasons to keep your data closed must be detailed in the DMP.** *Trusted repository [Annotated Model Grant Agrement v.1, p. 156 [slide 12]]: - Certified repositories(Core trust seal, DIN, ISO…) - Disciplinary, institutional or catch all repositories providing persistent unique identifiers, data integrity checks, preservation, access rights, reuse licenses - GDrive, Dropbox, personal web pages are NOT repositories	**[beside tools C1-C7]:** • **F1 DMPonline** to draft your DMP [https://dmponline.dcc.ac.uk/] • **F2 Data stewardship Wizard** to manage your data in a FAIR way and to draft DMPs [https://ds-wizard.org/] • **F3 Cost evaluator** [https://storage-costs-evaluator.ds-wizard.org/] • **F4 OpenAIRE data management costs tool** [https://www.openaire.eu/how-to-comply-to-h2020-mandates-rdm-costs] • **F5 Legal aspects of data management** [https://www.openaire.eu/how-do-i-know-if-my-research-data-is-protected]

Step	Reference	What should you do?	Useful tools
ACCEPTED PROPOSAL OBLIGATIONS FROM THE GRANT AGREEMENT MANDATORY OPEN SCIENCE PRACTICES **MEASURES TO ENSURE REPRODUCIBILITY OF RESULTS**	**Grant Agreement** **Annex 5** **Art. 17 Open Science** [point 3] Publications - information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication. [point 4] Research data management - provide information via the repository about any research output or any other tools and instruments needed to re-use or validate the data **Annotated Model Grant Agreement** **Annex 5** **Art. 17 Open Science p. 155-161**	**Validation requirements** Information must be given via the repository (or via the copy of the publication deposited in the repository) about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication. Research outputs, tools and instruments may include data, software, algorithms, protocols, models, workflows, electronic notebooks and others. Information should include a detailed description of the research output/tool/instrument, how to access it, any dependencies on commercial products, potential version/type, potential parameters, etc. Best practice: It is recommended that open access is provided to these research outputs, tools and instruments unless legitimate interests or constraints apply. [AMGA p. 157] **Requirements for the re-use and validation of data** Information must be given via the repository about any research output or any other tools and instruments needed for the re-use or validation of research data. Research outputs, tools and instruments may include data, software, algorithms, protocols, models, workflows, electronic notebooks and others. Information must include a detailed description of the research output/tool/instrument, how to access it, any dependencies on commercial products, potential version/type, potential parameters etc. Best practice: Beneficiaries are encouraged to provide open access to these research outputs, tools and instruments unless legitimate interests or constraints apply. [AMGA p. 160]	

Step	Reference	DEFINITION OF TRUSTED REPOSITORY	BEWARE!
ACCEPTED PROPOSAL OBLIGATIONS FROM THE GRANT AGREEMENT MANDATORY OPEN SCIENCE PRACTICES **PUBLICATIONS** **DATA**	**Annotated Model Grant Agreement** **Annex 5** **Art. 17** **Open Science p. 156** **DEFINITION OF «TRUSTED REPOSITORY»**	Trusted repositories are: – Certified repositories (e.g. CoreTrustSeal, nestor Seal DIN31644, ISO16363) or disciplinary and domain repositories commonly used and endorsed by the research communities. Such repositories should be recognised internationally. – General-purpose repositories or institutional repositories that present the essential characteristics of trusted repositories, i.e.: * display specific characteristics of organisational, technical and procedural quality such as services, mechanisms and/or provisions that are intended to secure the integrity and authenticity of their contents, thus facilitating their use and re-use in the short- and long-term. Trusted repositories have specific provisions in place and offer explicit information online about their policies, which define their services (e.g. acquisition, access, security of content, longterm sustainability of service including funding etc.). * provide broad, equitable and ideally open access to content free at the point of use, as appropriate, and respect applicable legal and ethical limitations. They assign persistent unique identifiers to contents (e.g. DOIs, handles, etc.), such that the contents (publications, data and other research outputs) are unequivocally referenced and thus citeable. They ensure that contents are accompanied by metadata sufficiently detailed and of sufficiently high quality to enable discovery, reuse and citation and contain information about provenance and licensing; metadata are machine-actionable and standardized (e.g. Dublin Core, Data Cite etc.) preferably using common non-proprietary formats and following the standards of the respective community the repository serves, where applicable. * facilitate mid- and long-term preservation of the deposited material. They have mechanisms or provisions for expert curation and quality assurance for the accuracy and integrity of datasets and metadata, as well as procedures to liaise with depositors where issues are detected. They meet generally accepted international and national criteria for security to prevent unauthorized access and release of content and have different levels of security depending on the sensitivity of the data being deposited to maintain privacy and confidentiality.	• **Personal websites and databases, publisher websites, as well as cloud storage services (Dropbox, Google drive, etc) are not considered repositories. Academia.edu, ResearchGate and similar platforms do not allow open access under the terms required and are NOT considered repositories.** [AMGA p.156]

Step	Reference	CLAUSE FOR RIGHTS RETENTION	BEWARE!
ACCEPTED PROPOSAL OBLIGATIONS FROM THE GRANT AGREEMENT MANDATORY OPEN SCIENCE PRACTICES **PUBLICATIONS**	**Programme Guide p. 49** **CLAUSE TO NOTIFY SUBSCRIPTION BASED JOURNALS OF YOUR «PRIOR OBLIGATION» TO YOUR FUNDER AND MAINTAIN THE RIGHT TO DEPOSIT AND GIVE IMMEDIATE ACCESS TO THE ACCEPTED MANUSCRIPT** To be used **upon submission.**	**Proposers should be aware that beneficiaries are required to retain sufficient intellectual property rights (IPR) to comply with their open access obligations**. Authors may need to interact with prospective publishers, in particular when they publish in venues that are not open access. To facilitate compliance with their open access obligations, beneficiaries/**researchers are encouraged to notify publishers of their grant agreement obligations** (including the licensing requirements) already **at manuscript submission**. For example, by adding the following statement to their manuscript: "This work was funded by the European Union under the Horizon Europe grant [grant number]. As set out in the Grant Agreement, beneficiaries must ensure that at the latest at the time of publication, open access is provided via a trusted repository to the published version or the final peer-reviewed manuscript accepted for publication under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights. CC BY-NC, CC BY-ND, CC BY-NC-ND or equivalent licenses could be applied to long-text formats"	• If the publishing agreement is contrary to the grant agreement obligations, **authors should negotiate its terms and, alternatively, look for a different publishing venue/options**. [Guide p. 49]

How do I address open science in my proposal?

Open science (OS) takes a central place in Horizon Europe and open science practices are considered in the evaluation of Horizon Europe proposals. If not applicable to the proposal, justifications should be provided so that, if evaluators agree, open science will not be taken into consideration in the evaluation.

...in a nutshell...

Part A: Application form

List of up to 5 publications, widely-used datasets, software, goods, services, or any other achievements of consortium members relevant to the call content

- Publications expected to be open access
- Datasets expected to be FAIR and open*

* "As open as possible, as closed as necessary"

Part B: Project proposal - Technical description

1 Excellence

1.1 Objectives and ambition

1.2 Methodology

Open Science [max. 1 page]

How will the project implement mandatory and recommended open science practices in a manner appropriate to the nature of the proposed work?

Mandatory OS practices	Recommended OS practices
Open access# to scientific publications	Early and open sharing of research
Open* access to research data	Preregistration, open peer-review
Information/documentation about research outputs needed for research validation and data reuse	Citizen science, society engagement
Management of research data in line with FAIR principles	Research output management (beyond data)
	Reproducible outputs

Research Data Management (RDM) and management of other research outputs (exc. publications) [max. 1 page]

How will the data/ research outputs be managed in line with the FAIR principles?

Types of data & research outputs	Findability, Accessibility, Interoperability, Reusability of data & research outputs	Costs and responsibilities of data curation, storage and preservation

2 Impact

2.1 Project's pathways towards impact

2.2 Measures to maximize impact. Dissemination, exploitation & communication

Tips

- Refer to relevant Open Science practices described in the Methodology section (i.e. open access to research outputs and early and open sharing of research)
- Make sure proposed practices are compatible with your dissemination and exploitation plan (e.g. protection of intellectual property) and consortium agreements

!!! #Open Access to publications

1) Publish in ORE - Open Research Europe
2) Publish in an Open Access journal (see DOAJ)
3) Publish in a subscription based journal + maintain the rights to deposit and give immediate access

3 Quality and efficiency of the implementation

3.1 Work plan and resources

Tips

- Give visibility to RDM with distinct tasks or work packages
- Include the full Data Management Plan (DMP) as a deliverable
- Include other relevant RDM activities and budget them

3.2 Capacity of participants & consortium as a whole

Tips

- Describe consortium partners' capacities in open science

For more info, check the research tip:
Horizon Europe: How do I address open science in my proposal?

GHENT UNIVERSITY Data Stewards

Adapted by Elena Giglia

Infographic created by Open science team, Ghent University Library and adapted by Elena Giglia