



HISTO-MRI Project

This project has received funding from the European Union's H2020 Programme under grant agreement no 737180— HISTO-MRI

D1.9: Data Management Plan 2



Version	Date	Reviewer
1.0	27 th February 2019	José M. Benlloch



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1 Deliverable description

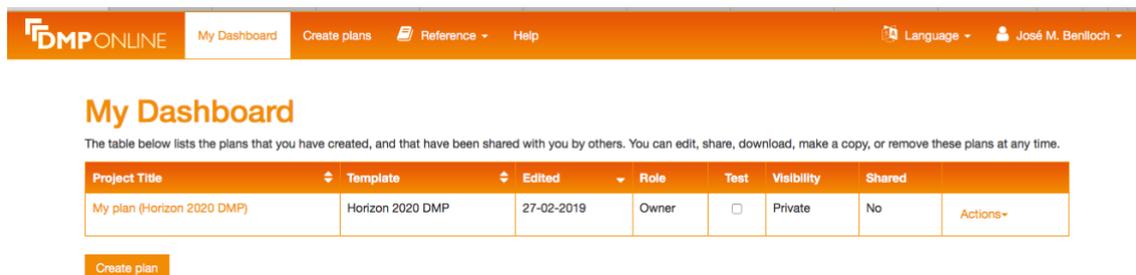
This deliverable is the second version of the Data Management Plan, that describes the strategy to manage all the data produced in the project. This first version reviews the types of data that are generated in the project and the means to store and preserve it.

This deliverable is the first result of *Task 5 Dissemination and Exploitation*, part of **WP1 – Management**.

The consortium has followed the Guidelines on FAIR Data Management in Horizon 2020. According to this document, Data Management Plans (DMPs) are a key element of good data management. A DMP describes the data management life cycle for the data to be collected, processed and/or generated by a Horizon 2020 project. As part of making research data findable, accessible, interoperable and re-usable (FAIR), a DMP should include information on:

- the handling of research data during and after the end of the project
- what data will be collected, processed and/or generated
- which methodology and standards will be applied
- whether data will be shared/made open access and
- how data will be curated and preserved (including after the end of the project).

The consortium is using the online tool provided by OpenAire to create a DMP.



The screenshot shows the 'My Dashboard' interface of the DMP ONLINE tool. The dashboard includes a navigation bar with 'DMP ONLINE', 'My Dashboard', 'Create plans', 'Reference', and 'Help'. It also features a language dropdown and a user profile for 'José M. Benlloch'. The main content area is titled 'My Dashboard' and contains a table listing the user's DMPs. Below the table is a 'Create plan' button.

Project Title	Template	Edited	Role	Test	Visibility	Shared	
My plan (Horizon 2020 DMP)	Horizon 2020 DMP	27-02-2019	Owner	<input type="checkbox"/>	Private	No	Actions

2 Introduction

The HISTO-MRI project participates in the Pilot on Open Research Data launched by the European Commission along with the H2020 programme. The use of a Data Management Plan is required for all participating projects.

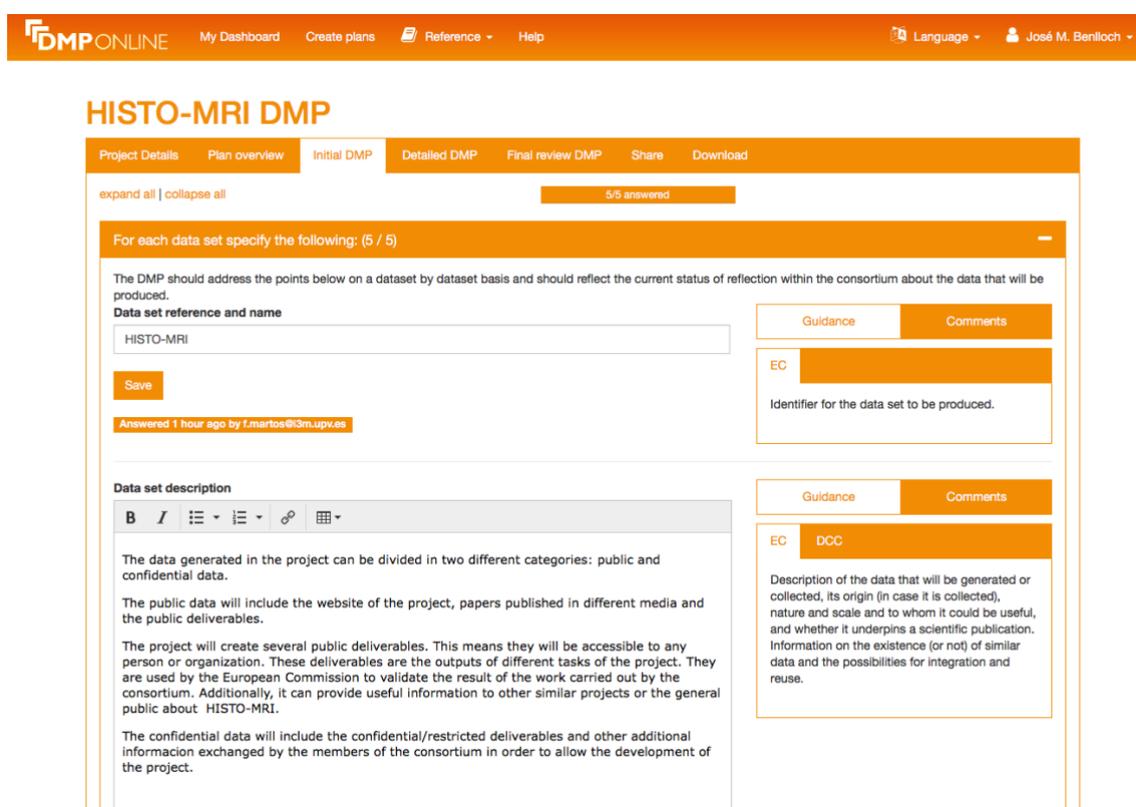
The purpose of the Data Management Plan (DMP) is to provide an analysis of the main elements of the data management policy that will be used by the Consortium with regard to the project research data.

The DMP covers the complete research data life cycle. It describes the types of research data that will be generated or collected during the project, the standards that will be used, how the research data will be preserved and what parts of the datasets will be shared for verification or reuse. It must be consistent with exploitation and IPR requirements.

Research data linked to exploitable results will not be put into the open domain if they compromise its commercialisation prospects or have inadequate protection, which is a H2020 obligation. The rest of research data will be deposited in an open access repository.

3 Data Management Plan

In this second version of the Data Management Plan, we have created a Initial DMP using this tool.



In deliverable Data Management Plan 3 (to be submitted at the end of the project) we will complete the DMP process, creating the Detailed DMP and the Final review DMP, following the steps of the DMPONLINE tool.

The following pages show the Initial DMP created using DMPONLINE.

HISTO-MRI DMP

A Data Management Plan created using DMPonline

Creator: José M. Benlloch

Affiliation: Other

Template: European Commission

ORCID iD: 0000-0001-6073-1436

Grant number: 737180

Project abstract:

The main objective of HISTO-MRI project is to develop the technologies that will enable the non-invasive visualization of individual human cells in vivo and in real time, based on a radical new Magnetic Resonance Imaging concept: High Frequency Pulsed MRI. To accomplish this ambitious objective, several new challenging multidisciplinary technologies will have to be developed: 1) new method for the production of magnet coils, based on additive manufacturing technology, in order to stand very high currents at very high frequencies; 2) novel high frequency high voltage pulse power sources, based of semiconductor switches, to feed those magnet coils; and new pulse sequencing and computer algorithms to deal with and analyse the enormous amount of data. Therefore, this project has a foundational character, establishing the basis for a new field of research, pulsed MRI in the high frequency regime, which will radically advance MRI performance to micron resolution. A Proof of Concept of the new technology will be accomplished through the visualization of a mouse brain at the neuron level. This new technology will enable transformative research in the fields of neurosciences, bioengineering, biophysics and experimental oncology.

Last modified: 27-02-2019

HISTO-MRI DMP - Initial DMP

For each data set specify the following:

Data set reference and name

HISTO-MRI

Data set description

The data generated in the project can be divided in two different categories: public and confidential data.

The public data will include the website of the project, papers published in different media and the public deliverables.

The project will create several public deliverables. This means they will be accessible to any person or organization. These deliverables are the outputs of different tasks of the project. They are used by the European Commission to validate the result of the work carried out by the consortium. Additionally, it can provide useful information to other similar projects or the general public about HISTO-MRI.

The confidential data will include the confidential/restricted deliverables and other additional informacion exchanged by the members of the consortium in order to allow the development of the project.

Standards and metadata

The formats to be used for these documents will be:

- Rich Text Format (.rtf): The Rich Text Format is a proprietary document file format with published specification developed by Microsoft Corporation for cross-platform document interchange with Microsoft products. Most word processors are able to read and write some versions of RTF. There are several different revisions of RTF specification and portability of files will depend on what version of RTF is being used. RTF specifications were changed and published with major Microsoft Word and Office versions.
- PDF (.pdf): The Portable Document Format is a file format used to present documents in a manner independent of application software, hardware, and operating systems. Each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, graphics, and other information needed to display it.
- OpenDocument Text (.odt): The OpenDocument Text Document Format is a format for editable textual documents. It is one of several subtypes in the ODF family for particular content categories. Designed to be a native format for word-processing applications, the format is sometimes called ODT after its usual file extension.
- MS Word (.doc/.docx): This is the text document format developed by Microsoft and used by the MS Word application, included in the Office suite. It is widely used and has become a de facto standard for text documents.
- Software code resulting from the applications developed in MatLab and C++ for the experimental control (GUI), the design and execution of pulse sequences and the data analysis and image reconstruction.
- Raw MRI data of the images published in scientific papers: this will include different formats: plain text for the pulse sequence description, description of the postprocessing operations in k space and description of the postprocessing operations in real space;; .csv files for the temporal signals acquired by our detectors; bitmap for raw image in k space, processed image in k space, raw image in real space and processed image in real space.

Data sharing

The consortium will provide “gold” open access to part of the information (report of the proof of concept results, including the outcomes of the preclinical validation), using its own repository, through the project web site, under the PUBLIC RESULTS section and through public repositories like Zenodo.

Archiving and preservation (including storage and backup)

The public documentation will be stored in the consortium own repository for five years after the end of the project.

The public documents deposited in Zenodo will be retained for the lifetime of the repository, which is currently the lifetime of the host laboratory CERN and has an experimental programme defined for the at least next 20 years. Data files and metadata are backed up on a nightly basis, as well as replicated in multiple copies in the online system. All data files are stored along with a MD5 checksum of the file content. Regular checks of files against their checksums are made.

The private documents (software code) will be stored in GIT (<https://git-scm.com>) and will be accessible only for the members of the Consortium.