



H2020-LC-SC3-2018-2019-2020

EUROPEAN COMMISSION

Innovation and Networks Executive Agency



BIOfuels production from Syngas FERmentation for Aviation and maritime use
Grant Agreement No 884208

Deliverable D1.2 Data Management Plan (first version)

Document Details	
Due date	30/09/2020
Actual delivery date	26/10/2020
Version	final first version
Prepared by	CERTH
Input from	all partners
Reviewed by	all partners

Dissemination Level	
<input checked="" type="checkbox"/>	PU - Public
<input type="checkbox"/>	PP - Restricted to other programme participants (including the EC)
<input type="checkbox"/>	RE - Restricted to a group specified by the consortium (including the EC)
<input type="checkbox"/>	CO - Confidential, only for members of the consortium (including the EC)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 884208. This document reflects only the author's view and INEA is not responsible for any use that may be made of the information it contains.



Disclaimer of warranties

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 884208.

This document has been prepared by BioSFerA project partners as an account of work carried out within the framework of the EC-GA contract no 884208.

Neither Project Coordinator, nor any signatory party of BioSFerA Project Consortium Agreement, nor any person acting on behalf of any of them:

- a. makes any warranty or representation whatsoever, express or implied,
 - with respect to the use of any information, apparatus, method, process, or similar item disclosed in this document, including merchantability and fitness for a particular purpose, or
 - that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or
 - that this document is suitable to any particular user's circumstance; or
- b. assumes responsibility for any damages or other liability whatsoever (including any consequential damages, even if Project Coordinator or any representative of a signatory party of the BioSFerA Project Consortium Agreement, has been advised of the possibility of such damages) resulting from your selection or use of this document or any information, apparatus, method, process, or similar item disclosed in this document.





Abbreviations

DFBG	Dual Fluidized Bed Gasification
DMP	Data Management Plan
DoA	Description of action
DOI	Digital Object Identifier
OA	Open Access
WP	Work Package



Contents

Executive Summary	5
1. Introduction.....	6
1.1. Data Availability and Open Access	Error! Bookmark not defined.
2. Approach to Data management	8
2.1. Data Storage & sharing.....	9
3. Description of Project Datasets.....	13
3.1. WP1 Datasets	14
3.2. WP2 Datasets	15
3.3. WP3 Datasets	18
3.4. WP4 Datasets	21
3.5. WP5 Datasets	24
3.6. WP6 Datasets	26
3.7. WP7 Datasets	29
3.8. WP8 Datasets	31
4. Conclusions.....	33
References.....	34
Annexes	Error! Bookmark not defined.





Executive Summary

This deliverable is the first version of the BioSFerA Data Management Plan and comprises the way that research data is handled during and after the project, what data will be collected, processed or generated, the methodology & standards to be applied and the kind of data sharing. Moreover, the methodology of how data will be shared and/or how to make them available to users is also presented.





1. Introduction

BioSFerA is a H2020 funded research and innovation action project which aims to develop a novel process for sustainable biofuels production for marine and aviation, combining thermochemical, biotechnological and thermocatalytic technologies.

This Data Management Plan (DMP) outlines the way that data is collected or generated within the BioSFerA project and how they will be organised, stored, and shared. It specifies which of the data will be publicly available (open access) and which will be available only to the consortium (confidential), as far as this is possible at this stage. The DMP describes the standard formats, meaningful metadata and open repositories to share data and enable other users to build on the knowledge gained during the project.

The first audience to which this report is addressed is the internal partners; there are eleven partner organizations from Greece, Spain, Finland, Italy, Belgium and the Netherlands. The DMP will establish consistent practices among partners to increase the efficiency and robustness of data handling during delivery of the project. The second audience of this report is the community of researchers, engineers, and biofuel producers interested in a sustainable way of drop-in biofuel production.

This report is an initial version of the DMP, prepared at the outset of the project. It will be updated as the project progresses, since not all data or potential uses are clear from the beginning. New versions of the DMP will be created whenever significant changes occur in the project due to the inclusion of new data sets, modifications in consortium policies or external factors. A new version will be released in month 18 (September 2021) which will be public again. The DMP will be continuously updated until the end of the project.

The term **open access** (OA) refers to the free provision of scientific information (data, findings, publications etc.) to others through online means. In the question “*why to make my research open access?*”, the justification lays on economic and ethical principles as:

- the undertaken research has been paid with public funds and
- there is no reason to pay again in order to gain access to this information when it is required for use by other researchers, industries, students, or citizens.

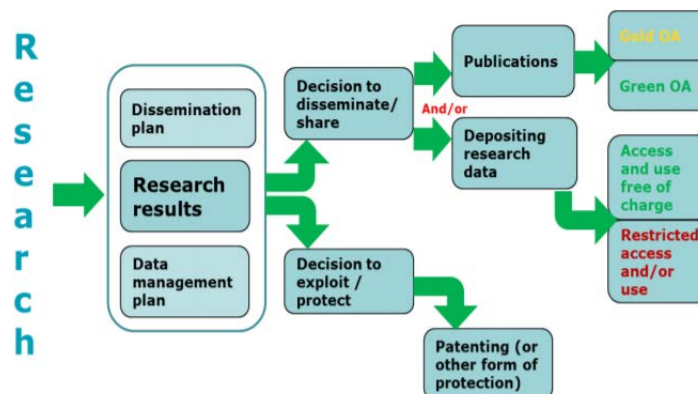


Figure 1. Open access to scientific publication and research data in the wider context of dissemination and exploitation (reproduced from [1])





According to the “Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020” [1], it is encouraged to provide open access to scientific publications and data, as this contributes to:

- i) the quality improvement of research by building on a stronger body of existing work,
- ii) increase in efficiency of research by reducing duplication of effort,
- iii) innovations to market quicker by reducing barriers to information flow,
- iv) enhancement of the transparency of scientific progress.

The first step after each research is to decide how to disseminate its results. The two options are either to publish the research findings or to keep confidential some aspects for commercial exploitation. The IPR Management Plan (D8.2), led by ENVIPARK to be delivered in M8 (November 2020) will outline the main processes that determine the path for different aspects of the project.

Then, as showed in Figure 1, the process will guide the involved partners to manage each exploitable result. Patent searches and the clarification of each partner’ legitimate interests in relation to the project results will be performed (if necessary), and before each dissemination activity, IPR agreements between partners will be required. The Exploitation Plan will clarify these findings and ultimately lead to the relevant deliverable namely “BioSFerA TRL 9 Roadmap” D7.4 led by GF, at the end of the project (M48).





2. Approach to Data management

The development of this report has been based on the Horizon 2020 guidelines [1] with additional guidance from the Guidelines on FAIR Data Management in Horizon 2020 [2]. The most critical aspects about the management of the data that will be publicly available and the principles for FAIR data are outlined below.

2.1. Open Access publishing

The term “Open access publishing” describes the availability of accessing the peer-reviewed scientific publications for anyone without charge. The obligation of ensuring open access (free of charge online access for any user) to all peer-reviewed scientific publications by each beneficiary is specified in the Grant Agreement. According to Article 29.2, the BioSFerA partners must:

a) as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications; Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

b) ensure open access to the deposited publication — via the repository — at the latest:

- (i) on publication, if an electronic version is available for free via the publisher, or
- (ii) within six months of publication in any other case.

c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

Moreover, the bibliographic metadata must be in a standard format and must include all of the following:

- the terms “European Union (EU)” and “Horizon 2020”
- the name of the action, acronym and grant number
- the publication date, and length of embargo period if applicable, and
- a persistent identifier (DOI).

To accomplish these obligations, both “green” and “gold” open access routes will be adopted. “Green” open access (also referred to as self-archiving), is the upload of a final peer reviewed manuscript through an online repository. This may be possible after an embargo period set by the publisher. On the other hand, “gold” open access enables the article to be freely and permanently accessible for everyone, immediately after publication [3].

CERTH as the project coordinator is committed to guaranteeing that the project results will be readily accessible. For that reason, CERTH suggests to host all the scientific publications related to BioSFerA project in online research dissemination platforms such as OpenAIRE’s Zenodo repository





(<https://zenodo.org/>) and ResearchGate (<https://www.researchgate.net/>). The bibliographic metadata as well as the relevant links to the repository platforms will be also exposed at the BioSferA website (<https://biosfera-project.eu/>).

Regarding gold open access route, a part of some partners' budget is foreseen to be used for the coverage of the publication fees of such manuscripts.

2.2. How to get FAIR data

BioSferA has committed to participating in the 'Pilot on Open Research Data in Horizon 2020' voluntarily. According to [4, 5], the guiding principles to make data Findable, Accessible, Interoperable, and Reusable (FAIR) are the following:

- ✓ **Findable:** data should have a unique, persistent ID, that is located in a resource that is easy to find, and documented with meaningful metadata
- ✓ **Accessible:** data should be instantly retrievable using common methods and protocols. It is important to say that the respective metadata should be accessible even if the data is not.
- ✓ **Interoperable:** data should be presented in widely recognised formats, vocabularies, and languages.
- ✓ **Re-useable:** data should be given with a clear and accessible data usage license, having a variety of precise and relevant characteristics.

The realization of this approach is established in this DMP, presenting an overview. More information will be given in the interim and final reports, when the activities in the work packages proceed.

In principle, project datasets for dissemination will be open access. However, some of the work packages will create datasets that will not be publicly available. Much of the data during the project will be for internal management and communication only in consortium level.

2.3. Data Storage & sharing

The project has four main data storage and sharing facilities according to the type of data and its intended accessibility.

- **Private.** Stored locally on organisational networks and assets, subject to institutional back up practices.
- **Consortium.** CERTH will host a common space on web by means of the commercial platform "AdminProject", which is secure, robust and accessible to all project partners. Consortium data will be uploaded to this cloud storage for simple, secure access for all partners from within a web browser. Data is maintained with regular offsite backups. More information about that is presented below.
- **Public.** Two facilities will be used during the project.

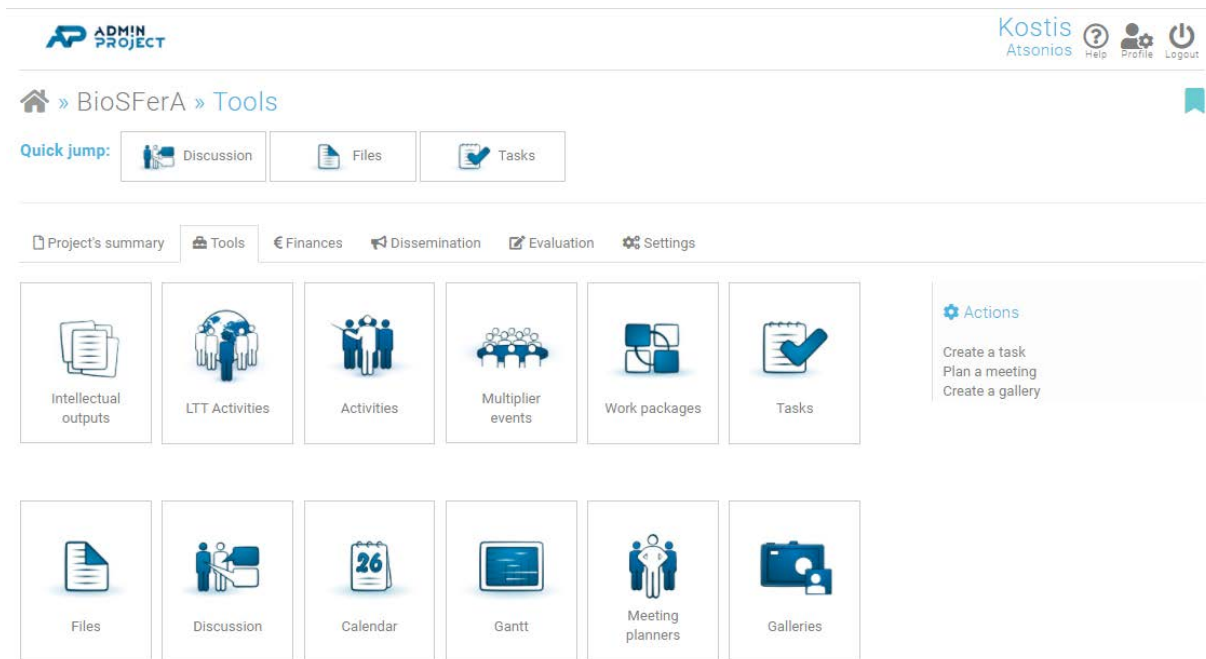




- The **project website** (<https://biosfera-project.eu/>) managed by ENVIPARK, will be the first point of contact for public dissemination. It will host project technical reports and other materials such as events, blog articles, images, videos, links to partner organisations and related projects.
- Large, re-useable data sets will be deposited in an **open data repository**, e.g. Zenodo, selected by the task leaders during the delivery of the relevant work packages.

2.3.1. AdminProject: storing and sharing data among the consortium

In the frame of the project, an internal repository for the document exchange among the partners and for the files archiving was set-up by CErTH. The repository is based on “AdminProject” a commercial project management platform for file storage, and share. It has been designed especially for EU-funded projects and is a collaboration platform that provides all the required tools to replicate the project in user’s on-line workspace.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 884208.


This document reflects only the author's view. The Innovation and Networks Executive Agency (INEA) is not responsible for any use that may be made of the information it contains.


Figure 2. AdminProject workspace


AdminProject is accessible by web through a personalized account (user name and password).






 Please login

Login with Google 

Login with LinkedIn 

Login with Facebook 

- or -

Please provide your e-mail address and your password to begin.

[Sign up](#) | [Lost password?](#)

Figure 3. AdminProject login page

An overview of the internal structure of the repository is shown in Figure 4, whereas the typical configuration of a WP folder (in the picture, the WP1 folder is shown as an example) is illustrated in Figure 5.

































 Contractual Documents	
 Dissemination Material	
 Meetings	
 Periodic Reporting	
 Technical Telco	
 Templates	
 WP1	
 WP2	
 WP3	
 WP4	
 WP5	
 WP6	
 WP7	
 WP8	
 WP9	

Figure 4. Internal structure of the repository based on Admin Project

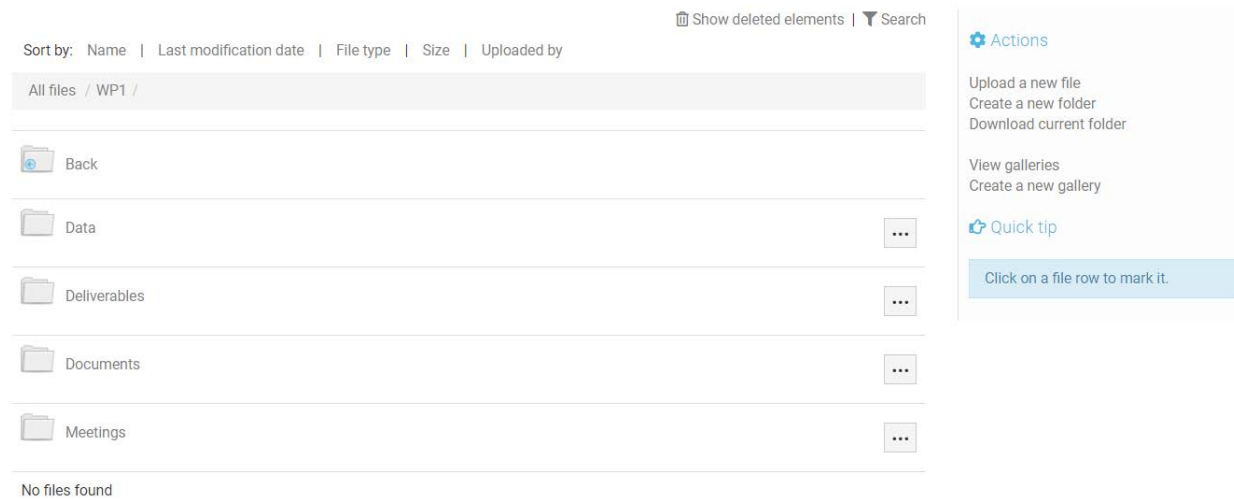


Figure 5. Basic structure of the WP folders

3. Description of Project Datasets

This section contains the dataset description per task. Datasets are numbered according to their primary task number, according to the Description of Action of the Grant Agreement. Next versions of DMP deliverables will provide more information and task oriented details.

The Dataset template seen below describes the data collected for each task within a specific work package. However, it is anticipated that these dataset templates for each WP will be modified and classified according to data types. These will be included in the forthcoming updated DMP version in M18, M36 and M48.

Task X.X Dataset	
Dataset reference / name	Dataset name
Task Name	Name of the Task as it mentioned in the DoA
Task & Data Manager	Name of Task leader/data manager (Organization) who takes responsibility
Availability	Private, Consortium or Public, as defined in section 2.3
Mandatory metadata	European Union, H2020, BIOfuels production from Syngas FERmentation for Aviation and maritime use, GA No 884208
Dataset Specific Metadata	Keyword(s) that categorize data to make it linked/searchable
Dataset description	Data description, origin, nature, scale, if it underpins a publication, who useful to, existence of similar data, possibilities for reuse.
Standards	Reference to existing standards in topic area governing data collection, aggregation, storage and sharing.
Data sharing	How the data will be shared, identification of repository, existence of embargo period if any, identification of software or tools necessary for reuse.





Archiving and preservation (storage/backup):	The procedure for long-term preservation, length of preservation, an estimation of costs and how this will be covered.
---	--

3.1.WP1 Datasets

Task 1.1 Dataset	
Dataset reference / name	Effort allocation (planned vs real)
Task Name	Overall Project Coordination, Administrative & Financial Management
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Planned Effort versus real effort, Project management
Dataset description	T1.1 is in charge of collecting the following data derived from the project and store it in the form of deliverables: <ul style="list-style-type: none"> • Effort plan for all partners • Real plan collected each semester • Technical achievements per partner and per WP • Financial information from partners • Payment records
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 1.2 Dataset	
Dataset reference / name	Quality risks assessment
Task Name	Quality Assurance, Risks and Ethical issues management
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Risks, Quality, Contingency Plans





Dataset description	T1.2 is in charge of collecting the following data derived from BioSFerA and store it in the form of deliverables: <ul style="list-style-type: none"> • Risks detected and contingency plans • Quality actions planned and taken • Objective mapping • Technical & scientific results
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 1.3 Dataset	
Dataset reference / name	Periodic and Final Reports
Task Name	Reporting and communication with EC officers
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium & EU
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Reporting
Dataset description	T1.3 is in charge of compiling all the interim financial and final report and manage liaison with the EC, through the communication with the Project Officers.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

3.2. WP2 Datasets

Task 2.1 Dataset	
Dataset reference / name	stakeholders needs report
Task Name	Elicitation of stakeholders requirements and market needs
Task & Data Manager	Nikos Detsios (CERTH)
Availability	Consortium





Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Questionnaires, Literature
Dataset description	T2.1 is in charge of BioSFerA's stakeholders identification and the definition of their requirements, specifications and market needs. This will be performed via questionnaires. Therefore, the dataset of this task contains: <ul style="list-style-type: none"> • List of stakeholders and the corresponding questionnaires • Answers from internal (consortium members) and external identified stakeholders
Standards	No specific standards for these data
Data sharing	Any requested privacy concerning the provided answers will be respected. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 2.2 Dataset	
Dataset reference / name	BioSFerA key performance indicators
Task Name	KPIs definition
Task & Data Manager	Raúl Piñero (CARTIF)
Availability	Public
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	KPI, evaluation, terminology, metrics
Dataset description	The dataset of this task includes: <ol style="list-style-type: none"> A list of terms and definitions constituting altogether the BioSFerA Common Terminology A list of Key Performance Indicators with their definition, mathematic equations and bibliography resources.
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject





Task 2.3 Dataset	
Dataset reference / name	biomass analysis and feedstock availability assessment
Task Name	Feedstock selection and fuel characterization
Task & Data Manager	Nikos Detsios (CERTH)
Availability	Public
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Biomass capacities, Feedstock characterization & stoichiometric analysis
Dataset description	T2.3 is in charge of identification of the most suitable biogenic residues for the BioSFerA process. The task is separated in two main actions/parts: <ul style="list-style-type: none"> • identification of the most promising feedstock in terms of availability and capacity in specific regions in Europe • Analysis and characterization of the selected biomass feedstock types
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 2.4 Dataset	
Dataset reference / name	Case studies
Task Name	Case studies definition
Task & Data Manager	Nikos Detsios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Biomass capacities, Hypothetical sustainable scenarios
Dataset description	This dataset will include all the necessary information that will be used as input for the case studies that will be investigated in detail in WP7, mainly: <ul style="list-style-type: none"> • Feedstock potentials • Logistics





Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 2.5 Dataset	
Dataset reference / name	BioSFerA value chain
Task Name	Full process basic definition
Task & Data Manager	Nikos Detsios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	value chain, process parameters definition
Dataset description	This dataset will include the initial information about the BioSFerA process <ul style="list-style-type: none">• Process boundary & operating conditions• Preliminary performance estimation• Process model
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

3.3. WP3 Datasets

Task 3.1 Dataset	
Dataset reference / name	TRL4 gasification tests
Task Name	Bench scale gasification tests at TRL4
Task & Data Manager	Nikkanen Ville (VTT)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	gasification test matrix, syngas composition analysis





Dataset description	This dataset will include the experimental input and output from the bench scale gasification tests performed by VTT.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in pdf. formats files.
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns

Task 3.2 Dataset	
Dataset reference / name	GMO preparation
Task Name	Advanced GMO preparation and general strategy for process configuration
Task & Data Manager	Jorge Barriuso (CIB-CSIC)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	acetogenic bacteria, oleaginous yeasts
Dataset description	This dataset will include: - Protocols for the construction of genetic modified bacteria and yeast in Word format - Results from testing the modified strains in Excel format.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx,.pdf formats and .csv files.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 3.3 Dataset	
Dataset reference / name	Gas fermentation process optimization
Task Name	Optimization of CO ₂ /CO/H ₂ fermentation process parameters for acetate production (1st stage) using improved acetogenic bacteria
Task & Data Manager	Raúl Piñero (CARTIF)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	acetogenic bacteria, lab scale fermentation tests





Dataset description	This dataset will include the experimental input from the gas fermentation trials at lab scale performed by BBEPP, CSIC and CARTIF, including: -Gas fermentation mode -Operational parameters (temperature, pH, pressure, gas supply) -Process performance (productivity, titer, conversion rate) -Influence of contaminants
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 3.4 Dataset	
Dataset reference / name	Acetate fermentation process optimization
Task Name	Optimization of acetate fermentation process parameters for C14 and C16-18 TAGs production (2nd stage) using metabolically engineered oleaginous yeasts.
Task & Data Manager	Raúl Piñero (CARTIF)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	oleaginous yeasts, lab scale fermentation tests
Dataset description	This dataset will include the experimental input from the liquid fermentation trials at lab scale performed by BBEPP, CSIC and CARTIF, including: -Liquid fermentation mode -Operational parameters (temperature, pH, media components, acetate concentration) -Process performance (productivity, titer, conversion rate, fatty acid composition of TAGs)
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 3.5 Dataset	
Dataset reference / name	TRL4 TAGs recovery and purification





Task Name	Benchmarking of Lab scale downstream processing for TAGs recovery and purification
Task & Data Manager	Paola Zitella (ENVIPARK)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	TAGs recovery, TAGs purification, centrifugation, mechanical extraction, steam explosion, membrane separation.
Dataset description	This dataset will include the following process parameters derived from the project and stored in the form of deliverable: 1) the yield of recovered lipids 2) the TAGs purity according to the required specs for hydrotreatment as determined by KPRT 3) the estimated specific energy consumptions (kWh per lt of recovered oil) 4) The isolation protocol of the selected process
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

3.4. WP4 Datasets

Task 4.1 Dataset	
Dataset reference / name	DFB unit operation parameters fine-tuning
Task Name	Modification of the processing units to meet the pre-defined specifications
Task & Data Manager	Nikkanen Ville (VTT)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	gasification unit modifications, selected process parameters
Dataset description	This dataset will include the necessary modifications in the DFB unit performed by VTT and the determination of the process parameters for the low-cost and optimal syngas production, suitable for the gas fermentation process.





Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats.
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns

Task 4.2 Dataset	
Dataset reference / name	Gasification and syngas fermentation units integration
Task Name	Integration of the mobile fermentation unit to synthesis gas plant
Task & Data Manager	Nikkanen Ville (VTT)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	gasification unit modifications, selected process parameters
Dataset description	This dataset will include the actions for the successful assembly of all the pilot scale parts (i.e. gasification, syngas cleaning, syngas fermentation mobile unit, etc.) before the start of pilot activities <ul style="list-style-type: none"> • Modifications to the piloting units • Process automation, common risk assessment, and HAZOP • Detailed scheduling of the shipping, installation, and test runs • Shipping of the mobile gas fermentation unit • Installation of the mobile fermentation unit • Final preparation and proof testing of the integrated plant
Standards	No specific standards for these data
Data sharing	Close cooperation and communication between VTT and BBEPP is needed. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files (to be defined).
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns

Task 4.3 Dataset	
Dataset reference / name	Piloting runs
Task Name	Execution of the piloting runs with the integrated synthesis gas fermentation plant at TRL 5
Task & Data Manager	Nikkanen Ville (VTT)
Availability	Consortium
Mandatory metadata	European Union H2020





	BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	pilot runs results
Dataset description	This dataset will include the information from the TRL5 piloting runs in VTT facilities.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx,.pdf formats and .csv files (to be defined).
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns

Task 4.4 Dataset	
Dataset reference / name	Large scale TAG production
Task Name	Scale-up of TAG production at large pilot unit
Task & Data Manager	Karel de Winter (BBEPP)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	TAGS production results
Dataset description	This dataset will include the fermentation parameters from the TRL5 TAGs production in BBEPP facilities
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx,.pdf formats and .csv files (to be defined).
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns. During the experiment, data will be saved on a hard drive on-site at BBEPP (server room), which is backed up daily. On a monthly basis, a manual backup is made on an external hard drive, which is stored off-site by the IT personnel.

Task 4.5 Dataset	
Dataset reference / name	TAGs extraction & purification
Task Name	Microbial oil extraction and purification
Task & Data Manager	Karel de Winter (BBEPP)
Availability	Consortium
Mandatory metadata	European Union H2020





	BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Purified microbial oil characteristics
Dataset description	This dataset will include the results from the pilot run of TAGs recovery and purification prior to their hydrotreating.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files (to be defined).
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns. During the experiment, data will be saved on a hard drive on-site at BBEPP (server room), which is backed up daily. On a monthly basis, a manual backup is made on an external hard drive, which is stored off-site by the IT personnel.

3.5. WP5 Datasets

Task 5.1 Dataset	
Dataset reference / name	TAG characterization
Task Name	TAG quality characterization
Task & Data Manager	Abrar Hakeem (KPRT)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	TAGs characterization
Dataset description	This dataset will include analysis results (Lab Information Management System or LIMS) of the TAGs characterization and a report on its suitability for hydrotreating.
Standards	No specific standards for these data
Data sharing	Document for the consortium will be made in or converted to Microsoft Office files (*.doc, *.docx, *.xls, *.xlsx, *.pptx) and *.pdf format.
Archiving and preservation (storage/backup):	All records are kept on the administrative network of Kuwait Petroleum North West Europe, and are backed-up according to internal procedures. Reports are archived according to procedure “Records and registrations retention and data protection” <ul style="list-style-type: none"> • RAW analysis data (LIMS) are stored for a minimum of 5 years • Research summary reports are archived for minimum 5 years





Task 5.2 Dataset	
Dataset reference / name	Catalyst pre-screening
Task Name	Catalyst pre-screening pilot scale hydroprocessing
Task & Data Manager	Abrar Hakeem (KPRT)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	catalyst selection
Dataset description	This dataset will include a test-report of pilot plant activities and related analysis (LIMS) for the selection of the best catalysts for TAG hydro treating.
Standards	No specific standards for these data
Data sharing	Document for the consortium will be made in or converted to Microsoft Office files (*.doc, *.docx, *.xls, *.xlsx, *.pptx) or *.pdf format.
Archiving and preservation (storage/backup):	All records are kept on the administrative network of Kuwait Petroleum North West Europe, and are backed-up according to internal procedures. Reports are archived according to procedure “Records and registrations retention and data protection” <ul style="list-style-type: none">• RAW analysis data (LIMS) are stored for a minimum of 5 years• Research summary reports are archived for minimum 5 years

Task 5.3 Dataset	
Dataset reference / name	Lab scale TAG hydrotreating
Task Name	TAG hydrotreating development in TRL3
Task & Data Manager	Stella Bezergianni (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	TRL3 TAGs hydroprocessing tests results, HTAGS characterization
Dataset description	This dataset will include the activities on lab scale TAGs hydrotreatment at CERTH’s facilities.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files (to be defined).





Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns
---	---

Task 5.4 Dataset	
Dataset reference / name	Pilot scale TAG hydrotreating
Task Name	TAGs hydrotreating validation in industrial relevant environment (TRL5)
Task & Data Manager	Stella Bezergianni (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	TRL5 TAGs hydroprocessing tests results, HTAGS characterization
Dataset description	This dataset will include the activities on pilot scale TAGs hydrotreatment at CERTH's facilities.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, .pdf formats and .csv files (to be defined).
Archiving and preservation (storage/backup):	Offsite backup of AdminProject after the completion of the test campaigns

3.6. WP6 Datasets

Task 6.1 Dataset	
Dataset reference / name	DFB Gasification 3-D model
Task Name	Model development of the gasification process
Task & Data Manager	Juha Palonen (SHI FW)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	gasification 3-D model, EMMS model
Dataset description	This data set contains the 3-D DFBG model and all the developed subroutines and codes
Standards	No specific standards for these data
Data sharing	The full dataset will be confidential and only the members of the consortium will have access to it. The usage of the dataset by members of the consortium will be allowed by CERTH and SHI-FW upon request . In case research activities use the specific dataset, CERTH and SHI-FW





	<p>need to be informed and collaborate with the interested members to derive a joint work.</p> <p>Furthermore, if the dataset or specific portions of it (e.g. metadata, statistics, etc.) are decided to become of widely open access, a data management portal needs to be created that should provide a description of the dataset and link to a download section.</p> <p>Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.</p>
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 6.2 Dataset	
Dataset reference / name	BioSFerA process model
Task Name	Full chain process model at commercial scale
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	system integration, process design
Dataset description	This data set contains the overall optimized process model, the suggested operating conditions and the full-scale mass & energy balances
Standards	Specific standards could be adopted to describe models and software (to be defined during the work package lifetime)
Data sharing	<p>The full dataset will be confidential and only the members of the consortium will have access to it. The usage of the dataset by members of the consortium will be allowed upon request from CERTH.</p> <p>Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.</p>
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 6.3 Dataset	
Dataset reference / name	Process layout & cost
Task Name	Process layout and cost engineering
Task & Data Manager	Juha Palonen (SHI FW)
Availability	Consortium





Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Process layout, cost engineering
Dataset description	This data set concerns the total equipment cost estimation. It contains: <ul style="list-style-type: none"> • Design rules for component sizing • Process layout: cost estimation
Standards	No specific standards for these data
Data sharing	The full dataset will be confidential and only the members of the consortium will have access to it. The usage of the dataset by members of the consortium will be allowed upon request from SHI-FW. Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 6.4 Dataset	
Dataset reference / name	Dynamic simulations and control
Task Name	Dynamic process simulations and plantwide control
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Dynamic behavior, process control
Dataset description	This data set concerns the dynamic simulations of the plant and it contains: <ul style="list-style-type: none"> • System response in fuel flexibility • Time-dependent value chain analysis
Standards	Specific standards could be adopted to describe models and software (to be defined during the work package lifetime)
Data sharing	The full dataset will be confidential and only the members of the consortium will have access to it. The usage of the dataset by members of the consortium will be allowed upon request from CERTH.





	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

3.7. WP7 Datasets

Task 7.1 Dataset	
Dataset reference / name	TEA
Task Name	Techno-economic assessment
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Cost estimation, techno-economic assessment
Dataset description	This data set concerns the techno-economic assessment performed for the selected case studies aiming to seek the proper framework under which the BioSFerA concept is economically viable.
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 7.2 Dataset	
Dataset reference / name	Market Assessment & Exploitation
Task Name	Market Assessment and Exploitation
Task & Data Manager	Rianne de Vries (GF)
Availability	Public
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	competitor market analysis, market size, market trend, TRL9 roadmap





Dataset description	This data set concerns the full-scale competitor market analysis of different processes, to be useful to further study a TRL9 Roadmap for BioSFerA process and biofuels marketability.
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 7.3 Dataset	
Dataset reference / name	LCA & LCC methodology
Task Name	Environmental Assessment (LCA/LCC)
Task & Data Manager	Kostis Atsonios (CERTH)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Life Cycle Analysis data, Life Cycle Cost Assessment data
Dataset description	This data set concerns the implementation of environmental KPI analysis. It contains primary & secondary indicators selected for the techno-economic and environmental evaluation of the BioSFerA concept: <ul style="list-style-type: none"> • Energy and materials consumptions • Infrastructure, installation & operation • Direct costs for acquisition, operation & maintenance and disposal • Indirect costing data (environmental and health related externalities)
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 7.4 Dataset	
Dataset reference / name	sLCA & sCBA methodology
Task Name	Social LCA and Social CBA
Task & Data Manager	Dimitris Lyridis (NTUA)
Availability	Public
Mandatory metadata	European Union





	H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Social Life Cycle Analysis data, social Cost Benefit Analysis data
Dataset description	This data set concerns the implementation of the social assessment of the BioSFerA concept.
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 7.5 Dataset	
Dataset reference / name	HSE
Task Name	Health and Safety Evaluation Risk assessment
Task & Data Manager	Marco Gattuso (RINA-C)
Availability	Confidential
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Health and Safety Evaluation, Risk assessment
Dataset description	This data set concerns the appropriate safety measures and procedures for securing the safe performance of the BioSFerA process at industrial scale, with particular reference to the generation and use of hydrogen. An HSE analysis will be applied. The dataset consists of worksheets identifying the process deviations and related risks, including mitigation measures and an evaluation of their adequacy and eventual recommendations.
Standards	No specific standards for these data
Data sharing	Data will be stored on the project Shared Platform space hosted by CERTH. Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

3.8. WP8 Datasets

Task 8.1 Dataset	
Dataset reference / name	Communication & Dissemination plan





Task Name	Communication & Dissemination plan
Task & Data Manager	Paola Zitella (ENVIPARK)
Availability	Consortium, other parties upon request.
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Exploitation, dissemination, communication, website
Dataset description	This data set relates the dissemination, exploitation & communication plan. It includes information about stakeholders, and target audiences, individual partner's exploitation plans, project promotional material and social media channels, basic market analysis. Other than project partners it is useful to other H2020 projects for the purposes of reusing.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

Task 8.2 Dataset	
Dataset reference / name	Dissemination & Dissemination activities
Task Name	Communication & Dissemination tools, materials and activities
Task & Data Manager	Paola Zitella (ENVIPARK)
Availability	Consortium, other parties upon request.
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	Dissemination, communication, website, social media, Twitter, Facebook.
Dataset description	This data set relates to T9.2, dissemination activities, web portal & social media presence. It includes information about partner communication channels, the project website, social media handles, project results (high level). Other than project partners it is useful to other H2020 projects for the purposes of reusing.
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject





Task 8.3 Dataset	
Dataset reference / name	IPR strategy
Task Name	Intellectual Property Rights (IPR) strategy and management
Task & Data Manager	Paola Zitella (ENVIPARK)
Availability	Consortium
Mandatory metadata	European Union H2020 BIOfuels production from Syngas FERmentation for Aviation and maritime use GA No 884208
Dataset Specific Metadata	IPR protection, intellectual property, consortium agreement.
Dataset description	This data set includes information about main users, individual partner's IPR background and exploitable project results (IPR foreground).
Standards	No specific standards for these data
Data sharing	Uploaded files will be in Microsoft Office in .doc, .docx, .xls, .xlsx, and .pdf formats.
Archiving and preservation (storage/backup):	Standard daily offsite backup of AdminProject

4. Conclusions

This document introduced the plan for data management that the BioSFerA project will follow, identified the datasets that will be collected or generated, and described how they will be stored and shared. It has also been specified which data will be provided as open access and which will be confidential within the consortium, as far as this is possible at this stage. In addition, repositories and resources for sharing data are identified.

It is anticipated that the most significant datasets are the quantitative and qualitative datasets produced by the laboratory and piloting activities i.e. WP3-WP4-WP5.

It is intended that where possible these data will be made available through open access repositories and starting from September 2020, all project deliverables which are flagged with the dissemination level '**PUBLIC**' will be published on CORDIS portal.





References

- [1] European Commission. Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020. Version 32 21 March 2017 2017.
- [2] European Commission. Guidelines on FAIR Data Management in Horizon 2020. in: V. 3.2, (Ed.).2017.
- [3] <https://www.springer.com/gp/authors-editors/authorandreviewertutorials/open-access/what-is-open-access/10286522>.
- [4] <https://www.force11.org/group/fairgroup/fairprinciples>.
- [5] M.D. Wilkinson, M. Dumontier, I.J. Aalbersberg, G. Appleton, M. Axton, A. Baak, et al. The FAIR Guiding Principles for scientific data management and stewardship. Scientific Data. 3 (2016) 160018.

