



# Assessing aViation emission Impact on local Air quality at airports: TOwards Regulation - AVIATOR

Grant Agreement number: 814801

## D1.3

### Data Management Plan (DMP)

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## EXECUTIVE SUMMARY

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AVIATOR has not opted out of the Pilot on Open Research Data in Horizon 2020. Therefore the project has generated this Data Management Plan (DMP) which addresses the relevant aspects of making data FAIR – findable, accessible, interoperable and re-usable, including what data the project will generate, whether and how it will be made accessible for verification and re-use, and how it will be curated and preserved.

AVIATOR follows the principle "as open as possible, as closed as necessary".

This document is aligned with the Guidelines on FAIR Data Management in Horizon 2020 (Version 3.0, 26 July 2016), Guidelines on Data Management in Horizon 2020 (Version 2.1, 15 February 2016) and Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020 (Version 3.2, 21 March 2017). Moreover, this DMP complies with the following:

- "8.1 Ownership of Results", "8.2 Joint ownership", "8.4 Dissemination", "8.5 Dissemination of another Party's unpublished Results or Background" and 9 Section: Access Rights" of the AVIATOR Consortium Agreement.
- "Article 29 — Dissemination of results — open access — visibility of EU funding", "Article 27 — Protection of results — visibility of EU funding", "Article 36 — Confidentiality", "Article 37 — Security-related obligations" and "Article 39 — Processing of personal data" of the AVIATOR Grant Agreement.
- AVIATOR Deliverable D8.2 "Plan for Exploitation and Dissemination of Results".

This DMP will have 3 versions:

- The initial DMP in month 6, describing the different datasets AVIATOR will use and procedures to manage them.
- The reviewed DMP in month 18, with updated information on the datasets.
- The final DMP in month 36, at the end of AVIATOR project, with the final updated information on the datasets.

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## LIST OF FIGURES

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Not Applicable

## LIST OF ABBREVIATIONS

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2FA	Two-Factor Authentication.
API	Application Programming Interface.
APU	Auxiliary Power Unit.
AVIATOR	Assessing aViation emission Impact on local Air quality at airports: TOwards Regulation.
CA	Consortium Agreement.
EC	European Commission.
EC PO	European Commission Project Officer for AVIATOR.
EEAB	External Expert Advisory Board.
EU	European Union.
FAIR	Findable, Accessible, Interoperable and Re-usable.
H2020	Horizon 2020 – the European Union's Framework Programme for research and innovation.
NA	Not Applicable.
TBD	To Be Defined.



# DATA MANAGEMENT PLAN

## 1. Data Summary

AVIATOR project generates and uses different sets of data (datasets) with different characteristics and requirements when managed. Table 1 shows the AVIATOR datasets.

Ref.	Title	Description
DS1	AVIATOR members details	Dataset containing name, email and affiliation of the personnel from each Partner involved in AVIATOR Project. Moreover, it is also included members information of the AVIATOR External Experts Advisory Board.
DS2	Newsletter subscribers	In order to facilitate communication of visitors with the AVIATOR Project a contact form is used to subscribe them to a newsletter.
DS3	Website and social networks	Website of the project ( <a href="https://aviatorproject.eu">https://aviatorproject.eu</a> ) and Twitter <a href="https://twitter.com/AviatorProject">@AviatorProject</a>
DS4	Dissemination & Communication Materials	Posters, presentations, image and video footage, flyers, public presentations, press releases and other dissemination materials used at conferences and workshops (except scientific publications, please see DS7).
DS5	Research data	Refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion, or calculation.
DS6	Computational data	Models, algorithms and software.
DS7	Scientific Publications	Journal article[s], ... monographs, books, conference proceedings, [and] grey literature (informally published written material not controlled by scientific publishers)", such as reports, white papers, policy/position papers, etc.;
DS8	Project deliverables	32 deliverables of the AVIATOR project, which can be "Public" or "Confidential" as defined in the Project Management Plan.
DS9	General project documents	Including Minutes of Meetings, internal reports, registers, etc.

**Table 1.** AVIATOR datasets.

Table 2 will answer the following questions for each dataset in order to have a data summary of the project.

1. What is the purpose of the data collection/generation and its relation to the objectives of the project?
2. What types and formats of data will the project generate/collect?
3. Will you re-use any existing data and how?
4. What is the origin of the data?
5. What is the expected size of the data?
6. To whom might it be useful ('data utility')?

	<b>DS1</b> <b>AVIATOR</b> <b>members details</b>	<b>DS2</b> <b>Newsletter</b> <b>subscribers</b>	<b>DS3</b> <b>Website and</b> <b>social networks</b>	<b>DS4</b> <b>Dissemination &amp;</b> <b>Communication</b> <b>Materials</b>	<b>DS5</b> <b>Research data</b>	<b>DS6</b> <b>Computational</b> <b>data</b>	<b>DS7</b> <b>Scientific</b> <b>Publications</b>	<b>DS8</b> <b>Project</b> <b>deliverables</b>	<b>DS9</b> <b>General project</b> <b>documents</b>
<b>Purpose</b>	Ability to contact AVIATOR members during the project.	Ability to communicate project results to a wide audience.	Communicate project results via online means.	Communicate project results via printed materials and press releases.	Data obtained from the different measurement campaigns (test cell, on-wing, ambient).  Moreover data from Madrid Barajas and Zurich Airports with details of flights (including aircraft type and flight path localization on an individual flight level), airport policies (taxiway operations and APU operation times), and meteorological data.	The airport dispersion modelling system LASPORT and the CFD model CEDRE will be used for model setup, emission and dispersion calculations.	Dissemination of project results. Includes working papers for ICAO-CAEP WG3 on emissions and other inputs to Regulatory Frameworks.	Materialization of project results. 32 deliverables (15 public and 17 confidential).	MoM, action lists, internal reports, risk registers, ... required for the project.
<b>Types and formats</b>	CSV, Excel	CSV, Excel. Newsletter email list.	Visual (images in png and jpeg and videos in mp4). Plain text and open deliverables in pdf.	Flyers, brochures, posters, press releases.  Mainly printed materials.	CSV, Excel	Executable code	Pdf, Word	Pdf	Pdf, Word, Excel

<b>Reused-Data</b>	NA	NA	Some images comes from photo stock libraries (with rights to use them).	NA	Background, as per defined in AVIATOR CA.	Background, as per defined in AVIATOR CA.  Existing emissions databases.	Existing related scientific publications.	NA	NA
<b>Data origin</b>	Provided by members after their consent.	AVIATOR website, using a newsletter form, which includes a consent checkbox and privacy policy aligned with GDPR.	Photos and videos taken during the project, reports generated.	Information from project (i.e project scope, open results, ...)	Measurement campaigns. Analysis.	Background and new developments.	Gained knowledge from AVIATOR project.	Generated by AVIATOR Partners during the project execution.	Generated by AVIATOR Partners during the project execution.
<b>Expected size</b>	Kbytes	Kbytes	Gbytes	NA	Gbytes	Gbytes	Mbytes	Mbytes	Gbytes
<b>Data utility</b>	Contact AVIATOR members for organization of project meetings and tasks.	Reach a wider audience (online visitors) when communicating project results.	Reach a wider audience (online visitors) when communicating project results.	Materials used during conferences, workshops, ...	Stakeholders identified in Deliverable 8.2 Plan for Exploitation and Dissemination of Results.	Stakeholders identified in Deliverable 8.2 Plan for Exploitation and Dissemination of Results.	Reach scientific community. Support Regulatory Frameworks.	EC means of progress verification. Public deliverables as a dissemination & communication action.	Internal use by AVIATOR Partners and for EC PO.

**Table 2.** AVIATOR data summary.

## 2. FAIR data

### 2.1. Making data findable, including provisions for metadata

Table 3 will answer the following questions for each dataset in order to ensure the data generated by AVIATOR is findable:

1. Are the data produced and/or used in the project discoverable with metadata, identifiable and locatable by means of a standard identification mechanism (e.g. persistent and unique identifiers such as Digital Object Identifiers)?
2. What naming conventions do you follow?
3. Will search keywords be provided that optimize possibilities for re-use?
4. Do you provide clear version numbers?
5. What metadata will be created? In case metadata standards do not exist in your discipline, please outline what type of metadata will be created and how.

	<b>DS1</b> <b>AVIATOR members details</b>	<b>DS2</b> <b>Newsletter subscribers</b>	<b>DS3</b> <b>Website and social networks</b>	<b>DS4</b> <b>Dissemination &amp; Communication Materials</b>	<b>DS5</b> <b>Research data</b>	<b>DS6</b> <b>Computational data</b>	<b>DS7</b> <b>Scientific Publications</b>	<b>DS8</b> <b>Project deliverables</b>	<b>DS9</b> <b>General project documents</b>
<b>Data discoverability</b>	Use a list / register with unique identifiers.	Use a list / register with unique identifiers.	Timestamp of posted content.	Document management with unique identifiers.	Timestamp data and unique identifiers.	Timestamp data and unique identifiers.	Document management with unique identifiers.	Document management with unique identifiers.	Document management with unique identifiers.
<b>Naming conventions</b>	NA	NA	NA	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan
<b>Keywords</b>	NA	NA	Related Hashtags to increase exposure.	Keywords will be used as far as possible (i.e press releases)	Keywords will be used	NA	Keywords will be used, according to the scientific publication.	NA	NA
<b>Versioning</b>	NA	NA	NA	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan	According to deliverable D1.2 Project Management Plan
<b>Metadata</b>	Filename, date of creation, date of last change, name of author	Filename, date of creation, date of last change, name of author	NA	Filename, date of creation, date of last change, name of author, version	Filename, date of creation, date of last change, name of author, version	Filename, date of creation, date of last change, name of author, version	Filename, date of creation, date of last change, name of author, version	Filename, date of creation, date of last change, name of author, version	Filename, date of creation, date of last change, name of author, version

**Table 3.** Making data findable.

## 2.2. Making data openly accessible

Table 4 will answer the following questions for each dataset in order to specify which and how the data is openly accessible:

1. Which data produced and/or used in the project will be made openly available as the default?
2. How will the data be made accessible (e.g. by deposition in a repository)?
3. What methods or software tools are needed to access the data?
4. Is documentation about the software needed to access the data included?
5. Is it possible to include the relevant software (e.g. in open source code)?
6. Where will the data and associated metadata, documentation and code be deposited?  
Preference should be given to certified repositories which support open access where possible.
7. Have you explored appropriate arrangements with the identified repository?
8. If there are restrictions on use, how will access be provided?
9. Is there a need for a data access committee?
10. Are there well described conditions for access (i.e. a machine readable license)?
11. How will the identity of the person accessing the data be ascertained?

	<b>DS1</b> AVIATOR members details	<b>DS2</b> Newsletter subscribers	<b>DS3</b> Website and social networks	<b>DS4</b> Dissemination & Communication Materials	<b>DS5</b> Research data	<b>DS6</b> Computational data	<b>DS7</b> Scientific Publications	<b>DS8</b> Project deliverables	<b>DS9</b> General project documents
<b>Open data</b>	No open data	No open data	Open data as default	Open data as default	WP2 and WP3 engine / APU proprietary data (no open data)  WP4 data is open data.	No open data as default	Open data as default	Only public deliverables will be open.	No open data
<b>Accessibility</b>	Internal via Sharepoint	Internal via newsletter tool	Web server publicly accessible	Green access	Internal via Sharepoint or Partner's hard drives  WP4 data accessible via web portal.	Internal via Sharepoint or Partner's hard drives	Green access	Internal via Sharepoint or for those marked as public via AVIATOR website	Internal via Sharepoint
<b>Methodology</b>	Internet browser	Internet browser	Internet browser	Internet browser. Conferences, ...	Internal file browser. Specific SW to analyse data	Internal file browser. Specific SW to analyse data	Internet browser	Internet browser. Pdf reader, Microsoft Office	Internet browser. Pdf reader, Microsoft Office
<b>Doc. to access</b>	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available
<b>Software</b>	NA	NA	NA	NA	For WP4, internet browser	Not possible	NA	NA	NA
<b>Storage</b>	Internal storage	European web server	European web server	Internal storage	Internal storage and webserver	Internal storage	Self-archiving or making them	Internal storage	Internal storage

							available via the publisher		
<b>Repository arrangements</b>	NA	NA	NA	NA	NA	NA	Not yet identified	NA	NA
<b>Restrictions</b>	NA	NA	NA	NA	TBD	TBD	TBD	NA	NA
<b>Data access committee</b>	Not required	Not required	Not required	Not required	TBD	TBD	TB	Not required	Not required
<b>Conditions for access</b>	NA	NA	NA	NA	TBD	TBD	NA	NA	NA
<b>Identification</b>	NA	NA	NA	NA	TBD	TBD	Web form to request access to the scientific publication	For public deliverables a web form will be used to request name and email	NA

**Table 4.** Making data openly accessible.



## 2.3. Making data interoperable

Table 5 will answer the following questions for each dataset in order to specify which and how the data is interoperable:

1. Are the data produced in the project interoperable, that is allowing data exchange and re-use between researchers, institutions, organisations, countries, etc. (i.e. adhering to standards for formats, as much as possible compliant with available (open) software applications, and in particular facilitating re-combinations with different datasets from different origins)?
2. What data and metadata vocabularies, standards or methodologies will you follow to make your data interoperable?
3. Will you be using standard vocabularies for all data types present in your data set, to allow inter-disciplinary interoperability?
4. In case it is unavoidable that you use uncommon or generate project specific ontologies or vocabularies, will you provide mappings to more commonly used ontologies?

	<b>DS1</b> AVIATOR members details	<b>DS2</b> Newsletter subscribers	<b>DS3</b> Website and social networks	<b>DS4</b> Dissemination & Communication Materials	<b>DS5</b> Research data	<b>DS6</b> Computational data	<b>DS7</b> Scientific Publications	<b>DS8</b> Project deliverables	<b>DS9</b> General project documents
<b>Interoperability</b>	NA	Possibility to export list of subscribers.	Website is easily interoperable with other systems as it uses Wordpress.	NA	WP4 data interoperable via API under development.	TBD	Data in scientific publications can be re-used	Data in public deliverables can be re-used	NA
<b>Standards</b>	CSV files	CSV files	Using Wordpress as CMS.	Scientific vocabulary and style	TBD	TBD	Scientific vocabulary and style	Text files, using templates	Text files, using templates
<b>Inter-disciplinary interoperability</b>	NA	NA	NA	NA	TBD	TBD	NA	NA	NA
<b>Mappings</b>	NA	NA	NA	NA	TBD	TBD	NA	NA	NA

**Table 5.** Making data interoperable.

## 2.4. Increase data re-use (through clarifying licences)

Table 6 will answer the following questions for each dataset in order to specify which and how the data is re-used:

1. How will the data be licensed to permit the widest re-use possible?
2. When will the data be made available for re-use? If an embargo is sought to give time to publish or seek patents, specify why and how long this will apply, bearing in mind that research data should be made available as soon as possible.
3. Are the data produced and/or used in the project useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why.
4. How long is it intended that the data remains re-usable?
5. Are data quality assurance processes described?

	<b>DS1</b> <b>AVIATOR</b> <b>members details</b>	<b>DS2</b> <b>Newsletter</b> <b>subscribers</b>	<b>DS3</b> <b>Website and</b> <b>social networks</b>	<b>DS4</b> <b>Dissemination &amp;</b> <b>Communication</b> <b>Materials</b>	<b>DS5</b> <b>Research data</b>	<b>DS6</b> <b>Computational</b> <b>data</b>	<b>DS7</b> <b>Scientific</b> <b>Publications</b>	<b>DS8</b> <b>Project</b> <b>deliverables</b>	<b>DS9</b> <b>General project</b> <b>documents</b>
<b>Licensing</b>	NA	NA	NA	As per Clauses 8.4 “Dissemination”, 8.5 “Dissemination of another Party’s unpublished Results or Background”, 8.6 “Cooperation obligations”, 8.7 “Use of names, logos or trademarks”, 9 “Access Rights” and 10 “Non-disclosure of information” of the AVIATOR Consortium Agreement.				NA	NA
<b>Availability</b>	NA	NA	NA					NA	NA
<b>Third Parties</b>	NA	NA	NA					NA	NA
<b>Duration of reusability</b>	NA	NA	NA	As per Section 3 “Rights and Obligations related to background and results” of the AVIATOR Grant Agreement.				NA	NA
<b>Quality Assurance</b>	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan	Quality Assurance described in deliverable D1.2 Project Management Plan

**Table 6.** Increase data re-use.

### 3. Allocation of resources

Cost of manpower effort to manage efficiently the data is considered in each related work package by each involved Project Partner.

Cost related to dissemination and communication actions will be covered in Work Package 8 “Communication, dissemination & exploitation”. This is further described in Deliverable 8.2 “Plan for Exploitation and Dissemination of Results”.

Data Management of AVIATOR is led within Work Package 1 “Management and coordination” by INTA.

### 4. Data security

Data security (both secure storage and data recovery) is ensured by following the best practices for each dataset and in line with each Partner internal data security policies.

Dataset	Data security actions
DS1 AVIATOR members details	Information is stored in a secured in the project collaboration platform (Sharepoint) site, with servers in Europe, and follows recommended security measures. The Sharepoint site is only accessible by AVIATOR members using email and password. Sharepoint site is being backed up periodically.
DS2 Newsletter subscribers	Newsletter subscribers details’ (name and email) are stored in the AVIATOR newsletter system (European based company, with servers in Europe) which complies with required security measures and is GDPR compliant. In order to access the list of subscribed users, there is only one admin, managed by the Project Coordinator, with an email and password.
DS3 Website and social networks	Website is stored in an European based company, with servers in Europe which complies with required security measures and is GDPR compliant. There are periodic backups of database and files. Website management is accessible via 2FA, increasing security. Twitter profile, managed by the Project Coordinator, has email and password credentials for a secured access.
DS4 Dissemination & Communication Materials	Digital materials, i.e videos are securely stored in the related Partner, providing backups as required.
DS5 Research data	Research data (raw data coming from measurement campaigns, sensor networks, processed data, analysed data and reports) will stored in dedicated storage systems (hard drives, usb drives and servers) ensuring always security of access and proper backup. The sensor network to be developed will take into account best practices around data security. This will be detailed in deliverable “D4.1 Specification for mechanical and software designs for nodes”.
DS6 Computational data	Computational data will be stored and backed up according to the Partners policies who develop and uses the software in AVIATOR, ensuring there is not unauthorized use of the software and there are a backup plan in place.
DS7 Scientific Publications	As per the Plan for Exploitation and Dissemination of Results, AVIATOR will ensure open access to project publications using the green model (based on the by self-archiving or making them available via the

	publisher). In case of self-archiving, i.e website AVIATOR will ensure there is a proper backup plan in place.
DS8 Project deliverables	Stored in Sharepoint which is protected and accessible only by AVIATOR Partners. Periodic backups in place. "Public" marked deliverables will also be uploaded to the AVIATOR website.
DS9 General project documents	Stored in Sharepoint, which is protected and accessible only by AVIATOR Partners. Periodic backups in place.

**Table 7.** Data security.

## 5. Ethical aspects

There are not ethical issues that can have impact on data sharing. AVIATOR includes a specific work package (WP9 Ethics) which will generate two deliverables:

- D9.1 Ethical Review of research activities undertaken in non-EU countries.
- D9.2 Health and Safety

When dealing with personal data (i.e in datasets DS1 and DS2) informed consent is included in the related questionnaires or forms.

## 6. Other issues

Not applicable.