Funded by the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101136257

AUTOFLEX

[D1.2] Data Management Plan (DMP) v1

Workpackage	WP1	Project Administration & Dissemination
Author(s)	SO	Odd Erik Mørkrid, Håvard Nordahl
Contributor(s)	NTUA	Marios-Anestis Koimtzoglou
Dissemination Level	PU	DMP
Date / Project Month	30.03.2024 M3	Start of the Project: 01.01.2024 Duration: 36 Months

DELIVERABLE INFORMATION

This publication has been provided by members of the AUTOFLEX consortium and is intended as input to the development of autonomous and flexible inland waterway vessels and respective business models. The content of this publication has been reviewed and accepted by the members of the AUTOFLEX participants. However, not necessarily every aspect of it represents the view of each individual member of the AUTOFLEX consortium.

While the information contained in the document is believed to be accurate, AUTOFLEX participants make no warranty of any kind with regard to this material including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. None of the AUTOFLEX participants, their officers, employees, or agents shall be responsible for, liable in negligence, or otherwise howsoever in respect of any inaccuracy or omission herein. Without derogating from the generality of the foregoing neither of AUTOFLEX participants, their officers, employees or agents shall be liable for any direct, indirect, or consequential loss or damage caused by or arising from any information advice or inaccuracy or omission herein.

The material in this publication can be reproduced provided that a proper reference is made to the title of this publication and the AUTOFLEX project.

Mørkrid, Odd Erik; 'AUTOFLEX Deliverable D1.2 – Data Management Plan (DMP) v1'; Revision 1.0; March 2024

Document History		
29.02.2024	Version 0.1	First draft, for consortium review
13.03.2024	Version 0.2	Review by NTUA (Marios-Anestis Koimtzoglou)
26.03.2024	Version 0.3	Updated by SO after NTUA review
27.03.2024	Version 0.4	Some minor changes suggested by NTUA
30.03.2024	Version 1.0	To be submitted to the European Commission

Funded by the European Union

Grant Agreement: 101136257

EXECUTIVE SUMMARY

This report addresses the Data Management in AUTOFLEX and introduces the project's approach to data and the approach which the AUTOFLEX consortium will follow to manage research data "Findable, Accessible, Interoperable and Reusable" (FAIR).

Ethical aspects related to data collection, generation and sharing have been considered. All datasets will be uploaded, stored and handled in accordance with national and European rules on data protection and privacy. Metadata will be added to all datasets, and instructions on how to upload, store, publish and preserve research data is provided in this document.

AUTOFLEX will use Zenodo, a trusted and OpenAire compliant data repository to comply with the FAIR data principles.

Each dataset will be given a persistent identifier (Digital Object Identifier, DOI), supplied with relevant metadata, and linked to the project acronym, full project name and grant agreement number. Publications and underlying research data will be linked, and a Creative Commons license will regulate reuse of the AUTOFLEX research data. Data security arrangements are defined.

The DMP is a living document and will be updated as the project proceeds. The final version of the DMP will be made available at the end of the project. It will include instructions for how to access and reuse open research data from AUTOFLEX.

Funded by the European Union

Grant Agreement: 101136257

TABLE OF CONTENTS

Funded by the European Union
Grant Agreement: 101136257

Funded by the European Union
Grant Agreement: 101136257

TABLE OF FIGURES

Funded by the European Union

Grant Agreement: 101136257

TABLE OF TABLES

Funded by the European Union
Grant Agreement: 101136257

LIST OF ABBREVIATIONS

Abbreviation	Description
CC license	Creative Commons licenses are tools to grant copyright permissions to creative work[1]
CC BY	This CC-license lets others distribute, remix, tweak, and build upon your work, even commercially, if they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.
CC0	CC0 enables scientists, educators, artists and other creators and owners of copyright- or database-protected content to waive those interests in their works and thereby place them as completely as possible in the public domain, so that others may freely build upon, enhance, and reuse the works for any purposes without restriction under copyright or database rights.
CC BY-NC	This CC-license lets others remix, tweak, and build upon your work non-commercially, and although their new work must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.
CC BY-SA	This CC-license lets others remix, tweak, and build upon your work even for commercial purposes, if they credit you and license their new creations under the identical terms. This license is often compared to "copyleft" free and open-source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use.
DMP	Data Management Plan
DoA	Description of Action
DOI	Digital Object Identifier
EC	The European Commission
EGE	The European Group on Ethics
EU	The European Union
FAIR	Findable, Accessible, Interoperable, Reusable
GDPR	General Data Protection Regulation. Regulation (EU) 2016/679.
ICT	Information and Communication Technology
IP	Intellectual Property
IPR	Intellectual Property Rights

[1] Creative Commons homepage: https://creativecommons.org/

Funded by the European Union
Grant Agreement: 101136257

IT	Information Technology
JSON	JavaScript Object Notation. An open-standard file format.
Zenodo	Zenodo is a catch-all research data repository that enables researchers, scientists, EU projects and institutions to share research results, make research results citable, and search and reuse open research results from other projects. Zenodo is harvested by the OpenAIRE portal and hosted by the CERN cloud infrastructure.
UN	The United Nations

Funded by the European Union
Grant Agreement: 101136257

1 INTRODUCTION

1.1 PURPOSE OF THE DOCUMENT

This deliverable relates to task 1.1 in the project and provides a Data Management Plan for the AUTOFLEX project. It is intended as guidance on data management and particularly aimed at the responsible participants for data collection.

1.2 INTENDED READERSHIP

1.2.1. INTERNAL IN THE AUTOFLEX PROJECT

Project participants who are responsible for, or in any way involved with, data collection and data handling can use this document for instructions on how to handle, store and process data.

All project participants can use this document to get an overview of data collected in the project and how this is processed, stored, and made accessible.

1.2.2. EXTERNAL AUDIENCE

The Data Summary (Chapter 2) and FAIR principles (Chapter 3) chapters can be used by all relevant stakeholders who are interested in AUTOFLEX related activities and research topics to get an overview of the data collected in the project, how to access this data, and, if applicable, how to re-use this data in their own activities.

1.3 STRUCTURE OF THIS DOCUMENT

This document is structured as follows:

- Chapter 1 is an introductory chapter describing the main purpose, structure and intended readership of the DMP and an overview of the research data in AUTOFLEX.
- Chapter 2 provides and overview of the research data in AUTOFLEX
- Chapter 3 describes how AUTOFLEX will comply with the FAIR data principles
- Chapter 4 deals with ethical and legal aspects related to data management in AUTOFLEX
- Chapter 5 gives a detailed description of data security arrangements
- Chapter 6 describes the allocation of resources
- Chapter 7 includes the references

The online tool DMPOnline, hosted by Data Curation Centre, has been used to generate content for this document[2]. The tool is based on the Horizon Europe DMP template[3] and guidelines for FAIR data.

[2] https://dmponline.dcc.ac.uk/about_us
[3] https://enspire.science/wp-content/uploads/2021/09/Horizon-Europe-Data-Management-Plan-Template.pdf

Funded by the European Union
Grant Agreement: 101136257

1.4 RELATIONSHIP WITH OTHER DELIVERABLES

The DMP is not a fixed document but evolves during the lifespan of the project and revised versions of it will be created, during the project's duration. Deliverable *D1.2 DMP v1* is the initial version of the AUTOFLEX Data Management Plan. Deliverable *D.1.8 DMP v2* and *D1.11 DMP v3* are updates of the DMP at M18 and M36, where the latter is the final version of this document.

Funded by the European Union
Grant Agreement: 101136257

2 DATA SUMMARY

2.1 PURPOSE OF THE DATA COLLECTION AND GENERATION

In this section a detailed analysis on the data management of the AUTOFLEX project is demonstrated. An assessment is to be done whenever collection or generation of data is considered, on the purpose and whether there is any relation to the AUTOFLEX project or work package objectives. Some guiding questions to be answered in this data assessment process include, but are not limited to:

1. What types and formats of data will the project generate/collect?
2. Will any existing data be re-used? If so, how?
3. What is the origin of the data?
4. What is the expected size of the data?
5. To whom might it be useful (utility data)?

2.2 DATA TYPES, FORMATS AND SIZE

2.2.1. TYPES OF DATA

AUTOFLEX will collect, generate and reuse various types of data, such as:

- Observations and collected data
  - Sensor data
  - Survey/interview/transcript data
  - Literature
- Calculation/numerical data (data from models, simulations, and other calculations)
- Experimental data (results from controlled trials or test data)
- Raw and processed data
- Measuring sequences, code
- Algorithms, scripts

The data will be organised in datasets, according to their type and content.

2.2.2. DATA FORMATS

AUTOFLEX will only use widely accepted formats for data generation, such as:

- Documents/Reports/Publications: .pdf/A, txt, doc/docx
- Spreadsheets: .xls/.xslx
- Databased: .cvs
- Pictures: jpg, png
- Video: avi, flv, mov, mp4, wmv
- …

Funded by the European Union
Grant Agreement: 101136257

2.2.3. DATA STORAGE IN ACTIVE PROJECT – PROJECT PLATFORM

All datasets in AUTOFLEX will be stored in a SINTEF SharePoint project site. This will be the projects online working and collaboration area during the 36 months the project is active.

All partners will be responsible for uploading the datasets they have collected/generated during the project. Each dataset will be catalogued in a SharePoint list/Excel workbook/Database providing an overview of all datasets in the project. The datasets will also be uploaded to a dedicated research data folder in the SharePoint site. All datasets will use standard SharePoint version control and access control is available to enable limited access to certain types of data.

These metadata will be provided for each data set:

- Project ID (Grant No)
- Data Owner
- File name
- Version
- WP number
- File type
- Date/time
- Dissemination level
- Keyword
- Language

2.3 DATA REPOSITORY - ZENODO

AUTOFLEX will use Zenodo, a trusted and OpenAire compliant repository to comply with the FAIR principles. All scientific publications, including public deliverables and public parts of underlying datasets will be uploaded to the AUTOFLEX Community in the repository. In addition, datasets (not directly linked to publications and deliverables) with dissemination level "Public" will be uploaded and made openly accessible via the repository.

2.4 INSTRUCTIONS FOR UPLOADING DATASETS TO SHAREPOINT

Table 2-1, Table 2-2, and Figure 2-1 provide instructions to project participants on how to upload datasets to SharePoint and Zenodo.

Table 2-1: Instructions for uploading datasets to SharePoint

Upload instructions – AUTOFLEX SharePoint

• Please upload all PROJECT data sets to this folder in the PROJECT Sharepoint site:
  ○ Insert link to SharePoint site
• Use this naming convention (for details see 3.1.5):
  ○ AUTOFLEX_DeliverableNumber_Descriptive text_UniqueDataNumber
  ○ AUTOFLEX_PublicationNumber_Descriptive text_UniqueDataNumber

Funded by the European Union
Grant Agreement: 101136257

- Be sure to use the same file name when uploading later versions
- Add mandatory metadata in this list/workbook/database:
    - Insert link to Metadata list/workbook/database

Table 2-2: Instructions for uploading datasets to Data Repository (Zenodo)

Upload instructions – Data Repository

• Research data underlying scientific publications/classified as "Public" should, in addition, be uploaded to Zenodo. To do this you must complete the following steps:
  ○ Create a profile in Zenodo to be able to upload files
  ○ Click on the PROJECT Community link above, or search for "PROJECT Community" under the "Communities" tab at the top of the Zenodo site
  ○ On the Community site, click the green "New upload" button in the top right corner
  ○ Enter requested data and confirm the upload.
  ○ Remember to add the European Commission community in the box labelled "communities". You can use the search function to locate the community and add it. The data will then automatically be uploaded to both communities, so you don't have to do it twice.
• Uploading of underlying datasets should be done as soon as possible and at the latest on article publication or EC approval. Other datasets will be uploaded in the final month of the project at the latest.
• Each partner is responsible for uploading data sets collected/generated by them. If needed, AUTOFLEX data manager will supply assistance.

Funded by the European Union
Grant Agreement: 101136257

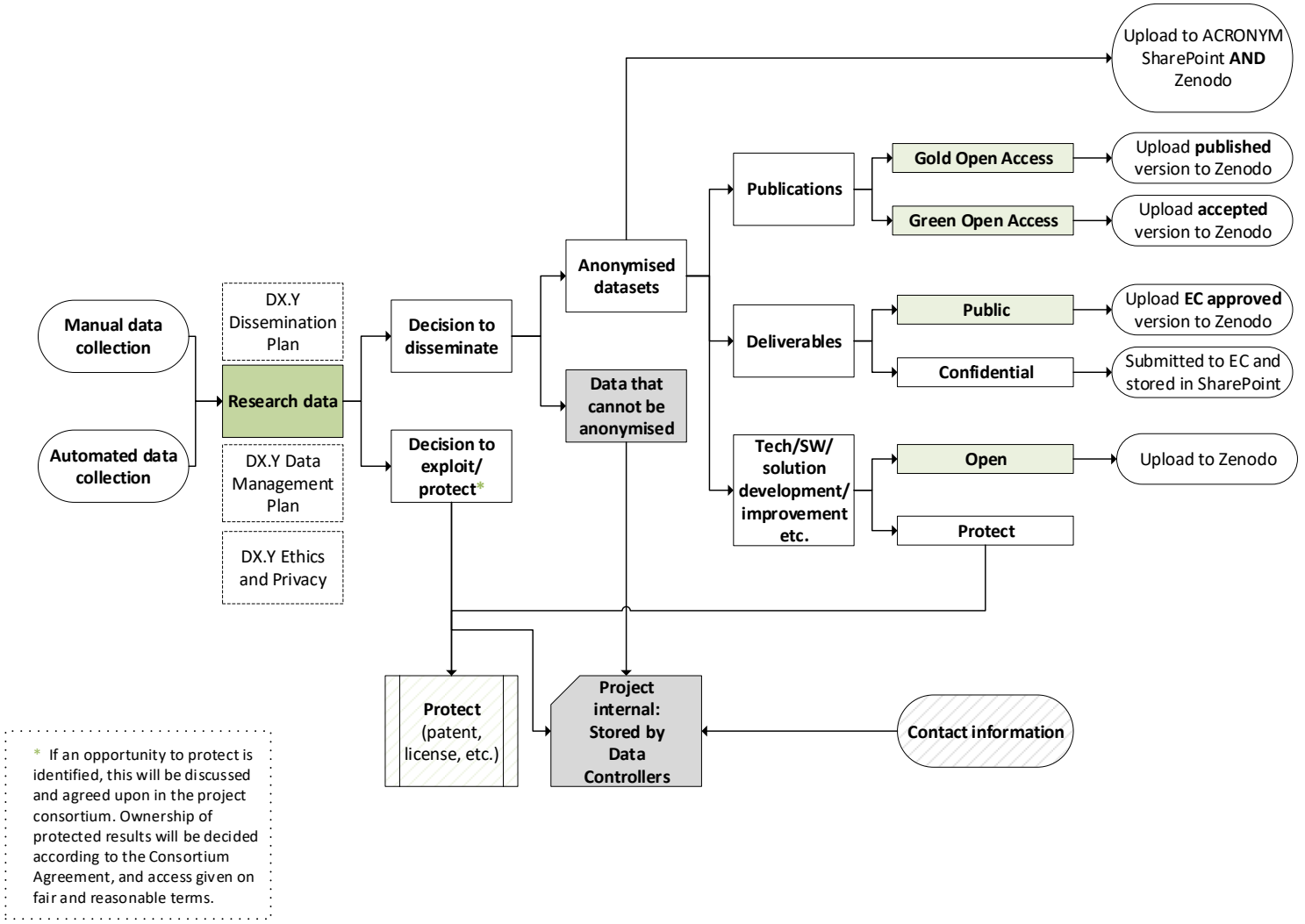

Figure 2-1: Process for uploading datasets

Funded by the European Union
Grant Agreement: 101136257

3 FAIR PRINCIPLES

AUTOFLEX will manage data in accordance with the principles of FAIR data management[4] (Findable, Accessible, Interoperable and Re-usable data) The project aims to maximise access to, and re-use of research data generated by the project.

At the same time, there are numerous datasets, or parts of datasets, generated in this project that cannot be shared:

- in order to protect the privacy of voluntary participants
- to allow for protection of results prior to commercial exploitation
- to protect business sensitive information
- to protect confidential/classified information

Table 3-1 provides a current overview of the expected datasets in the AUTOFLEX project and their accessibility.

3.1 MAKING DATA FINDABLE

3.1.1. AUTOFLEX COMMUNITY IN ZENODO

AUTOFLEX will use the Zenodo[5] repository as the main tool to make our research data findable in accordance with the FAIR principles.

An AUTOFLEX community will be established in the repository, and the public datasets and deliverables, as well as scientific publications, will be uploaded to this community. This will ensure harvesting of project results by OpenAire[6] and provide maximum findability. All uploads will be enriched with standard Zenodo metadata, including Grant Number, Project Name and Acronym. The repository provides version control and assigns DOIs to all uploaded elements.

3.1.2. METADATA IN ZENODO

Metadata associated with each published data set in Zenodo will by default be as follows:

- Digital Object Identifiers
- Version numbers
- Creator (Name and ORCID)
- Keywords
- Abstract/description
- Associated project and community
- Associated publications and reports

[4] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf
[5] https://zenodo.org/
[6] https://www.openaire.eu/

Funded by the European Union
Grant Agreement: 101136257

- Grant information
- Access and licensing info
- Language

In addition, the project name and GA number will be added.

3.1.3. VERSIONING AND DIGITAL OBJECT IDENTIFIERS (DOI)

Zenodo provides DOI versioning of all datasets uploaded to their communities, which allows for edition and update of the uploaded datasets after they have been published. This also allows the cite of specific versions of an upload while providing all of its versions.

3.1.4. APPROACH TO SEARCH KEYWORDS

Each partner who collects and generates public datasets will be responsible for uploading these to the repository and to assign specific search keywords relevant for these datasets. Dataset specific keywords must be descriptive to the content of the dataset. In addition, the project has defined a set of general keywords that apply to all public datasets, scientific publications, and public deliverables. These are as follows:

- Keyword 1
- Keyword 2
- Keyword 3

3.1.5. NAMING CONVENTIONS

Data will be named using the following naming conventions:

- *AUTOFLEX_DeliverableNumber_Descriptive text_UniqueDataNumber*
- *AUTOFLEX_PublicationNumber_Descriptive text_UniqueDataNumber*

Explanation of the naming convention:

- "DeliverableNumber" refers to the deliverable number as described in the DoA
- "PublicationNumber" refers to the number of the publication has in the project internal directory of all publications from the project
- "Descriptive text" refers to a short description of the content of the dataset
- "UniqueDataNumber" is the number automatically generated by the research metadata list in SharePoint

3.2 MAKING DATA OPENLY ACCESSIBLE

Specify access conditions, if any (open, restricted, embargoed), procedures for gaining access, and where the data will be deposited.

The EU's Open Science Policy aims to make research data generated by Horizon Europe projects accessible with as few restrictions as possible, but also accept protection of personal or sensitive data due to privacy concerns and/or commercial or security reasons.

Funded by the European Union
Grant Agreement: 101136257

All public datasets, scientific publications and deliverables will be uploaded to Zenodo and made openly available, free of charge. Publications and underlaying data sets will be linked through use of persistent identifiers (DOI versioning). Data sets with dissemination level "confidential" (non-anonymous datasets) will not be shared due to privacy/security/ethical concerns. Potentially, some datasets might be restricted due to protection for commercial exploitation. If such cases arise during the project, this will be informed in the final version of the DMP.

Metadata including licences for individual data records as well as record collections will be harvestable using the OAI-PHM protocol by the record identifier and the collection name. Metadata is also retrievable through the public REST API. The data will be available through www.zenodo.org, and hence accessible using any web browsing application. No specific software or hardware is needed to access and reuse the data.

Table 3-1 below provides a list of types of datasets expected to be generated in the project and their planned accessibility. This list constitutes the first version of dataset description, and we recognise that it will develop and grow as the project evolves. In addition, some information concerning the datasets currently remain unknown, e.g. size of the datasets. An updated version of the list containing all dataset details will be provided at the end of the project.

Funded by the European Union
Grant Agreement: 101136257

Table 3-1: Expected data in AUTOFLEX

WP	Task	Name of dataset	Description/ Purpose	Format	Responsible	Origin	Class	Comments
2	2.1	Waterways dimension data	Dimension data of the waterways	GIS	DST	Rijkswaterstaat	PU	No comments
2	2.2	Origin-Destination Matrix on NUTS2 and NUTS3 levels	O-D-Matrices truck; OD, Type, Volume on Nuts2 Level OD, Volume on Nuts3 Level O-D- Matrices IWW: OD, Type, Volume on Nuts2 level Volume on Terminal Level O-D Matrices Rail: OD, Volume on Nuts2 Level	Tables	Fraunhofer CML	Centraal Bureau voor de Statistiek NL Statbel, BE Eurostat Eurostat Centraal Bureau voor de Statistiek NL	PU	NUTS3 does not include the commodities, NUTS2 does No rail data from Statbel
	2.2	Matrix	Secondary Eurostat Data (Region of Loading and unloading/ Production Statistics / Trade Statistics / Demographics)	Tables	Fraunhofer CML	Eurostat	PU	Used for imputing commodities onto NUTS3 level

Funded by the European Union
Grant Agreement: 101136257

			Expected to be finalized after Easter					
4	4.1, 4.2, 4.3, 4.4	Calculation/numerical data	Ship design parameters	.pdf/.docx	DST	AUTOFLEX	CO	Data generated within the scope of research done in AUTOFLEX
4	4.1, 4.2, 4.3, 4.4	Calculation/numerical data	Ship design drawings	.pdf/.docx	DST	AUTOFLEX	CO	Data generated within the scope of research done in AUTOFLEX
4	4.1, 4.2, 4.3, 4.4	Pictures and illustrations	Ship illustrations	.jpg	DST	AUTOFLEX	PU	Data generated within the scope of research done in AUTOFLEX
4	4.1	Collected data	Features of small inland vessels in Europe	.pdf/.docx .jpg	DST	External	CO	Data collected from external databases. The data must be anonymized and cannot be shared as the AUTOFLEX consortium does not own the data
4	4.5	Sensor Dataset	Sensor data for building situational awareness systems. Sensors include AIS, GPS, EO cameras, LIDAR, and other metainformation from the	PNG, rosbag, json	MR	Inland waterways in the Netherlands and Belgium.	CO	No comments

Funded by the European Union
Grant Agreement: 101136257

			installed data collection setup.					
3	3.1	Dictionary	Specification of energy request from ZESpack by E-truck: - Vehicle ID - Energy consumption (kWh) - Date and time of connection to ZESpack Date & time of disconnection from ZESpack	Numerical	ZES	E-truck owner/manager	PU	No comments
3	3.1	Dictionary/list	Scheduled ZESpack swap: - ZESpack ID - Date and time of (dis)connection from/to docking station Date and time of ZESpack finished (un)loading on/from vessel	Numerical	ZES	Terminal operator	PU	No comments

Funded by the European Union
Grant Agreement: 101136257

3	3.1	Dictionary/list	Schedule of terminal equipment recharging - Energy consumption (kWh) - Date and time of start equipment charging - Date & time of end of charging	Numerical	ZES	Terminal operator	PU	No comments
3	3.1	Date	Date and time of vessel (using ZESpacks) arrival at and departure from terminal	Numerical	ZES	Terminal operator	PU	No comments
4	4.2	3D Model	Hull Design	3dm, .stp	ISE		CO	Conceptual design and modifications of the vessel's hull
4	4.2	Date	Orca 3 D Hydrostatics	.cvs	ISE		CO	Hydrostatic calculations for stability, buoyancy, etc. Resistance and propulsion analysis. Details on resistance curves, speed predictions

Funded by the European Union
Grant Agreement: 101136257

3.3 MAKING DATA INTEROPERABLE

Zenodo uses JSON schema as the internal representation of metadata and offers export to other formats such as Dublin Core, MARCXML, BibTeX, CSL, DataCite and export to Mendeley. The data record metadata will utilise the vocabularies applied by Zenodo. For certain terms, these refer to open, external vocabularies, e.g.: license (Open Definition), funders (FundRef) and grants (OpenAIRE). Reference to any external metadata is done with a resolvable URL.

3.4 MAKING DATA RE-USABLE

AUTOFLEX will enable third parties to access, mine, exploit, reproduce and disseminate (free of charge for any user) all public data sets, and regulate this by using Creative Commons Licences.

3.4.1. RECOMMENDED CREATIVE COMMONS (CC) LICENSES

AUTOFLEX will use Creative Commons licences (CC), which are tools to grant copyright permissions to creative work. As a default, the CC BY license will be applied for public AUTOFLEX research data. This license lets others remix, tweak, and build upon the performed work even for commercial purposes, as long as the proper credential information is provided. This does not preclude the use of less restrictive licenses as CC 0 or more restrictive licenses as CC BY-ND, which does not allow derivations.

Application of licences will be assessed on a case-by-basis in close collaboration with the Coordinator and partners concerned.

3.4.2. AVAILABILITY AND LONGEVITY OF THE AUTOFLEX RESEARCH DATA SETS

Public (anonymous) data

For data published in scientific journals, the underlying data will be made available no later than by journal publication. The data will be linked to the publication. Data associated with public deliverables will be shared once the deliverable has been approved and accepted by the EC. For other public datasets not directly linked to a scientific publication or deliverable, such datasets will be made available upon assessment by the responsible partner that it is ready for publishing, and in the final month of the project at the latest.

Open data can be reused in accordance with the Creative Commons licences. Data classified as confidential will not be reusable due to privacy/security concerns.

The public data will remain reusable via Zenodo for at least 20 years. This is currently the lifetime stated by the host laboratory CERN. In the scenario of the operational termination of Zenodo all content (including metadata) will be transferred to other suitable repositories, as agreed upon.

Confidential (non-anonymous) data

Funded by the European Union
Grant Agreement: 101136257

All non-anonymous data will be deleted at the end of the project. In case permission is given by the party providing and owning the data, some non-anonymous data will be kept for a maximum of 4 months after the contractual end date of the project. The additional 4 months is to keep the underlying datasets available to allow the completion of any scientific publications being prepared towards the end of the project.

An exemption is pictures and videos, taken with consent from voluntary project/pilot/workshop/exercise participants, that are used for communication purposes. If consent is not withdrawn at an earlier time, such data will be kept for up to 4 years after the end of the project in order to comply with the EC contractual obligation to continue dissemination, communication and exploitation activities after the project ends. If a party withdraws the consent to use this material (pictures, videos), it will be deleted without delay.

Funded by the European Union
Grant Agreement: 101136257

4 ETHICAL AND LEGAL CONSIDERATIONS

4.1 ETHICS

The work in AUTOFLEX will fully comply with the regulations in Regulation (EU) 2016/679, the General Data Protection Regulation (GDPR) [1]. AUTOFLEX also complies to the principles of the European Charter for Researchers, the European Code of Conduct for Research Integrity, including ethical standards and guidelines, regardless of country in which the research is carried out.

Nothing in AUTOFLEX shall be deemed to require a party to breach any mandatory statutory law under which the party is operating. This includes any national or European regulations, rules and norms regarding ethics in conducting research.

SINTEF follows the Vancouver Recommendations for publication of scientific work.

4.1.1. CONTACT INFORMATION

Contact information in form of e-mail addresses is covered by GDPR and the e-mail addresses of project participants are stored in the AUTOFLEX SharePoint Site. Only invited project participants will have access. The e-mail address is a prerequisite to access the project's working area. By accepting the SharePoint invitation, the participants consent to use and store their e-mail address for the purpose of online collaboration in the project. The e-mail addresses will be deleted when access to the AUTOFLEX area is no longer needed (one year after project closure).

SINTEF has signed GDPR data processing agreements with both Microsoft and the IT operations contractor handling the SINTEF SharePoint platform.

Currently, no ethical or legal issues that can have an impact on data generation and sharing have been identified. Ethical and legal aspects related to research data generated by the project will be considered as the work proceeds.

If data collected and generated in AUTOFLEX is classified as personal data, such as names, IP addresses, residence of participants etc, the data will be irreversibly anonymised before being made public. If such data cannot be irreversibly anonymised, it will remain confidential and only managed by designated Data Controllers in the project. If a partner who is not a Data Controller needs access to process personal data (Data Processer), an assessment of this will be done by the Data Controller and if granted a specific Data Processing Agreement will be set up between the Data Controller and the partner requesting access. A template for Data Processing Agreement is provided by EU[7]. Non-anonymous data, although not openly shared in the project or beyond, can still provide input to deliverables and publications. Only

[7] https://gdpr.eu/wp-content/uploads/2019/01/Data-Processing-Agreement-Template.pdf

Funded by the European Union
Grant Agreement: 101136257

anonymised data or analysis of the aggregated data, containing no details that can be linked to individual participants, will be made public.

Pictures and videos for communication purposes

AUTOFLEX will collect pictures and videos for use in communication activities (website, newsletter, social media). Such data will only be collected with prior consent from the people involved and only used for as long as consent is given. Pictures and video can contain personal data if an individual is the focus of the image or video. Examples include:

1) Pictures/video of individuals stored together with personal details (e.g. identity cards)
2) Pictures/video of individuals posted on the project website along with biographical details;
3) Individual images published in a newsletter.

Examples of pictures and video that is unlikely to contain personal data are:

1) Pictures/video where people are incidentally included in an image or are not the focus (e.g. at a big conference/workshop);
2) Images of people who are no longer alive (the GDPR only applies to living people).

When collecting pictures and video AUTOFLEX will follow established guidance and best practice on collecting and processing such data to ensure that we adhere to the legal requirements. Pictures containing personal information will under no circumstances be publicly shared without the subject's explicit consent.

The AUTOFLEX partners are obliged by European and national law (GDPR) to protect personal data.

The coordinator of AUTOFLEX, SINTEF Ocean, follow ethical guidelines in its work, and all work conducted by SINTEF Ocean is subject to the SINTEF Ethics Council and the appointed Ethics Representative. SINTEF Ocean will also ensure that all participants in AUTOFLEX follows the ethical guidelines of SINTEF. Important aspects with respect to this are:

- The ethical guidelines are based on the vision of using science and technology to create a better society and are reviewed continuously to ensure they stay up to date with developments in society and the challenges of today. They generally fall into these categories: research ethics, business ethics, and ethics in interpersonal relationships.
- SINTEF is a member of the UN Global Compact and Transparency International, and SINTEF's ethics are guided by the principles highlighted by these organisations, as well as based on the regulations of the national ethics committees, the principles promoted by the European Group on Ethics in Science and New Technologies (EGE), and on international conventions such as the Vancouver Convention. When dilemmas of research ethics require an assessment beyond the scope of our guidelines, our Ethics Council and Ethics Representative, we refer to statements from the EGE.

Funded by the European Union
Grant Agreement: 101136257

- All SINTEF's employees are expected to act in accordance with the ethical guidelines and principles. As coordinator of the AUTOFLEX project, SINTEF Ocean will ensure that any ethical issues, which may arise, will be handled appropriately and in a transparent and fair manner.

4.2 INTELLECTUAL PROPERTY RIGHTS (IPR)

Intellectual property rights (IPR) are addressed by the deliverable D1.5 Knowledge and IPR plan. This report will amongst other things, define how IPR will be managed, ownership, and how these issues might impact data sharing.

Funded by the European Union
Grant Agreement: 101136257

5 DATA STORAGE, BACKUP AND SECURITY

The security features of the research data infrastructure used to store and handle data in AUTOFLEX are described in this chapter.

5.1 DURING THE PROJECT

SINTEF SharePoint is the online collaboration platform used by AUTOFELX. A dedicated project site has been established on this platform, accessible only by the partner representatives in the consortium. Furthermore, a dedicated folder for research datasets will be set up, allowing for stricter access control than the main project site.

The AUTOFLEX SharePoint site has the following security settings:

- Access level: Restricted to persons (project members only). Further access restrictions on specific folders could if necessary be enabled.
- Encryption with SSL/TLS protects data transfer between partners and the SINTEF SharePoint site.
- Threat management, security monitoring, and file-/data integrity prevents and/or registers possible manipulation of data.

Documents and elements in the SINTEF SharePoint sites are stored in Microsoft's cloud solutions, based in Ireland and the Netherlands. There will be no use of data centres in the US or outside EU/EEA and associated countries5.

Nightly back-ups are handled by SINTEF's IT operations contractor. As a baseline, all project data will be stored for 10 years according to SINTEF's ICT policy, unless otherwise agreed in contracts and data processing agreements.

5.2 REPOSITORY – DATA SECURITY AS SPECIFICED FOR ZENODO

The following list describes the security settings for Zenodo[8]:

- Versions: Data files are versioned. Records are not versioned. The uploaded data is archived as a Submission Information Package. Derivatives of data files are generated, but original content is never modified. Records can be retracted from public view; however, the data files and records are preserved.
- Replicas: All data files are stored in the CERN Data Centres, primarily Geneva, with replicas in Budapest. Data files are kept in multiple replicas in a distributed file system, which is backed up to tape on a nightly basis.

[8] https://about.zenodo.org/infrastructure/

Funded by the European Union
Grant Agreement: 101136257

- Retention period: Items will be retained for the lifetime of the repository. The host laboratory of Zenodo CERN, has defined a lifetime for the repository of the next 20 years minimum.
- Functional preservation: Zenodo makes no promises of usability and understandability of deposited objects over time.
- File preservation: Data files and metadata are backed up nightly and replicated into multiple copies in the online system.
- Fixity and authenticity: All data files are stored along with an MD5 checksum of the file content.
- Files are regularly checked against their checksums to assure that file content remains constant.
- Succession plans: In case of closure of the repository, a guarantee has been made from Zenodo to migrate all content to suitable alternative institutional and/or subject based repositories.

Funded by the European Union
Grant Agreement: 101136257

6 ALLOCATION OF RESOURCES

SINTEF Ocean manages the Project Management Platform (ref PMP). The maintenance of repositories herein is included in the budget of the Project Coordinator and as such secured. Possible fees for open access are made available by the related partners and included in the project's budget.

AUTOFLEX uses standard tools and a free of charge research data repository. The costs of data management activities are limited to project management costs and will be covered by allocated resources in the project budget.

Long-term preservation of the public data is ensured through Zenodo. Other resources needed to support reuse of data after the project ends will be solved on a case-by-case basis.

After project completion, the AUTOFLEX partners will secure allocation of resources required to sustain the data storage on relevant servers.

Possible additional fees for open access will be made available by the partners concerned and they have been included into the project budget as well.

Data manager: SINTEF Ocean will be responsible for the data management and quality assurance.

Funded by the European Union
Grant Agreement: 101136257

7 REFERENCES

[1] 'Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC'. 2016. Accessed: Feb. 29, 2024. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679

Funded by the European Union

Grant Agreement: 101136257