



D1.5 Final Data Management Plan

Project ref. no.	957185
Project title	Möbius: The power of prosumers in publishing
Project duration	1 st March 2021 – 30 th of March 2023 (36 months)
Website	www.mobius-project.eu
Related WP/Task	WP1 / T1.3
Dissemination level	Public
Document due date	(M36)
Actual delivery date	07/03/2024
Deliverable leader	EUT
Document status	Submitted

This document reflects only the author's view and the Commission is not responsible for any use that may be made of the information it contains.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 957185

Revision History

Version	Date	Author	Document history/approvals
0.1	15/01/2024	Julià Vicens (EUT)	Draft version
0.2	23/02/2024	David Laniado (EUT)	Draft version with contributions of EUT, DEN, IMEC, FMWC, FEP and CiTiP, IN2
0.3	03/03/2024	Markus Loeffler (KKW)	Draft version with contributions from KKW
0.4	07/03/2024	Rosa Araujo (EUT) Final revision	EUT

Executive Summary

This document is the final version of the Data Management Plan (DMP) of Möbius project. The DMP includes all the information regarding data management, this is information on datasets collected, produced, and processed within the project for management and research purposes.

The DMP is based on the FAIR (findable, accessible, interoperable, reusable) data principles and the GDPR (General Data Protection Regulation (EU) 2016/679). The DMP ensures that all partners work in a common framework, encouraging the use of public repositories for sharing research data following open data practices, and ensuring security and privacy for personal data.

The DMP is a living document that has evolved during the lifespan of the project; the first version was delivered at month 6 (August 2021) and this is the final version of the document after the project completion. It also accounts for all procedures and documents for ethical involvement of users in research.

Table of Contents

REVISION HISTORY	2
EXECUTIVE SUMMARY	3
TABLE OF CONTENTS	4
TERMINOLOGY AND ACRONYMS	5
1. INTRODUCTION	6
2. DATA SUMMARY	7
3. FAIR DATA	15
3.1 MAKING DATA FINDABLE	15
MAKING DATA OPENLY ACCESSIBLE	16
MAKING DATA INTEROPERABLE	16
3.2 INCREASE DATA RE-USE	17
4. ALLOCATION OF RESOURCES	18
5. DATA SECURITY	19
6. ETHICAL ASPECTS	20
6.1 PURPOSE OF ETHICAL REVIEW	20
7. EVALUATION OF THE ETHICAL ASPECTS	21
7.1 WP 2: MÖBIUS FRAMEWORK AND DESIGN PRINCIPLES	21
7.2 WP 3: PROSUMER INTELLIGENCE AND BUSINESS MODELS	23
7.3 WP 4: 1. MÖBIUS CREATOR AND PLAYER	24
7.4 WP 6: COMMUNICATION	27
8. CONCLUSION	29
9. REFERENCES	30

Terminology and Acronyms

DAW	Digital Audio Workstation
DMP	Data Management Plan
EC	European Commission
EU	European Union
F2F	Face to face
FP	Framework Programme
GDPR	General Data Protection Regulation
PMB	Project Management Board
PMP	Project Management Plan
STAB	Scientific and Technical Advisory Board
WP	Work Package

Introduction

This final version of the Data Management Plan (DMP) includes all the information regarding data management, mainly, information on datasets collected, produced, and processed within the project for management and research purposes. The DMP is based on the FAIR (findable, accessible, interoperable, reusable) data principles and the GDPR (General Data Protection

1. Regulation (EU) 2016/679).

It covers:

- The handling of research data during and after the project
- What data is collected, processed, or generated
- What methodology is applied
- Whether data is to be shared or made open access and how
- How data is curated and preserved

Since the starting month of the project, the MÖBIUS project coordinator has provided all the Consortium partners with a questionnaire that includes the issues to be addressed in the MÖBIUS DMP, along with the instructions to fill them in. The main sections of the questionnaire were:

- Data Summary
- FAIR data
 - o Making data findable, including provisions for metadata
 - o Making data openly accessible
 - o Making data interoperable
 - o Increase of data re-use
- Allocation of resources
- Data security
- Ethical aspects

This has been a living document structured following the European Commission (EU) guideline of "Horizon 2020 FAIR Data Management Plan (DMP) template". Section 2 provides dataset information such as data format, size, types of data collected, produced, and processed, Section 3 addresses the FAIR data principles, Section 4 is focused on the allocation of resources (cost for making data open and long-term accessible), Section 5 and 6 describe, respectively, the security and ethical aspects of data management within the project, section 7 contents the final evaluation of the ethical considerations. Finally, Section 8 summarizes the conclusions of this deliverable.

Data summary

MöBIUS DMP is based on the Template for the ERC Open Research Data Management Plan, and as a summary, the management of research data in the project is based on the following rules:

2.
 - Provide a maximum level of security for sensitive data and personal data, including the exchange of personal and/or sensitive data between selected partners.
 - Use well-known, established repositories for publishing and archiving non-sensitive research data.
 - Encourage data providers to make non-sensitive data available using Creative Commons 3licences, e.g., CC-BY
 - Raise awareness among researchers, companies, and public stakeholders for the importance of making non-sensitive research data available to the public.

Möbius is a project in which the datasets collected, produced, and processed have very different natures and formats. We have worked with heterogeneous datasets with types of data that range from text to video, from diverse sources like digital platforms or surveys.

Data has been crucial in this project to achieve different objectives. In the following Table 1, the partners provide an overview of the data that they have collected, produced, or processed in some point of the project.

Data Description	Data Format	Size	WP	Partner
Project Management Data: contact information, contractual documents, reporting, etc.	Textual (.docx, .pdf) Tabular (.csv, .xlsx)	Small (<1GB)	WP1	EUT
Fandom online platforms: user and content data.	Tabular (.csv) Textual (.txt, .json)	Very large	WP3	EUT
Experimental audio book productions: voice recordings, effects tracks and soundtracks will be produced.	Audio (.mp3, .aif, .wav, .flac) eBook (.epub)	Large	WP4	EUT
Initial data from social media (twitter, open facebook groups)	Tabular (.csv) Textual (.txt, .json)	Medium	WP3	IN2
Interviews to consortium partners and European publishing agencies	Textual (.txt, .docx, .pdf) Audio (.mp3, .aif, .wav, .flac)	Small	WP2	IMEC

Data Description	Data Format	Size	WP	Partner
Usage and application data (logs) collected from the Möbius Book Creator Toolkit and Möbius Player, and from the PIT	Tabular (.csv)Textual (.txt, .json)	Medium	WP3, WP4, WP5kkw	IN2
User preferences and login data	Tabular (.csv)Textual (.txt, .json)	Medium	WP3, WP4, WP5	IN2
Experimental Möbius Book productions: text, audio, images and video recordings, annotations produced to enhance traditional eBooks	Text (.txt), Audio (Audio (.mp3, .wav) Image (.jpeg), video (.mp4), eBook (ePub)	Large	WP4, WP5	IN2
Development of prosumer orientated business models: interviews, focus groups or experiments.	Textual (.txt, .docx, .pdf) Tabular (.csv, .xlsx) Audio (.mp3, .aif, .wav, .flac) Video (.mp4)	Small / Medium	WP3	IMEC
Pilot testing: living labs experiments	Textual (.txt, .docx, .pdf) Tabular (.csv, .xlsx) Audio (.mp3, .aif, .wav, .flac) Video (.mp4)	Small/Medium	WP4	IMEC / ENOLL
Pilot issues/ tickets/ feedback received from users	Textual (.txt, .docx, .pdf, .json)	Small	WP5	IN2
Books in-print databases: “Verzeichnis lieferbarer Bücher (VLB)”	Textual (.xml)	Medium	WP2	MVB
Book market insights in Germany and e-book metadata	Textual (.txt, .docx, .pdf) Tabular (.csv, .xlsx)	Small	WP3	MVB
Surveys to stakeholders about the Möbius project impacts	Textual (.docx, .pdf) Tabular (.csv, .xlsx)	Small	WP2	DEN
Collection of data from newsletters, interviews, contact information, social media, blogs.	Textual (.txt, .docx, .pdf) Tabular (.csv, .xlsx) Video (.mp4, .ogv)	Small	WP6	MWC
Publishers’ contact information	Textual (.txt, .docx, .pdf, .rtf, .ppt) Tabular (.csv, .xlsx)	Small	WP2	FEP
Fantasy open call data: participants information, short story texts	Textual (.txt, .docx, .pdf, .rtf, .ppt)	Small	WP4	BOOKABOOK
Events data: contact details, events video, etc.	Textual (.txt, .docx, .pdf, .rtf, .ppt)	Small	WP5	FEP

Data Description	Data Format	Size	WP	Partner
	Tabular (.csv, .xlsx) Audio (.mp3, .aif, .wav, .flac) Video (.mp4, .ogv)			
Surveys to visitors and users in Möbius art installation	Textual (.docx, .pdf) Tabular (.csv, .xlsx)	Small	WP5	KKW
Multimedia immersive audiovisual shows produced for immersive spaces to be run on dedicated systems	Image files	Very large	WP5	KKW
Legislation at the European level: directives, recommendations, or communications EU. Legal data of national laws.	Textual (.txt, .docx, .pdf)		WP3	CiTiP

Table 1. Details of data types, size and work packages, and consortium members that manage the data.

In **WP1**, the project coordinators (EUT) collected, generated, and stored the following type of data:

- Contact information from partners, and other stakeholders (e.g., EAB) that were necessary for the maintenance of the governance structures. Information was organized and recorded in excel files.
- Contractual documents, such as the Consortium Agreement, Grant Agreement, budget information, etc. Its format is Word documents, PDFs, and/or excel books.
- Reporting documents, in particular deliverables, periodic reports, minutes, etc. mainly in Word Documents, PDFs, excel books formats.

These data were generated and stored in the projects MS TEAM repository in Eurecat's servers. None of these data has been uploaded in cloud-services or storage services not owned by Eurecat, therefore security guarantees are those made possible by Eurecat's IT infrastructure. Access to these data has been granted to all project partners through access to the repository since timely communication and collaborative implementation was required for the effective execution of the project.

IMEC delivered a living document (D1.4) concerning the ethical guidelines and procedures that had to be followed by all consortium partners during the research activities. Information on GDPR, informed consents, how to handle user's data and other ethical procedures was made available in the document. The living document and templates are available on SharePoint and, consequently, the Möbius MS Teams.

DEN as the leader of **WP2** has carried out activities in collaboration mainly with IMEC, in addition to other partners when necessary. Overall, DEN followed the ethical requirements developed by IMEC, and presented in D1.3 regarding the data collection that took place for Pilot Phase 1 and 2 – as part of WP2.

Pilot Phase 1- Online sessions to cocreate the first prototypes for the Mobius PIT, Creator and Player: The sessions were recorded and automatically transcribed. After recording and auto-transcription, the participants' names were pseudonymized, following the GDPR requirements. IMEC oversaw the preparation of the co-creation sessions protocol and guideline documents, which were distributed to the other partners hosting the sessions. For the analysis all transcripts, recordings, drop-off surveys and informed consents were sent to IMEC. Afterwards the other partners deleted their copies.

IMEC interviewed several consortium partners and European publishing agencies. Each interview has been recorded for further analyses combined with notes taken during the interview. None of these recordings or notes has been made available for external organizations. When the MÖBIUS final EC review report is received, all recordings and notes will be deleted. The recordings are currently stored online in MS Teams.

Pilot Phase 2- (Online) individual think aloud sessions to publishers presenting the PIT – organised by IMEC: For the Creator, a URL link was sent to interested individuals to test the product and to provide feedback via a survey. Testing and recruitment were executed by MVB and BB, with support from IMEC who provided the protocols and survey in English. The Player was tested F2F in events and we used a survey to gather feedback. Organising partners were IMEC and ENOLL. Data gathering was conducted by IMEC.

Pilot Phase 3: Impact assessment surveys for Player, Creator, PIT, and the Immersive Experiences (Book Box and VR headsets) were designed using Google forms and were filled in by the public in F2F events such as fairs and during online workshops. The surveys were anonymous and did not collect any personal data (exception is with the survey for the immersive experiences – we asked for age group, gender, and highest educational qualification as it was considered necessary for the assessment of the tools). The general user evaluation survey with more open-ended questions, drawn up by IMEC, was also used at events. Here, questions were asked about age group, gender, job, and email address; this data could be given by the participants completely optional. The surveys in which this personal data was not provided were also included in the analysis.

In line with D1.2 (Protection of personal data) and D1.3 (Ethical report) the survey included a brief description of the project, the goal of the research activity, and a privacy statement, including the researcher(s)' contact information. Impact assessment forms were used by DEN, ENOLL and Laurea. Data was collected directly by DEN. Access was also given to these partners for control issues, as well as to IMEC. All data collected by DEN during PP3 is anonymous. Data is stored on the Möbius SharePoint.

Data from the general user evaluation survey was collected directly by IMEC. For this survey, access was also given to DEN and ENOLL. The collected data was anonymous and stored at the Möbius SharePoint as well.

KPT translated the survey forms in Polish and therefore collected data directly. KPT is the owner of the data; they provided DEN & IMEC with a summary. ENOLL translated the surveys for the Player, the Creator and the PIT in Italian for limited use and shared the data with IMEC & DEN.

For the assessment of the immersive experiences – immersive experience and book box – at the first Leipzig event we followed a protocol that was structured and shared with the partners prior to the event in order to streamline the process of data collection. The aim was to collect data for the two outputs adopting two different approaches. The reason for this was to collect the most appropriate data and achieve the best results and outcomes on the basis of the two different settings of the experiences. For this reason and due to the more static nature of the immersive experience, we decided that it was more appropriate to investigate it through participatory observation, unlike the Möbius box, which we investigated through individual interviews to the participants, as people were free to enter and leave the box at their convenience.

In order to be ethically compliant additional material was prepared: i) informed consents that had to be signed by the people voluntarily participating in the interviews and ii) a disclaimer that had to be visible in the venue in order to alert people about the presence of researchers carrying out participatory observation. Interviews were recorded by IMEC and shared with DEN. Observations were also collected by IMEC and shared with DEN. Interviews were anonymous. Data collected was stored on the Möbius SharePoint.

For the second assessment of the experiences in Leipzig, KKW conducted the assessment and used their own forms; therefore, KKW is the owner of the data. DEN was provided with a summary of the results and does not have access to the data.

For the first **WP2** deliverable, IMEC interviewed several consortium partners and European publishing agencies. Each interview was recorded for further analyses combined with notes taken during the interview. None of these recordings or notes are to be available for external organizations. When the final EC review report is received, all recordings and notes will be deleted. The recordings are stored online in MS Teams.

Most of FEP's data came from its know-how, from desk-research carried out for the project, and from FEP's connections in the institutional, publishing, and creative sectors. Pre-existing data (e.g., coming from FEP's own research and available in its publications) was adapted for Möbius, whereas new data has been generated according to the project's needs and methodologies. This included substantial efforts towards reaching relevant stakeholders and connecting them with the project's consortium. Overall, this effort didn't require deviations from the project's data plan designed in the earlier phases of the project as well as from FEP's standard practices regarding data management.

FEP has shared with the relevant partners its knowledge about current industry practices and publishers' expectations regarding user-driven methods. This data came from FEP's own know-how and research for the project. This data had been collected according to FEP own's data management plan (GDPR compliant) or constituted otherwise already publicly available data. When necessary relevant stakeholders have been informed by FEP of the possibility of being involved in the project and have therefore either agreed or rejected such opportunity.

IMEC, **WP3's** leader for the research and development of prosumer orientated business models carried out interviews, focus groups and experiments. IMEC handled the data following the D1.4 guidelines.

As part of the work developed in WP3, EUT collected data from third-party online platforms by means of API and dumps with the objective to analyse the interactions of users with content and generate metrics and a toolkit that provides a set of indicators. A more detailed description of the data collection and processing process is provided in deliverable D3.1 - Knowledge extraction models.

EUT collected text and metadata about the content and interactions generated by the users in the project's selected fan fiction communities, from the AO3 platform through the platform's API, respecting the rate limits and the limitations imposed by its terms of service¹. Raw data was stored in dedicated servers with limited access for the members of EUT team, and only made accessible to the IN2 team for the creation of the Prosumer Intelligence Toolkit. Further, we leveraged data dumps containing the edit histories of the pages in the project's selected fanfiction communities from the Fandom.com platform, that were openly available on the platform's website. For the communities that had no recent dumps available, we asked the communities and upon our request they kindly published the dumps on the platform, making them available for anyone. We had also planned to collect data from the Fanfiction.net platform, but the platform's terms of service do not explicitly allow scraping of the data²; we repeatedly asked their explicit consent for scraping data from the platform for the purpose of the project, via email and social media channels, but we did not receive any response, so we had to discard this data source. In exchange, we manage to access data from the commercial platform Wattpad, collected and shared with us by researchers from Milan Bicocca University with the consent of the company. In this way we ensured a more diverse combination of data sources, by including a commercial platform.

The outcomes published in open documents and publications only include aggregated results. The interface of the Prosumer Intelligence Toolkit exposes data that are publicly available on the AO3 platform, and includes only anonymised data where usernames have been replaced by random alphanumeric strings. Moreover, IN2 also ensured that the AO3 data that is accessible through the PIT does not contain any personal information, anonymising usernames that were part of the original dataset.

MVB has provided upon request with industry insights. Each year this company publishes relevant data regarding the book industry in Germany and therefore, MVB has provided relevant market insights like turnover, bestsellers, development of customer behaviour, book genres, e-book data etc.

FEP has provided the project's consortium with industry insights on the publishing value chain finalised to the production of the PIT. FEP has also produced ad hoc documents useful to reach out to stakeholders relevant for the WP (e.g., presentations used during FEP's regular meetings). As the data collection associated with pilot testing of the PIT was managed by other partners, FEP only provided contact information such as names and emails of relevant stakeholders. This data had been collected according to FEP own's data management plan (GDPR compliant) or constituted publicly available information. This data has been shared with

¹ <https://archiveofourown.org/tos>

² <https://www.fanfiction.net/tos/>

the project's consortium within the limits of its specific tasks and activities. When necessary, relevant stakeholders have been informed by FEP of the possibility of being involved in the project and have therefore either agreed or refused being involved.

CiTIP, as the leader of T3.4, has generated and collected legal data to identify and assess questions of IP liability, IP ownership, and IP exploitation in relation to the possible output of prosumer business models in the book publishing industry as analysed in T3.3. In doing this, CiTiP's focus has mostly lied on copyright law, given its (direct) relevance to the book publishing industry.

As part of the experimental book productions, creators can upload, text, audio, images, and videos to add to manuscripts. These data are stored in a content repository managed by IN2. Following the legal guidelines of CiTiP's a system is set up in place to ensure legal compliance with current regulations. The Player allows for the public showcase of the Möbius Books which contain such content. Authors of Möbius Books must decide explicitly if a creation should be publicly published on the Player or not. The content is moderated by IN2, and other users can contact the operator to report any issue (e.g. copyright infringement claims). The Möbius Player and Creator allow users to register, create profiles and express preferences. Moreover, IN2 collects a minimum set of anonymised and aggregated usage data (e.g. # of visits, device used, content accessed) as well as application log data (e.g. resource usage). This data is stored and managed by IN2.

IMEC, DEN and ENOLL played a supporting role during the pilot testing, where different sorts of practical data were collected during the living lab experiments. Information was gathered in various ways: surveys, interviews, focus groups, etc. During and after the research activities, all data has been anonymized and stored on MS Teams properly and has not been shared with third parties. Data is accessible for partners ENoLL and the involved LL-partners, DEN and IMEC. Survey data gathered via the in-app tool (Hotjar) for the Möbius products is anonymous and is accessible to ENoLL, IN2 and IMEC.

BOOKABOOK took part in the preparation of the Fantasy open call. Thus, it collected data of candidates including names, emails, personal details. The data were collected with explicit reference to the privacy policy, for the sole purpose of the competition in WP4 (Open call for manuscripts).

In the piloting phases of the project FEP connected the consortium with professional users thus providing their names and contact details with their explicit consent to do so.

In **WP5**, Showcasing of Möbius at international events implies that KKW, ENOLL, DEN, IMEC, and FEP collected data from users. This included contact details for follow-up research or the newsletter, and/or audio/video recordings of the events as well as feedback surveys.

FMWC, as leaders of Impact Maximisation in WP6, FMWC has collected data from the following sources: newsletters, video – interviews, website contact forms, events – Networking (online and in-person), social media (Twitter, LinkedIn, Instagram) and blogs. FMWC collected names and e-mails from interested third parties in different formats (.csv, .txt, .xlsx, .pdf, .doc). The data is stored on FMWC servers with access to members of the team only. This

information will not be shared with any other partner or third party. The collection of personal data has been gathered according to FMWC privacy policy (<https://mobileworldcapital.com/privacy-policy/>).

As part of the activities of **WP6** and for the purposes of D6.6 on cross-sectoral scalability, DEN collected data through a survey on Google Forms, sent to all the partners, including KPT and Laurea. Surveys are anonymous. Only DEN researchers had access to data collected. In addition, we conducted interviews with FEP, MVB, BB and FMWC. During the interviews DEN researchers took notes on the important aspects. Data collected are stored on the Möbius SharePoint.

As part of the open tests and validation activities we collected issues identified by users which have been reported to the development team via email. The issues were stored in a shared xls file created by IMEC and those relevant to the software developed by IN2 were later transferred also to an own GitLab instance hosted by IN2. This data was shared as needed within the consortium but was not made public.

After collecting information about the outputs of the project, MVB informed its customers about the progress of Möbius via newsletter and through the digital version of the specialized magazine “Börsenblatt”, where also the links to the applications were added in order to engage the readers to become Möbius users and testers. MVB continuously collected information about the stakeholders of the project and tried different ways to reach them and engage them in an active manner.

In WP6 FEP supported the dissemination of Möbius activities and supported the communication between Möbius and other relevant projects. This effort took the form of articles, social media posts, newsletters, and similar materials. These materials have been shared with the project's consortium and have been handled by the responsible partners.

Data associated with stakeholders involved in Möbius via this WP has been collected according to FEP own's data management plan (GDPR compliant) constituted publicly available information. This data has been shared with the project's consortium within the limits of its specific tasks and activities. When necessary, relevant stakeholders have been informed of the possibility of being involved in the project and have therefore either agreed or refused being involved.

FAIR Data

Möbius generated data of different nature (project outcomes, deliverables, research data, etc.) during its implementation, with potential for re-use and verification. Then, here we explain how Möbius follows the FAIR Data management guidelines for making findable, accessible, interoperable, and reusable the data collected, produced, and processed in the project.

3.

3.1 Making Data Findable

Raw data collected in **WP2**, **WP3** and **WP5** from interviews, focus groups, brainstorming sessions, surveys or living lab experiments was properly stored on MS Teams - only available for IMEC researchers. Anonymized data (such as transcripts) was available for key partners involved in data gathering (DEN, ENoLL, IMEC). Analysis of the data in light of the central research questions of Möbius (deliverables) have been considered information relevant to all consortium partners and is available on the Möbius SharePoint and MS Teams; this also includes presentation slides, reports, and deliverables.

WP4: The experimental book productions were made accessible over appropriate channels, such as the Möbius web and social media presence. The naming contains author name and book title, to facilitate the results to be found by search engines.

WP6: In terms of communications, data collected from newsletter has been stored in the platform used for distribution, MailChimp. Data from interviews, website contact form, events, social media, and blog information has been stored at FMWC servers. The collection of personal data is gathered according to FMWC privacy policy (<https://mobileworldcapital.com/privacy-policy/>) and follows guidelines agreed with the consortium.

All the scientific publications in journals or conferences are identified with a DOI and the data used for generating this research is published in open data repositories whenever possible to accomplish with security and privacy recommendations.

Data generated for the project's activities, or adapted for it, had been managed thanks to project repositories and channels such as SharePoint, Microsoft Outlook, and Microsoft Teams. The organisation of these tools made the data internally findable (e.g., by WP, by task).

Pre-existing FEP data was findable in the form of reports and publications already available at Federation of European Publishers (fep-fee.eu). Documents on the website aren't identified by DOIs. Pre-existing contacts belonging to FEP were already stored within FEP servers using FEP's own data management plans. These contacts are not meant to be findable (except for public contact information of consenting third parties).

The KKW website permits to find the producer of the two immersive shows. They can be approached easily. The shows can be made accessible on request.

Making data openly accessible

When possible, **WP2**, **WP3** and **WP5** data has been made publicly available. This means that open datasets and other information are made public to a certain extent - these data are anonymized, so participants identity is protected. Reports, deliverables, and other information for public distribution is available on **Zenodo** or other Möbius communication channels. Raw data (recordings, notes, transcripts, user data, etc.) have not been made available for third parties. Results have been made public as part of reports, analysis and possibly scientific publications, with accompanying data sets published only after thorough anonymizations and security screening.

Data collected and generated from online platforms in WP3 by EUT was not made publicly available for aligning with the project' ethical guidelines on user privacy and with the platforms' "Terms and Conditions".

In **WP4**, the sources (i.e., individual voice recordings) and DAW sessions were not published as they aren't of any scientific interest. The resulting experimental productions have been released to a general or limited audience over Möbius' respective channels, such as the web page or social media channels.

In **WP6**, MVB gathered and analyzed information on the project's outcomes and the results were offered to different stakeholders via newsletter, meetings, and especially during the Frankfurt Book Fairs 2022 and 2023, where MVB organized a booth and was able to display all project's results, reaching a wide range of stakeholders and possible future customers and users.

The data gathered by FMWC from the activities of Impact Maximization (WP6) were not shared with any other third parties outside FMWC to comply with current regulations. The collection of personal data was gathered according to FMWC's privacy policy (<https://mobileworldcapital.com/privacy-policy/>).

Similarly, raw data gathered from impact assessment surveys by DEN, IMEC, MVB, and FEP have not been made publicly available (e.g., recordings, transcripts, etc.). Results have been made public as part of reports, analysis, and possibly scientific publications, with accompanying data sets published only after thorough anonymizations and securing.

The audiovisual productions can be made accessible on request. In this case the hand over will be contracted to make sure that the intellectual property right agreements are complied. The contract will regulate the conditions of presenting the shows at other locations and with which technology. KKW is the contract partner.

Making data interoperable

During **WP2**, **WP3**, **WP5** and **WP6** different data types and formats were gathered. Personal data was never shared with third parties and has been anonymized when used for publications. The most common data formats have been: .docx, .pdf, .mp4, .mp3, .jpg, .csv, .xlsx; collected through interviews, focus groups, surveys, living lab experiments, etc. All data have been stored properly on SharePoint and MS Teams and made accessible for relevant consortium

partners. Anonymized data that was prepared for analysis was stored in a separate MS Teams folder with access for consortium partners DEN, ENoLL and IMEC. Raw data was stored on MS Team with access to IMEC only.

The multimedia immersive shows can be made available in an interoperable way, but this requires technical adaptations to the local venues (e.g., mapping, rescaling). This will be done by KKW on request.

3.2 Increase data re-use

Public reports, deliverables, non-sensitive- and anonymized data are available for the public and third parties. During the research activities, IMEC applies an embargo until the results are officially published. Möbius results collected by IMEC are freely available for third parties.

The metadata and market research data provided by MVB was only shared within the consortium and was never foreseen to be made public. The data was made available for project partners to be of help by completing the tasks.

If the multimedia immersive shows are presented in other locations, KKW will track this and make this known on its website and by inform the partners.

Data Description	Format	WP	Partner
Interviews, focus groups, brainstorm sessions, surveys or living lab experiments	YYYYMMDD_Powerpoint_WP2.FileExtension e.g., 210629_Roundtablerecap_WP2.PPTX	WP2WP3 WP5	IMEC
Publishers' data	Author_WP_name_DDMMYY.FileExtension E.g., FEP_WP3_publishers_300621.xls	WP2-3	FEP

Table 2. Filename format convention

Allocation of resources

Costs are mostly represented by two main contributions:

- Cost to manage and make data accessible for a FAIR approach and
- Cost for hosting data in servers that hosts data.

4.

Each partner in the Consortium is responsible for the costs incurred in making data FAIR and for open access.

Making data FAIR has incurred no cost to the project, because datasets have been uploaded on Zenodo for free, which is a general purpose open-access repository under the European OpenAIRE program. In addition, by using Zenodo as the repository for project results, we ensure their security and their long-term preservation.

For what regards open access to publications, each institution has supported the eventual costs required to make the articles appear as gold open access. For articles appearing as green open access, each partner has used the services offered by each institution, typically offered with no charges.

EUT, as project coordinator, was responsible for ensuring the implementation of the DMP. As such, staff time has been allocated in the proposed budget to cover the costs of preparing data and documentation for archiving. All research data collected as part of this project is owned by the respective partner who generated the dataset. The Coordinator takes responsibility for the collection, management, and sharing of the research data as defined and outlined within this DMP.

Data security

5. Project management and coordination data is allocated on Möbius' MS Teams and SharePoint. Data processed in **WP3** by EUT has been stored in dedicated Datura servers during the project. We perform backup copies periodically. Furthermore, interim, and processed data is stored in private GitLab repositories. Only non-sensitive data is archived or published. The audio material generated in **WP4** is meant for publishing and thus, can be considered non-sensitive.

For user research conducted within **WP2**, **WP3** and **WP5**, IMEC personnel working on Möbius have access to the data, and under no circumstances data is to be shared with third parties. Not only gathered data, but also informed consents, contact information and other sensitive data are stored safely.

IN2 uses widely accepted best practices for securing the data collected, especially the user login and profile data which might contain personal identifiable information. This data is not shared to any third party and only internal processing is done on it. IN2 follows the applicable data protection regulations.

Regarding **WP6**, FMWC undertakes to use and process users' personal data while respecting their confidentiality and to avail of them in accordance with the purpose for which they were initially collected. FMWC also fulfil their commitment to storing them and therefore take all the necessary measures to prevent any loss, unauthorized processing or access or alteration thereto, as established in the applicable data protection regulations.

CiTIP relies on security measures implemented by KU Leuven. The data has been stored on the secured KU Leuven J drive and the SharePoint. No personal data has been processed as research data.

FEP data has been handled with the utmost care and stored safely. The privacy of all people involved has been guaranteed (no sensible data has been collected) and their personal data has not been shared with third parties. Data collected in the duration of the project has been used exclusively within the limits set by the consortium and in agreement with WPs and tasks leaders.

In general, all the gathered data in the project are handled discreetly and stored safely; hereby each partner guarantees the privacy and safety of their participants' data. Personal data are processed under the strictest confidentiality, with the application of the respective technical and organizational security measures in accordance with current legislation.

Ethical aspects

All the data collected and processed by the partners followed the recommendation of our Ethical advisor and the guidelines from deliverable D1.4 “Ethical aspects of human participation in research”.

6. The ethical guidelines and procedures developed by IMEC were followed during research activities to ensure that data subjects and data owners remain in control of their personal data and subsequent use, and that data is processed within the Möbius project in compliance of GDPR - General Data Protection Regulation (EU, 2016/679).

No major issues were encountered regarding ethical aspects during the project. The project's ethical and legal advisors were consulted for issues such as data anonymization, treatment of personal data or compliance with user privacy, ensuring the maximum rigor in the respect of the ethical guidelines of the project across all the work packages and tasks.

6.1 Purpose of ethical review

MÖBIUS is a data-intensive project. It leverages on user's data for both developing its results, and for maximizing their impact through dissemination and communication actions. In addition, the involvement of users is the cornerstone of the living lab approach. Considering the amount of personal data within Möbius, it is important to ensure that the ethical principles are complied with during collecting and processing this data.

This report is the final ethical review of the research activities of the Möbius project. It was mentioned in the Ethics Summary Report that *“There is a potential risk for profiling or data processing that could lead to the identification of the users. The strategy for data protection and ensuring the privacy of users must be defined.”* After reviewing project documentation, the Ethical advisor considers that this refers to the knowledge extraction that includes scraping the fanfiction platforms.

To ensure that the research activities are compliant with the ethical principles, deliverable D1.3 ‘*Ethical requirements for human participation in research*’ gives an overview on the ethical procedures that must be followed during the research activities. All project partners agreed to adhere to the ethical guidelines described in forementioned deliverable. As requested in the ethics summary report, an independent ethical advisor, was appointed to provide feedback on the ethical procedures and to advise on potential ethical issues that may appear during the project. This report is the final ethical review.

Evaluation of the ethical aspects

There are several deliverables that are inseparably linked with the ethical review. D.1.2 '*Protection of Personal data*' and D.1.3 '*Ethical requirements for human participation in research*' are the most relevant documents to which we will refer throughout the document.

7. A clear and comprehensive Data Management Plan was drafted with D.1.4 '*Initial Data Management Plan*'. This document includes all the preliminary information regarding data management, mainly, information on datasets collected, produced, and processed within the project for management and research purposes. The deliverable is based on the FAIR (findable, accessible, interoperable, reusable) data principles and the GDPR (General Data Protection Regulation (EU) 2016/679).

Considering the scope of the research activities within Möbius, the main ethical aspect that requires evaluation is data protection and privacy. Therefore the ethical advisor has focused a big part of the evaluation on the main principles as required by the GDPR (General Data Protection Regulation) such as lawfulness, purpose limitation and data minimisation.

After the privacy review, another chapter is dedicated on other ethical considerations during the assessment.

Following work packages are subject to the ethical review due to the nature of the research activities that occurred during the first phase of the research project:

- WP 2 Möbius framework and design principles
- WP3 Prosumer Intelligence and business models
- WP4 Möbius Book
- WP 6 Maximizing impact

For this final report, the ethical advisor revisited the risks that were addressed in the interim report and evaluated possible additional risks during the second phase of the project.

7.1 WP 2: Möbius framework and design principles

These activities were already evaluated for the interim report and **no additional** risks have been identified. The objectives of WP 2 were:

- To define an ethical and transparent theoretical framework for streamlining meaningful, fair and sustainable user-driven innovations in publishing.
- To define and implement an evaluation framework to comprehensively assess Möbius value proposition, processes, results and impact.
- To develop the blueprint of Möbius technologies and set design principles for achieving acceptability, usability and cost-efficiency.

To be able to achieve these objectives, the project partners used a Living Lab approach, where user involvement is crucial. Methodologies, such as survey's, co-creation sessions,

interviews, were used to be able to collect sufficient information on the user requirements. The user requirements are needed for the further technical implementation by other partners in the project. These activities have been analyzed together, considering the similarity in approach when it comes to data protection compliance.

7.1.1 Data protection and privacy

GDPR principles

Going through the documents and after interviewing several researchers involved in WP 2, I noticed that the researchers are well informed about the requirements relating to privacy and data protection. The partners included in this WP are organizations that have a lot of expertise in this area and are used to handling personal data.

It was already clear from the interim report and the first evaluation that the researchers involved in these activities are capable of handling personal data. A template consent form was drafted and made available for the different partners. Some partners have foreseen translations of the consents to ensure that the participants could be sufficiently informed.

Data minimization measures have been implemented. IMEC made sure that no other partner has access to the personal data unless this is required for the purposes of the project. Only the partners that needed to translate the survey had a local copy of the original completed surveys, but it was agreed between the partners that those resp. partners would delete the raw data once they were translated and sent to IMEC for analysis.

Roles and responsibilities

Under the GDPR, there can be different privacy roles in a processing activity, the definitions can be found in article 4 of the GDPR. There is a data controller; this is the entity that determines what and how personal data will be collected and for what purpose this personal data is collected. There is a data processor; this is an entity that processes personal data on behalf of a data controller and does not determine the purpose and means of the processing activity. And finally there are joint controllers, which can be various entities that jointly determine the purpose and means of a processing activity.³

Several project partners have been involved in WP2. Interviews and co-creation sessions have been organized in different European countries. ENOLL was responsible for the Italian and Spanish sessions and has facilitated the German sessions. Apart from this, ENOLL has engaged two external Living Labs to recruit participants, perform the tests and prepare the reports for Finland and Poland. All results of the co-creation sessions and interviews were transferred to IMEC for the analyses.

IMEC was the data controller, while ENOLL and its linked third parties were involved in collecting the data (in the case of Pilot Phase 1, ENOLL was also the data processor), but in

³ Guidelines 07/2020 on the concepts of controller and processor in the GDPR Version 2.1 Adopted on 07 July 2021

the case of Pilot Phase 2 and 3, ENoLL did not process the data and used the surveys owned and created by IMEC and DEN.

This was correctly communicated towards the data subject in the informed consent.

7.1.2 Other ethical considerations

Involvement of minors in the study

In the interim report it was mentioned that according to D.1.3 *'Ethical requirements for human participations in research'* the Zoomer generation (kids and teenagers) was crucial for Möbius and that it would be a part of the targeted population for the survey.

However, during the evaluation for the final review, it became clear that involving minors would be difficult from a privacy perspective, therefore they were kept out of scope of the project.

7.2 WP 3: Prosumer intelligence and business models

WP3 combines regulatory technicalities and business model innovation. Therefore, both subjects are closely related.

The main objectives of WP3:

- Define the current business models and revenue streams used by the European publishing industry.
- Map the opportunities, benefits, risks, and threats of the current practices used by publishers.
- Understand the current regulatory frameworks regarding intellectual properties (IP), between the writers and publishers.
- Regulatory frameworks of prosumers (broad term) and fan fiction.

Data retrieved from different fanfiction platforms were used to study collective behavior patterns in prosumer communities, and to define models and metrics to characterize user generated content, authors and users according to their popularity, controversy, centrality, emotions and language, among other aspects. Models and metrics were developed to meet the needs and requests from publishers and relevant stakeholders, integrating their input and feedback received in workshops, interviews and surveys carried out to this end.

A prototype of interactive dashboards (the PIT MVP) was developed to allow end users explore the data and browse relevant content generated by the communities. These prototypes were built using the user requirements and feedback that was collected during WP2 and the knowledge extraction.

The knowledge extraction was already evaluated for the interim report and since then, no additional extraction activities have taken place. For the final report, only the interactive dashboards have been evaluated.

7.2.1 Data protection and privacy

1. Interactive dashboards

IN2 has **mocked-up** and implemented a first version of the Prosumer Intelligence Toolkit (PIT) for professional users to access the insights extracted by the EUT tools that analyse the data of open prosumer bases. The PIT contains an interactive web interface of dashboards to allow publishers to explore metrics and data.

The PIT is a visualization of the metrics that are retrieved via the knowledge extraction. After testing the PIT, it was noticed that there was a possibility to visualise personal data in the dashboard, i.e. it was possible to show nicknames and usernames. To solve this issues, IN2 has replaced nicknames and usernames in the dashboard with random alphanumeric strings to ensure personal data are not exposed in any way, neither can be extrapolated.

For display purposes and to be able to show the capabilities of a platform, fully **anonymized** data have been used.

For future exploitation, privacy regulations should have to be considered for the entire set up of the platform. This includes evaluating the legitimacy of including personal data in the dashboard, e.g. what is the legal ground, transparency, etc., according to the context, the origin of the data and the eventual consent expressed by the users when creating an account and accepting the platform's Terms of Service.

7.3 WP 4: 1. Möbius Creator and Player

With the help of the input from the pilots (WP2), IN2 and EUT developed two different prototypes of software applications which are part of the Möbius book: 1) the Möbius Creators Toolkit⁴ for helping professional users in the publishing industry to create and manage content in the new format, and 2) the Möbius Player⁵, capable of reading and displaying this information to the end-users and allowing them to control the different interactive aspects.

7.3.1 Data protection and privacy

Considering that the Möbius Creator and Player are prototypes, the review has been based on how the sites operate at this moment. It could be that the setup is temporary and that IN2 or other Partners involved will update it when the site goes live. Both sites share the same log in, so they will be discussed as one.

Lawfulness

The D1.2. '*Protection of Personal data*' does not mention a legal basis for the personal data that is collected via the Creator and Player. After testing both prototypes, the legal basis is

⁴ <https://mobius-player.in-two.com/>

⁵ <https://mobius-creator.in-two.com/login>

consent. However, who needs to ensure consent or a different appropriate legal basis for these processing activities will be the organization that takes over the platforms after the project ends, which in this case is IN2.

To be able to use the creator, a user is required to create a log in. To create a log in, the user must provide a username, email address and password. To be able to continue, the user needs to accept the Terms of Service of the website, which includes a privacy section. According to the guidelines of the EDPB, published in May 2020 on consent⁶, it should be clear that a consent for collecting and processing personal data, which is linked with the acceptance of the Terms of Service, can only relate to personal data that are necessary for providing the service. Otherwise, the consent for processing personal data should be separate from the consent for the Terms of Service.

We have followed the guidelines, and this is absolutely necessary for the service provided. Without a username and password, the user cannot create any Mobius Books. Note that the Player can be used by users without registering. However, a functionality like marking favorites is only available to registered users, since it requires the linking of the favorite to an account.

Right to information (article 13 GDPR)

Article 13 of the GDPR includes all information that should be included in a privacy notice to be able to inform the data subjects about their personal data.

The Terms of Service and the Privacy statement have been reviewed by the legal expert from KU Leuven, detailed contact information for IN2 is openly available here: <https://in-two.com/contact>. Moreover, the Imprint which is available on all IN2 websites in the footer (a requirement of German law) provides ample information about the company, how to reach it, etc. See <https://mobius-player.in-two.com/imprint>

Purpose Limitation and data minimisation

Within the website itself, for the initial assessment it was not clear what personal data can be uploaded. D1.2 '*Protection of Personal Data*' mentions 'Online Identities' as a category of personal data, which refers to the personal data collected via the Creator and Player.

It has been confirmed that a user might upload for the avatar their own portrait picture and might give it as a username their actual first name or a combination of first and last name.

Cookies

There are cookies implemented on the website but there is no cookie banner that indicates which cookies are implemented or allows to opt in or out for optional cookies. Considering that privacy authorities are putting their focus on correct implementation of cookie requirements, it was recommended to update the website accordingly before it goes live. This means screening

⁶ Guidelines 05/2020 on consent under Regulation 2016/679 Version 1.1 Adopted on 4 May 2020, pg.10

the website for cookies, making an inventory of all cookies used for the website, implementing a cookie banner where users have the option to accept or decline the different categories of optional cookies and including a complete cookie policy that explains what cookies are used and what the purpose is of each category.

IN2 has already a cookie policy description in the Terms of Service. The cookie banner will be included as well before the official launch. Moreover, all optional cookies will be deactivated by default. Only after a user will accept the optional cookies, the cookies will be activated.

7.3.2 Other ethical considerations

Involvement of minors in the study

It should be clear whether minors are allowed to use and/or access the Creator and the Player. Depending on this decision, there should be a strategy to manage or prohibit the access of minors to the platforms and how to protect them appropriately towards the potential risks from sharing their personal data, stories, and experiences on an online platform.

If they are allowed to access the platform, depending on the age of the minors, parental permission should be required, and this should be possible within the platform. If minors are not allowed to access the platform, this should be made very clear during the first registration.

Currently, in the Terms of Service a new user has to actively agree before being able to create an account explicitly confirming that "You must be 14 years or older to use the Service."

Involvement of other special categories of personal data according to the GDPR

Article 9 of the GDPR describes special categories of personal data, which are: personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation. These categories of personal data are considered special because they have an additional ethical risk when processing them.

It is unclear to the Ethical advisor whether there will be a possibility for users to upload personal information about themselves in their profiles and if this can include special categories of personal data. This can already be the case by allowing to upload a photo when the photo includes signs of religious beliefs or shows the racial or ethnic origin of the individual.

It was confirmed that, in the profile, the user can add a photo, provide information about real name, links to social media profiles and websites. In the privacy statement this is to be included.

Copyright implications

The IP related implications of the content uploaded on prosumer platforms has been thoroughly researched as part of the project. Deliverable D.3.3 provides a theoretical overview

of the main implications by following a descriptive methodology based on legal doctrinal research with a specific focus on EU copyright law.

Discrimination and racism

The Möbius creator allows users to upload text, video or images. To be able to prevent this content being racist or of discriminatory nature, there is an ethical review foreseen by IN2. As advised by KU Leuven, ex-post content moderation is used. In the FAQ we explain: *"What to do if I encounter harmful content? Reach out to the Möbius team by sending us an email and we'll take care of this immediately. You can also use the share by email feature of each book and notify mobius@in-two.com"*.

The terms and conditions of the Creator and Player for these specific platforms should include information about the IP implications, the prohibition to publish discriminatory and racist content and the responsibility relating to the personal data that might be shared on these platforms. Following these requirements, in the terms and conditions we clearly state: *"You must not abuse, harass, threaten, impersonate or intimidate other users. You may not use the Service for any illegal or unauthorized purpose. International users agree to comply with all local laws regarding online conduct and acceptable content."*

7.4 WP 6: Communication

The overall objective of this WP6 has been to ensure widespread communication and dissemination of the project's results, products and services to the relevant audiences, as well as coordination tasks related to Next Generation Media projects. It has also paved the way for the exploitation of the products and services generated by the project.

Besides, the Möbius website⁷ provides valuable and updated content regarding the project, where its users can dive deep into the project's news, articles, press releases, public deliverables, events, and learn about all the Möbius Innovations. Thus, the website's engagement, impressions, most viewed pages, most read articles, and website demographics have been converted into data and tracked with Google Analytics.

7.4.1 Data protection and privacy

The only personal data collected in this WP is related to the emails of the subscribers to the MÖBIUS newsletter. Then, according to this, the data that has been collected throughout the duration of the project has been very limited. **Lawfulness**

According to the [Terms of Service](#) on the Möbius website, the legal basis for collecting personal data via the website is consent. The Terms of Service area general privacy statement of MWC and all the required information according to article 13 of the GDPR is included.

⁷ Möbius – The power of prosumers in publishing (mobius-project.eu)

Purpose limitation

At first sight, the personal data collected via the website is limited and thus the purpose limitation is met. According to D1.2 '*Protection of Personal data*' data will only be collected when this is required to estimate the impact of the project's communication and dissemination actions.

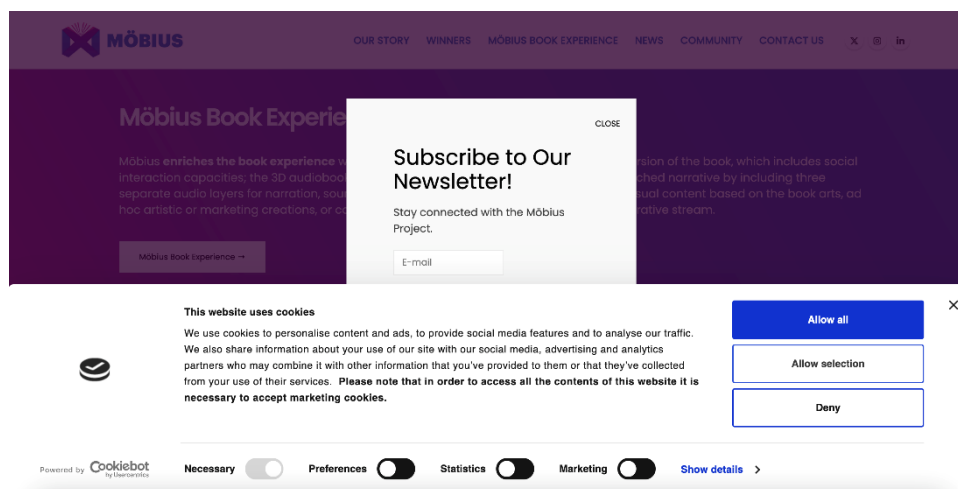
Data minimisation

The list of subscribers is kept by FMWC and not shared with the other Partners in the project. Each partner is in charge of using its own procedures and protocols to collect data during events or piloting activities. All this data is not transferred to other partners.

In regard to image collection, each partner organising an event or taking images is responsible for the data policy that is being used.

Cookies

The Möbius cookies are tracked with Cookiebot, a pop-up banner appears when a new user enters the Möbius website, where they can accept or reject the cookies. These are therefore tracked with Google Analytics.



Conclusion

- From an examination of Möbius deliverables and outputs, including documents and the online platforms, it has been clear for the ethical advisor that the partners in the Möbius project made adequate efforts to adhere to the ethical guidelines. Various deliverables, such as D.1.2 'Protection of Personal data', D.1.3 'Ethical principles for human participation in research' show
8. that sufficient considerations have been given to sensitive topics, such as collecting and processing personal data and ensuring safety for the research participants.

A clear and comprehensive Data Management Plan was drafted with D.1.4 'Initial Data Management Plan'. This document provides a good overview per WP of what data was to be collected and how the data was to be managed throughout the project. It also explains how the Möbius Consortium complies with the FAIR data management guidelines for making the data findable, accessible, interoperable, and reusable.

The findings of the evaluation confirm that EUT did take a cautious approach when selecting fanfiction platforms and sites for the knowledge extraction activities. They paid sufficient attention in advance on the legality of data scraping and the potential risks that come with the activity.

The informed consents that were reviewed for WP2 were sufficient to meet the transparency obligations and fulfilled the requirements of article 13 of the GDPR.

Some topics that needed some additional attentions were:

1. Determining the roles and responsibilities of the partners in the Project for the user involvement activities.
2. The possibility of allowing minors to the Möbius Creator and Möbius Player and considering if additional safeguards were needed to allow or prevent this.
3. Create a strategy to regulate the online platform where users can add content in relation to minors, special categories of personal data and avoiding discriminatory and racist content.
4. Ensuring privacy statements and cookie standards are on point for each website.

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 (General Data Protection Regulation). Available at: [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 \(General Data Protection Regulation\) \(europa.eu\)](#)
9. 2. Guidelines 05/2020 on consent under Regulation 2016/679, Version 1.1, adopted on 4 May 2020. Available at: [edpb_guidelines_202005_consent_en.pdf \(europa.eu\)](#)
3. Guidelines 07/2020 on the concepts of controller and processor in the GDPR, Version 2.1, adopted on 07 July 2021. Available at: [eppb_guidelines_202007_controllerprocessor_final_en.pdf \(europa.eu\)](#)
4. Möbius. (n.d.). Our story – Möbius. Mobius-Project. <https://mobius-project.eu/our-story/>
5. <https://mobius-creator.in-two.com/login>
6. <https://mobius-creator.in-two.com/player/login>

European Commission (2020). General Data Protection Regulation (GDPR): <https://gdpr.eu/tag/gdpr/>

Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. Sci Data 3, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>