www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

H2020-NMBP-ST-IND-2018-2020- GA 958218

PLUG-AND-USE RENOVATION WITH ADAPTABLE LIGHTWEIGHT SYSTEMS

D9.4 DATA MANAGEMENT PLAN

Version: 0.1

	Name	Date
Prepared by	Filip Fišer, Zuzana Taťáková (FENIX TNT)	29/04/2021
Reviewed by WP leader, coordinator	Petra Colantonio (FENIX TNT), Maria Founti (NTUA)	29/04/2021
Reviewed and approved by	Consortium Steering Committee on the basis of contents of v0.1	09/04/2021

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

Distribution list

External		Internal	
European Commission	1x	Consortium partners	1x

Change log

Issue	Date	Pages	Remark / changes	Pages
0.1	07. 4. 2021	56	First issue by FENIX TNT	All
0.2	29. 4. 2021	56	WP leader review by FENIX TNT	All
1.0	29.04.2021	56	Approved by Project Coordinator, NTUA	All

To be cited as

FENIX TNT (2021): "D9.4 – Data Management Plan" of the HORIZON 2020 project PLURAL. EC Grant Agreement No. 958218, Brno, Czech Republic.

Disclaimer

The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

2

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

Table of contents

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

3

List of figures

List of tables

Terms, definitions and abbreviated terms

GA   Grant agreement

DMP   Data Management Plan

WP   Work Package

T   Task

D   Deliverable

M   Month

NZEB   Near Zero Energy Building

BIM   Building information modelling

PnU   Plug-and-Use

KPI   Key Performance Indicator

MODEST   Multi-objective Decision Support Tool

R&D   Research and Development

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

SC	Steering Committee
EDIM	Exploitation, Dissemination and Innovation manager
AB	Advisory Board
DPO	Data Protection Officer
SEM	Smart Energy Management
CO	Confidential
PU	Public

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

1. Executive summary

According to the Guidelines on Open access to Scientific Publications and Research Data for projects funded or co-funded under Horizon 2020, Europe 2020 strategy underlines the central role of knowledge and innovation in growth generation. For these reasons, the European Union strives to improve access to scientific information and to boost the benefits of public investment in the research funded under the EU Framework Programme Horizon 2020.

The present document constitutes the **1st issue** of the Data Management Plan in the framework of the PLUAL project, dedicated to Task 9.2 Data Management under the work package WP9 Dissemination, communication, and exploitation. The Data Management Plan (DMP) identifies the results that should be subject of PLURAL dissemination and exploitation and analyses the main data uses, users and explore the restrictions related to IPR according with the Consortium Agreement, defining the data assurance processes that are to be applied during and after the completion of the project. This document is prepared in compliance with the template provided by the Commission in Annex 1 of the "Guidelines on Data Management in Horizon 2020".

2.   Other deliverables alignment

This document is aligned with the deliverable D11.2 "POPD - Requirement No. 2" which focuses on:

- Definition and processing of personal data
- PLURAL tasks that might involve collection and processing of personal data and related measures
- Consent procedures – consent forms
- Organizational measures – Data Protection Officers
- Technical and organisational measures to safeguard the rights and freedoms of the data subjects and measures to prevent unauthorized access to personal data

3.   Introduction

This document constitutes the **1st issue** of the Data Management Plan (DMP) in the EU framework of the PLURAL project under Grant Agreement No. 958218. The objective of the DMP is to effectively manage the data generated within the project, describing how data will be collected, processed, stored and managed holistically from the perspective of external accessibility and long-term archiving. The DMP will take into consideration the restrictions established by the Consortium and Grant Agreement about Open Access to research data and peer-reviewed scientific publications. The first version of the DMP is delivered at month 7. During the course of the project, the DMP will be monitored and regularly updated up to the release of the It is acknowledged that not all data types will be available at the start of the Project, thus whenever important, if any changes occur to the PLURAL project due to inclusion of new data sets, changes in consortium policies or external factors, the DMP will be updated in order to reflect actual data generated and the user requirements as identified by the PLURAL consortium participants.

The overall goal of the PLURAL project is to design, validate and demonstrate a palette of versatile, adaptable, scalable, off-site prefabricated Plug-and-Use kits. The NZEB (Near Zero Energy Building) concept requires a high level of energy efficiency, in combination with on-site renewable energy use/production. NZEB, can be leveraged further by prefabrication of building renovation components which enables improved quality control and shorter renovation times, since it reduces the duration of production and installation phases. Aligning prefabrication to Building Information Modelling (BIM) further facilitates coordination of manufacturing and preassembly (off-site and on-site) and improves engineering and construction management, bringing substantial benefits (time, cost, and quality) to the project owners.

PLURAL proposes an integrated "Plug-and-play" solution meeting the above challenges, that takes into account User needs, which is hence named "Plug-and-Use" – PnU – kits. Key to achieving these goals is to understand how to select and integrate various renewable energy technologies from the many available, incorporate them in prefabricated façade components and optimise their performance for different

building types, climates and socio-economic conditions. Also, how to best manufacture them minimising energy use and material waste. All the above in the context of BIM (Building information modelling) process.

PLURAL project comprises 7 technical work packages (WPs) as follows:

- WP1 - Residential building requirements for fast-low cost & NZEB deep renovation with PnUs - KPIs
- WP2 - Selection of technologies – Integration – Design of PnU kits
- WP3 - Smart control of the PnU components
- WP4 - Optimization of PnU components –prototyping – testing
- WP5 - IT renovation tools-BIM based LYSIS platform and Multi-objective Decision Support Tool (MODEST) for fast and low-cost deep renovation
- WP6 - Manufacturing & Assembly of PnU kits
- WP7 - Real and virtual building demonstration. Pre-and post-renovation monitoring and assessment. Validation of PLURAL solutions

To facilitate the technical work, there are 3 non-technical work packages to coordinate all the work packages, disseminate and communicate project results and to ensure compliance with the ethics requirements.

- WP8 - Market and Business Oriented Exploitation
- WP9 - Dissemination, communication, and training
- WP10 - Project coordination and management
- WP11 - Ethics requirements

This document has been prepared to describe the data management life cycle for all data sets that will be collected, processed or generated by the PLURAL project. It is a document outlining how research data will be handled during the project, and after the project is concluded. It describes what data will be collected, processed or generated and what methodologies and standards are to be applied. It also defines if and how this data will be shared and/or made open and how it will be curated and preserved.

4. Open access

Open access can be defined as the practice of providing on-line access to scientific information that is free of charge to the reader and that is reusable. In the context of R&D, open access typically focuses on access to "scientific information", which refers to two main categories:

- Peer-reviewed scientific research articles (published in academic journals).
- Scientific research data (data underlying publications and/or raw data).

It is important to note that:

- Open access publications go through the same peer-review process as non-open access publications.
- As an open access requirement comes after a decision to publish, it is not an obligation to publish, it is up to researchers whether they want to publish some results or not.
- As the decision on whether to commercially exploit results (e.g., through patents or otherwise) is made before the decision to publish (open access or not), open access does not interfere with the commercial exploitation of research results. [1]

Benefits of open access:

- Unprecedented possibilities for the dissemination and exchange of information due to the advent of the internet and electronic publishing.
- Wider access to scientific publications and data can help to accelerate innovation, foster collaboration and avoid duplication of effort, build on previous research results, involve citizens and society.
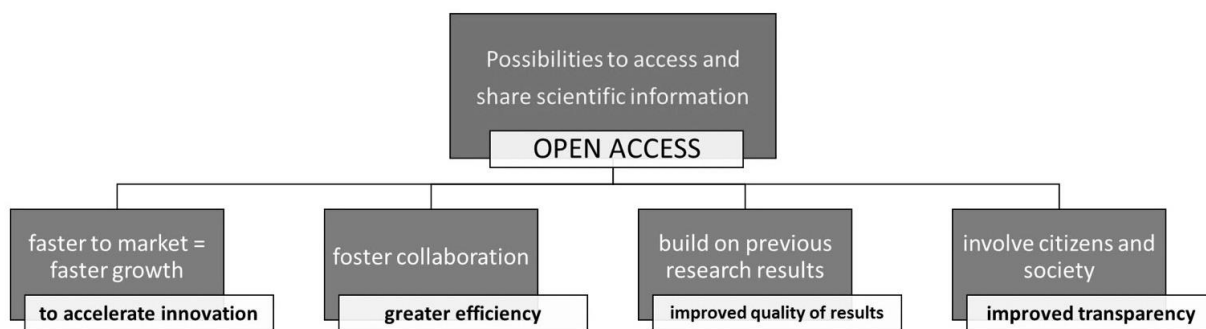
FIGURE 1: OPEN ACCESS BENEFITS

The EC capitalizes on open access and open science as it lowers barriers to accessing publicly funded research. This increases research impact, the free-flow of ideas and facilitates a knowledge-driven society at the same time underpinning the EU Digital Agenda (OpenAIRE Guide for Research Administrators - EC funded projects). The open access policy of European Commission is not a goal in itself, but an element in the promotion of affordable and easily accessible scientific information for the scientific community itself, but also for innovative small businesses.

---

[1] *European Commission background note on open access to publications and data in Horizon 2020*

4.1   Open Access to peer-reviewed scientific publications

Open access to scientific peer-reviewed publications has been anchored as an underlying principle in the Horizon 2020 Regulation and the Rules of Participation and is consequently implemented through the relevant provisions in the Grant Agreement.

More specifically, Article 29: "Dissemination of results, Open Access, Visibility of EU Funding" of PLURAL Grant Agreement establishes the obligation to ensure open access to all peer-reviewed articles produced by PLURAL.

Article 29.2 Open access to scientific publications in PLURAL GA

Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

In particular, it must:

a) as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications.

Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

b) ensure open access to the deposited publication — via the repository — at the latest:
    i) on publication, if an electronic version is available for free via the publisher, or
    ii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.
c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

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

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

4.1.1   Green open access

The green open access is also called self-archiving and means that the published article or the final peer-reviewed manuscript is archived by the researcher in an online repository before, after or alongside its

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

11

www.plural-renovation.eu

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

publication. Access to this article is often delayed (embargo period). Publishers recoup their investment by selling subscriptions and charging pay-per-download/view fees during this period during an exclusivity period. This model is promoted alongside the "Gold" route by the open access community of researchers and librarians and is often preferred.

4.1.2 Gold open access

This type of open access is sometimes called open access publishing, or author pays publishing and means that a publication is immediately provided in open access mode by the scientific publisher. Associate costs are shifted from readers to the university or research institute to which the researcher is affiliated, or to the funding agency supporting the research. This model is usually the one promoted by the community of well-established scientific publishers in the business.

4.2   Open Access to research data

"Research data" refers to information, in particular facts or numbers, collected to be examined and considered and as a basis for reasoning, discussion, or calculation. In a research context, examples of data include statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images. The focus is on research data that is available in digital form.

Article 29.3 Open access to research data in the PLURAL GA

Regarding the digital research data generated in the action ('data'), the beneficiaries must:

a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:
   i) the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible.
   ii) other data, including associated metadata, as specified and within the deadlines laid down in the 'data management plan' (see Annex 1 of PLURAL GA).
b) provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

The beneficiaries do not have to ensure open access to specific parts of their research data if the achievement of the action's main objective, as described in Annex 1, would be jeopardized by making those

specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access to third parties.

4.3 Dissemination & Communication and Open Access

For the implementation of PLURAL Project, there is a complete dissemination and communication set of activities scheduled, with the objectives of raising awareness in the research community, industry and wide public (e-newsletters, e-brochures, poster or events, are foreseen for the dissemination of PLURAL to key groups potentially related to the project results' exploitation). Likewise, PLURAL website, webinars, press releases or videos, for instance, will be developed for communication to a wider audience. Details about all those dissemination and communication elements are provided in the deliverable D9.3 Communication and Dissemination Plan. The Data Management Plan and the actions derived are part of the overall PLURAL dissemination and communication strategy, which is included in the above-mentioned D9.3.

5. Objectives of data management plan

The purpose of PLURAL Data Management Plan (DMP) is to provide a management assurance framework and processes that fulfil the data management policy that will be used by the PLURAL project partners with regard to all the dataset types that will be generated by the PLURAL project. The aim of the DMP is to control and ensure the quality of project activities, and to effectively/efficiently manage the material/data generated within the PLURAL project. It also describes how data will be collected, processed, stored, and managed holistically from the perspective of external accessibility and long-term archiving.

The content of the DMP is complementary to other official documents that define obligations under the Grant Agreement (GA) and associated annexes and shall be considered a living document and as such will be the subject of periodic updating as necessary throughout the lifespan of the project.

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public
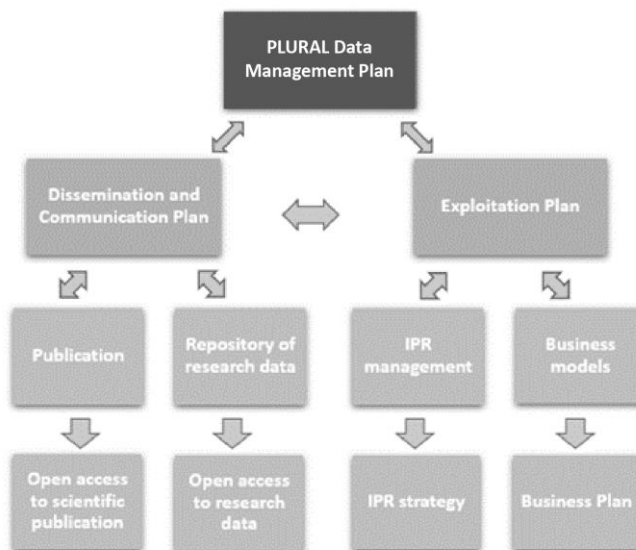
FIGURE 2: DATA MANAGEMENT PLAN OVERVIEW

6. PLURAL project website and server, storage, and access

6.1 PLURAL project website

The PLURAL project website is used for storing only public documents related to the Project and dissemination. The website has been set up under the address www.plural-renovation.eu and has been launched in December 2019. The PLURAL website is meant to be functioning for the whole Project duration and a minimum of 2 years after the Project end. The website presents the first step in the partial objective of developing and deploying an awareness and dissemination plan.

Design of the website has been done by dissemination leader FENIX that is also in charge of website maintenance and regular update. As the Project website is not intended to be static, the news and events, as well as the rest of the content, will be once a month updated and managed throughout the duration of the Project based on the partner's inputs and Project evolution. Due to the expected impact on different audiences all around the world, it was designed to provide complete and technical information in a way that is accessible by a wide range of stakeholders. The website is available in English, but the translation to partners´ languages is considered as well to break the language barrier and enable wide and effective communication of Project results at the national level.

The site itself has only the public section, which is accessible to everyone and contains public deliverables, promo materials, presentations, newsletters, publications, papers, and others.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

14

To ensure the safety of the data, the partners will use their available local file servers to periodically create backups of the relevant materials. The PLURAL project website itself already has its own backup procedures. The Project Coordinator (IPN) along with the Dissemination and Exploitation Leader (FENIX) will oversee data management and all the relevant issues.
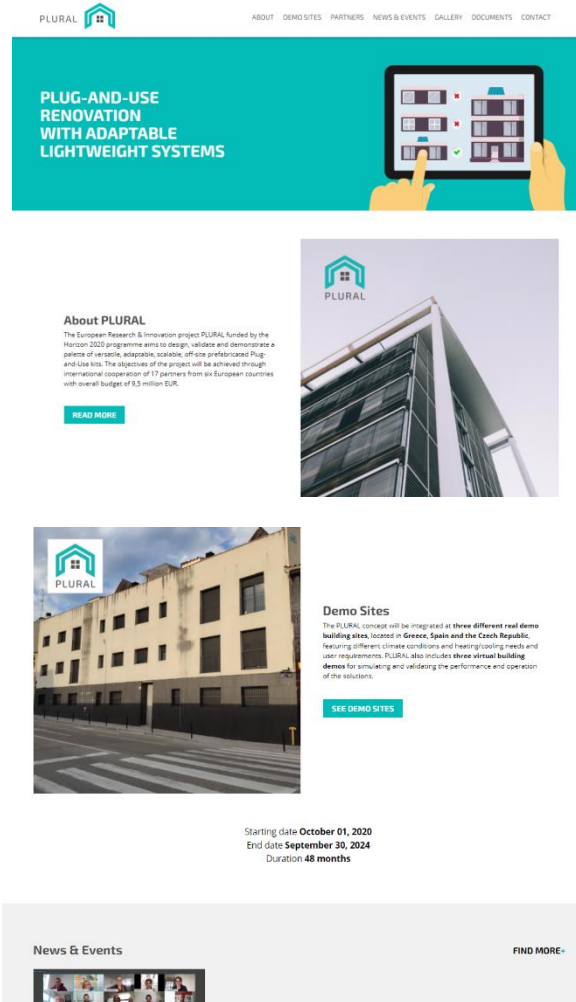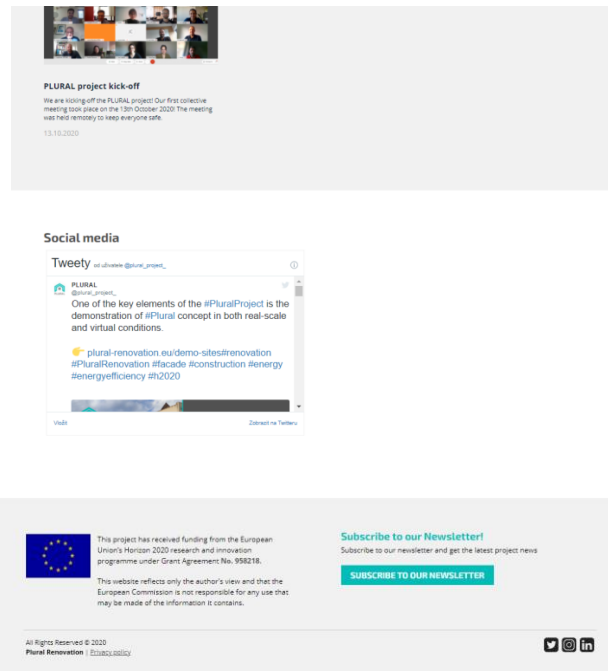
FIGURE 3: PLURAL WEBSITE

6.2 EMDESK

Confidential data will be stored in EMDESK (PLURAL Project Management Tool). Infrastructure security: To ensure the highest infrastructure security, EMDESK is hosted with the Open Telekom Cloud (OTC) – one of the most secure and modern cloud data centres in the world. OTC infrastructure is operated in Deutsche Telekom's highly secure twin-core data centres in Magdeburg and Biere, Germany, as well as data backup. All services are strictly regulated and are regularly checked and certified by independent institutions, to meet the latest security and data protection requirements (TISAX, Trusted Cloud, ISO 14001, ISO 22301, ISO 9001, ISO 20000, ISO 27001, ISO 27017, ISO 27018, CSA Star Level 2, TÜV Trusted Cloud Service, TCDP version 1.0). For more information, visit: https://open-telekom-cloud.com/en/security/data-centers

OTC's data processing is strictly regulated by the German data protection act and compliant with GDPR which is certified in accordance with the Trusted Cloud Data Protection Profile (TCDP) 1.0. For more information, visit: https://open-telekom-cloud.com/en/security/data-protection-and-compliance

Data segregation & confidentiality: The production systems, the database and the network are physically and logically separated from the enterprise infrastructure. In addition, we separate customer accounts logically at the data layer. There are strict security policies for employees' access. Access to customer data is only a last resort option, strictly controlled and logged, technically and legally limited to a handful of employees to ensure appropriate customer support under strict confidentiality conditions and supervision

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

of senior management. To connect to our production infrastructure, employees must use secure authentication that is identity-based and restricted based on employee role using a least-privilege approach. EMDESK employees are trained on data protection and legally obliged to non-disclosure. When evaluating access levels, the security workgroup considers employee experience levels, responsibilities, and internal risk assessments.

Software development security: The software architecture and release cycle are designed to protect against security breaches. EMDESK uses a version control system to track changes to our code base. Changes to the architecture and code must follow the internal coding principles, security policies, and industry's best practices for security. Changes are pushed to a staging server for thorough review and withstand numerous manual/automated tests before being released into production. At regular intervals EMDESK conducts source code reviews by our development advisory team. Releases are typically deployed outside typical European business hours during a planned downtime period. Urgent changes can be made available on demand (e.g., a security patch).

User authentication: Each user in EMDESK has a unique account with a verified business email address. EMDESK forces users to set account passwords validated against password policies with high security criteria, including complexity, reuse, and expiration requirements. Passwords are hashed and salted in accordance with industry best practice. 2-Factor Authentication is available as an additional security measure to protect EMDESK accounts. User sessions and IP addresses are individually tracked and can be individually audited or revoked by their user. We have a maximum session duration configured.

Data redundancy, backup, and recovery: EMDESK's data protection model provides near real-time database replication to ensure that customer data is both secure and available on redundant and geographically distributed servers in Germany. The exchange of data between them runs via their own network, separate from the internet. A full backup is performed daily, encrypted, and stored in an environment separate from the primary servers to ensure fault tolerance. In an emergency, customer data from the past can be restored. Even in the unlikely event of multiple server failures, major disruptions, or disasters, we can recover the entire production system from our disaster recovery site, which includes a live updated standby database system.

Privacy and GDPR compliant: EMDESK is committed and obligated by European and German law to protect the privacy of users and their data. The EU's General Data Protection Regulation (GDPR) and the German federal data protection act (BDSG) force organizations based in Germany and the EU, but also those outside of the EU processing the personal data of people residing in the EU, to comply with these regulations. These legislations give users greater security, transparency, and control of their personal data online – a principle we couldn't agree more with. EMDESK has certified services, for which they act as data processor, under GDPR / BDSG. They have established processes to ensure that we respect your right to erasure, rectification, data portability, information and to be forgotten or restriction. They have a personal data registry that is

maintained, pursuant to Article 30 of the GDPR. This lists out the type of personal data, where the personal data is stored, maintained, and processed, any data flow, who the responsible party is, and the retention times. For more information, see our Privacy Policy in chapter 12.9 of this document.
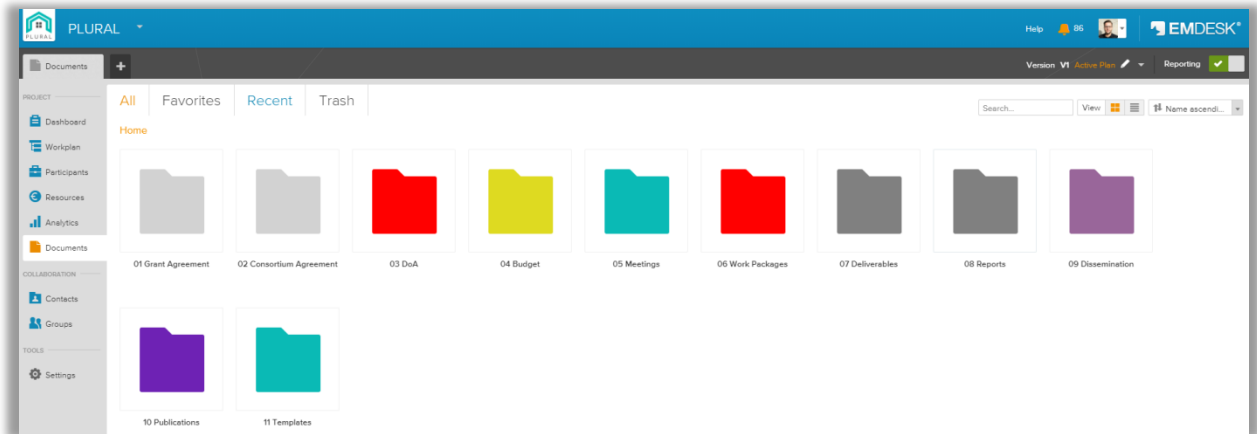
FIGURE 4: EMDESK USER INTERFACE

7. Data management plan implementation

PLURAL has set up a practical but solid organizational structure to pursue the project goals effectively, facilitate the work of the partners and fulfil the requirements of the Commission. Being composed of many partners, the consortium has defined a set of tools and management procedures to follow the work plan closely and to ensure a close link between decision making, as well as effective communication of decisions to the Consortium during the project lifetime. The overall management structure is outlined in the next Figure.

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public
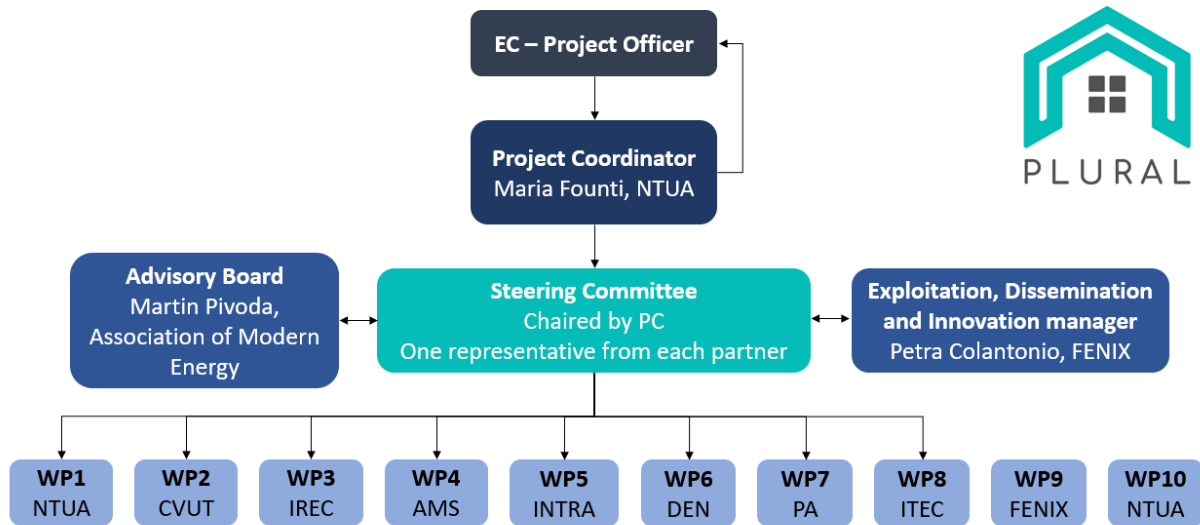
FIGURE 5: PLURAL MANAGEMENT STRUCTURE

7.1 Steering committee

The Steering committee (SC) consists of representatives of each organization participating in the consortium chaired by the PC taking overall responsibility for the steering of the research. It will constitute the highest decision board and its main task is the project governance. SC has the overall responsibility of all technical, financial, legal, administrative, ethical, and dissemination issues of the Project. It is chaired by the project coordinator – prof. Maria Founti from NTUA.

7.2 Advisory board

The Advisory Board (AB) has been created to provide inputs for product and market requirements and to evaluate the Project results and achievements. The main role of the AB is to observe the work tackled in the project and envisage possible inconsistencies between the market expectations and the technical work, to assure a high level of innovation and to find a suitable balance between the waste managers, architects and end-users' requirements and developed technical solutions. The AB includes external experts and is chaired by Martin Pivoda from the Association of Modern Energy (Czech Republic).

7.3 Exploitation, Dissemination and Innovation manager

The Exploitation, Dissemination and Innovation Manager (EDIM) is responsible for dissemination and communication planning, monitoring and evaluation of KPIs, for exploitation planning (support and liaising to companies, SMEs and industrials), overall strategy and IPR management, continuous assessment of the market potential of the developed solutions. This role was appointed to Petra Colantonio from FENIX.

8. Research data

"Research data" refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion, or calculation. In a research context, examples of data include statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images. The focus is on research data that is available in digital form.

As indicated in the Guidelines on Data Management in Horizon 2020 (European Commission, Research & Innovation, October 2015), scientific research data should be easily:

1. DISCOVERABLE

The data and associated software produced and/or used in the project should be discoverable (and readily located), identifiable by means of a standard identification mechanism (e.g., Digital Object Identifier).

2. ACCESSIBLE

Information about the modalities, scope, licenses (e.g., licensing framework for research and education, embargo periods, commercial exploitation, etc.) in which the data and associated software produced and/or used in the project is accessible should be provided.

3. ASSESSABLE and INTELLIGIBLE

The data and associated software produced and/or used in the project should be easily assessable for and intelligible to third parties in contexts such as scientific scrutiny and peer review (e.g., the minimal datasets are handled together with scientific papers for the purpose of peer review, data is provided in a way that judgments can be made about their reliability and the competence of those who created them).

4. USEABLE

Beyond the original purpose for which it was collected The data and associated software produced and/or used in the project should be useable by third parties even long time after the collection of the data (e.g. the data is safely stored in certified repositories for long term preservation and curation; it is stored together with the minimum software, metadata and documentation to make it useful; the data is useful for the wider public needs and usable for the likely purposes of non-specialists).

5. INTEROPERABLE to specific quality standards

The data and associated software(s) produced and/or used in the Project should be interoperable, allowing data exchange between researchers, institutions, organizations, countries, etc.

Some examples of research data include:

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

- Documents (text, Word), spreadsheets
- Questionnaires, transcripts, codebooks
- Laboratory notebooks, field notebooks, diaries
- Audiotapes, videotapes
- Photographs, films
- Test responses, slides, artifacts, specimens, samples
- Collection of digital objects acquired and generated during the process of research
- Database contents (video, audio, text, images)
- Models, algorithms, scripts
- Contents of an application (input, output, logfiles for analysis software, simulation software, schemas)
- Methodologies and workflows
- Standard operating procedures and protocols.

In addition to the other records to manage, some kinds of data may not be sharable due to the nature of the records themselves, or to ethical and privacy concerns (e.g., preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, communication with partners, etc.). Research data also do not include trade secrets, commercial information, materials necessary to be held confidential by the researcher until they are published, or information that could invade personal privacy. Research records that may also be important to manage during and beyond the project are correspondence, project files, technical reports, research reports, etc.

9. PLURAL datasets

Projects are required to deposit the research data - the data, including associated metadata, needed to validate the results presented in scientific publications as soon as possible; and other data, including associated metadata, as specified and within the deadlines laid down in a data management plan (DMP).

At the same time, projects should provide information (via the chosen repository) about tools and instruments at the disposal of the beneficiaries and necessary for validating the results, for instance, specialized software(s) or software code(s), algorithms, analysis protocols, etc. Where possible, they should provide the tools and instruments themselves.

The types of data to be included within the scope of the PLURAL Data Management Plan shall as a minimum cover the types of data that are considered complementary to material already contained within declared project deliverables. In order to collect the information generated during the project, the template for data collection will be circulated periodically every 6 months. The scope of this template is to detail the research results that will be developed during the PLURAL Project detailing the kind of results and how it will be

managed. The responsibility to define and describe all non-generic data sets specific to an individual work package is with the WP leader.

9.1   Data set reference and name

The identifier for the data set to be produced. All data sets within this DMP have been given a unique field identifier and are listed in Section 12 (Data summary of the PLURAL project).

9.2   Data Set Description

A data set is defined as a structured collection of data in a declared format. Most commonly a data set corresponds to the contents of a single database table, or a single statistical data matrix, where every column of the table represents a particular variable, and each row corresponds to a given member of the data set in question. The data set may comprise data for one or more fields. For the purposes of this DMP data sets have been defined by generic data types that are considered applicable to the PLURAL project. For each data set, the characteristics of the data set have been captured in a tabular format as enclosed in Section 12 (Data summary of the PLURAL project).

9.3   Standards & Metadata

Metadata is defined as "data about data". It is "structured information that describes, explains, locates, and facilitates the means to make it easier to retrieve, use or manage an information resource".

Metadata can be categorized into three types:

- Descriptive metadata describes an information resource for identification and retrieval through elements such as title, author, and abstract.
- Structural metadata documents relationships within and among objects through elements such as links to other components (e.g., how pages are put together to form chapters).
- Administrative metadata manages information resources through elements such as version number, archiving date, and other technical information for the purposes of file management, rights management and preservation.

There are a large number of metadata standards which address the needs of particular user communities.

9.4   Data Sharing

During the period, when the Project is ongoing, the sharing of data shall be defined by the configuration rules defined in the access profiles for the project participants. Each individual project data set item shall be allocated a character "dissemination classification" for the purposes of defining the data-sharing restrictions. The classification shall be an expansion of the system of confidentiality applied to deliverables reports provided under the PLURAL Grant Agreement.

www.plural-renovation.eu

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

- PU: Public
- CO: Confidential, only for members of the consortium; Commission services always included

The two above levels are linked to the "Dissemination Level" specified for all PLURAL deliverables.

All material designated with a PU dissemination level is deemed uncontrolled. In case the dataset cannot be shared, the reasons for this should be mentioned (e.g., ethical, rules of personal data, intellectual property, commercial, privacy-related, or security-related).

Data will be shared when the related deliverable or paper has been made available at an open access repository. The expectation is that data related to a publication will be openly shared. However, to allow the exploitation of any opportunities arising from the raw data and tools, data sharing will proceed only if all co-authors of the related publication agree. The Lead author is responsible for getting approvals and then sharing the data and metadata on Zenodo (www.zenodo.org), a popular repository for research data. The Lead Author will also create an entry on OpenAIRE (www.openaire.eu) in order to link the publication to the data.

OpenAIRE is an EC/funded initiative that implements the Horizon 2020 Open Access mandate for publications and its Open Research Data Pilot and may be used to reference both the publication and the data. A link to the OpenAIRE entry will then be submitted to the PLURAL Website Administrator (FENIX) by the Lead Author.
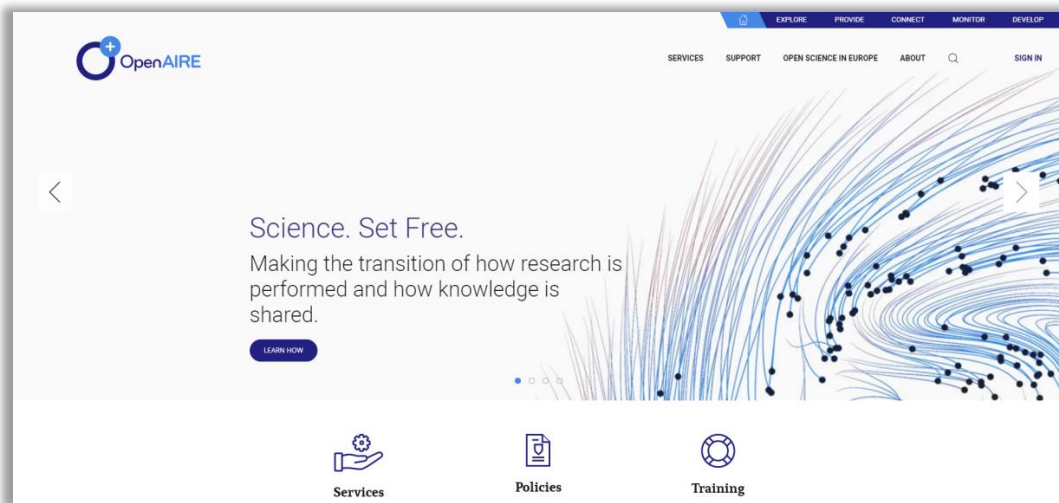
FIGURE 6: OPENAIRE WEBSITE

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu
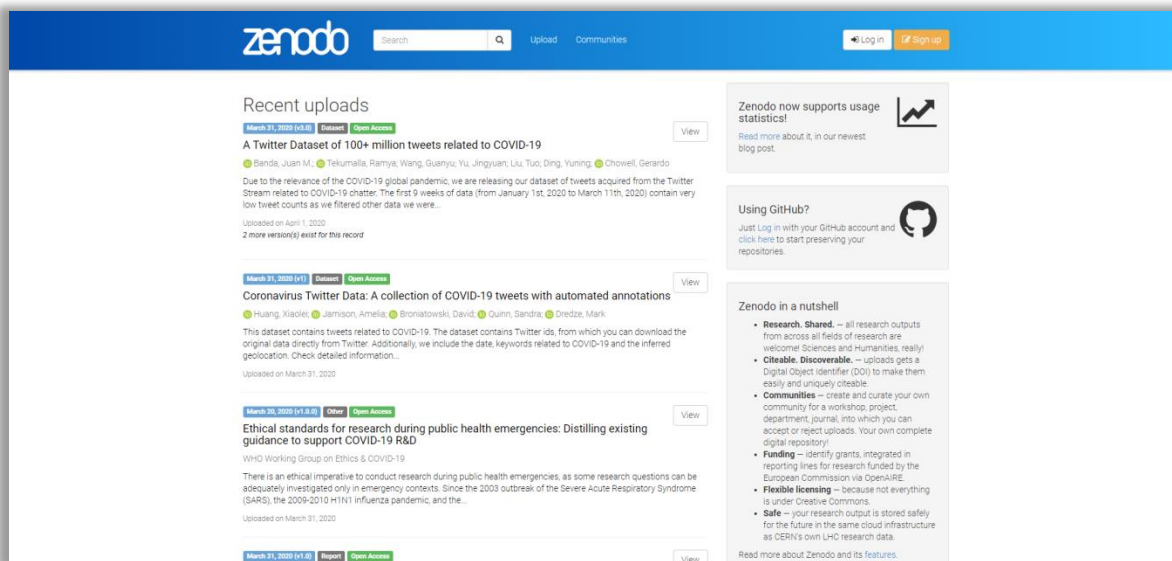
FIGURE 7: ZENODO REPOSITORY

9.5 Data archiving and preservation

Both Zenodo and OpenAIRE are purpose-built services that aim to provide archiving and preservation of long-tail research data. In addition, the PLURAL website, linking back to OpenAIRE, is expected to be available for at least two years after the end of the Project. All raw data collected will be stored on a secure server run by the Project Coordinator. These contributions will be accessible only by organisation team members, as well as be password secured, in line with the data protection rules in the EU and the Portuguese Data Protection Law. At the formal project closure, all the data material that has been collated or generated within the Project shall be copied and transferred to a digital archive (Project Coordinator responsibility). The length of data retention for the whole project has been set for a period of six years, to comply with the mandatory five years' period that, according to the GA, PLURAL partners must retain original documents related to the project. Also, all PLURAL partners must keep any data, documents or other material or information confidential, not only during the implementation of the project, but for four years after the termination of it, as per the GA.

10. Datasets technical requirements

The applicable data sets are restricted to the following data types for the purposes of archiving. The technical characteristics of each data set are described in the following sections. The copyrights with respect to all data types shall be subject to IPR clauses in the GA but shall be considered to be royalty-free. The use of file compression utilities, such as "WinZip" is prohibited. No data files shall be encrypted.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

24

10.1 Engineering CAD drawings

The .dwg file format is one of the most commonly used design data formats, found in nearly every design environment. It signifies compatibility with AutoCAD technology. Autodesk created .dwg in 1982 with the launch of its first version of AutoCAD software. It contains all the pieces of information a user enters, such as: Designs, Geometric data, Maps, Photos.

10.2 Static graphical images

Graphical images shall be defined as any digital image irrespective of the capture source or subject matter. Images should be composed such to contain only objects that are directly related to PLURAL activity and do not breach IPR of any third parties.

Image files are composed of digital data and can be of two primary formats of "raster" or "vector". It is necessary to represent data in the rasterized state for use on computer displays or for printing. Once rasterized, an image becomes a grid of pixels, each of which has a number of bits to designate its colour equal to the colour depth of the device displaying it. The PLURAL project shall only use raster-based image files. The allowable static image file formats are JPEG and PNG.

There is normally a direct positive correlation between image file size and the number of pixels in an image, the colour depth, or bits per pixel used in the image. Compression algorithms can create an approximate representation of the original image in a smaller number of bytes that can be expanded back to its uncompressed form with a corresponding decompression algorithm. The use of compression tools shall not be used unless absolutely necessary.

10.3 Animated graphical images (videos)

Graphic animation is a variation of stop motion and possibly more conceptually associated with traditional flat cell animation and paper drawing animation, but still technically qualifying as stop motion consisting of the animation of photographs (in whole or in parts) and other non-drawn flat visual graphic material. The allowable animated graphical image file formats are AVI, MPEG, MP4, and MOV. The WP leader shall determine the most suitable choice of format based on equipment availability and any other factors. This is mainly valid for the PLURAL project promo video, which is expected to contain animated graphical images, infographics and on-site interviews.

TABLE 1: VIDEO FORMATS

Format	File	Description
MPEG	.mpg .mpeg	MPEG. Developed by the Moving Pictures Expert Group. The first popular video format on the web. Used to be supported by all browsers, but it is not supported in HTML5 (See MP4).

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

PLURAL

AVI	.avi	AVI (Audio Video Interleave). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers.
WMV	.wmv	WMV (Windows Media Video). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers.
QuickTime	.mov	QuickTime. Developed by Apple. Commonly used in video cameras and TV hardware. Plays well on Apple computers, but not in web browsers. (See MP4)
RealVideo	.rm .ram	RealVideo. Developed by Real Media to allow video streaming with low bandwidths. It is still used for online video and Internet TV but does not play in web browsers.
Flash	.swf .flv	Flash. Developed by Macromedia. Often requires an extra component (plug-in) to play in web browsers.
Ogg	.ogg	Theora Ogg. Developed by the Xiph.Org Foundation. Supported by HTML5.
WebM	.webm	WebM. Developed by the web giants, Mozilla, Opera, Adobe, and Google. Supported by HTML5.
MPEG-4 or MP4	.mp4	MP4. Developed by the Moving Pictures Expert Group. Based on QuickTime. Commonly used in newer video cameras and TV hardware. Supported by all HTML5 browsers. Recommended by YouTube.

10.4 Audio data

An audio file format is a file format for storing digital audio data on a computer system. The bit layout of the audio data (excluding metadata) is called the audio coding format and can be uncompressed, or compressed to reduce the file size, often using lossy compression. The data can be a raw bitstream in an audio coding format, but it is usually embedded in a container format or an audio data format with a defined storage layer. The allowable animated audio file formats are MP3 or MP4. This is mainly valid for the PLURAL Project promo video, which is expected to contain interviews with key partners, voice-over and music.

TABLE 2: AUDIO FORMATS

Format	File	Description
MIDI	.midi .mid	MIDI (Musical Instrument Digital Interface). The main format for all electronic music devices like synthesizers and PC sound cards. MIDI files do not contain sound, but digital notes that can be played by electronics. Plays well on all computers and music hardware, but not in web browsers.
RealAudio	.rm .ram	RealAudio. Developed by Real Media to allow streaming of audio with low bandwidths. Does not play in web browsers.
WMA	.wma	WMA (Windows Media Audio). Developed by Microsoft. Commonly used in music players. Plays well on Windows computers, but not in web browsers.
AAC	.aac	AAC (Advanced Audio Coding). Developed by Apple as the default format

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

		for iTunes. Plays well on Apple computers, but not in web browsers.
WAV	.wav	WAV. Developed by IBM and Microsoft. Plays well on Windows, Macintosh, and Linux operating systems. Supported by HTML5.
Ogg	.ogg	Theora Ogg. Developed by the Xiph.Org Foundation. Supported by HTML5.
MP3	.mp3	MP3 files are actually the sound part of MPEG files. MP3 is the most popular format for music players. Combines good compression (small files) with high quality. Supported by all browsers.
MPEG-4 or MP4	.mp4	MP4. Developed by the Moving Pictures Expert Group. Based on QuickTime. Commonly used in newer video cameras and TV hardware. Supported by all HTML5 browsers. Recommended by YouTube.

10.5 Textual data

A text file is structured as a sequence of lines of electronic text. These text files shall not contain any control characters, including the end-of-file marker. In principle, the least complicated form of textual file format shall be used as the first choice.

On Microsoft Windows operating systems, a file is regarded as a text file if the suffix of the name of the file is "txt". However, many other suffixes are used for text files with specific purposes. For example, source code for computer programs is usually kept in text files that have file name suffixes indicating the programming language in which the source is written. Most Windows text files use "ANSI", "OEM", "Unicode" or "UTF-8" encoding.

Prior to the advent of Mac OS X, the classic Mac OS system regarded the content of a file to be a text file when its resource fork indicated that the type of the file was "TEXT". Lines of Macintosh text files are terminated with CR characters.

Being certified Unix, macOS uses POSIX format for text files. Uniform Type Identifier (UTI) used for text files in macOS is "public.plain-text".

10.6 Numeric data

Numerical Data is information that often represents a measured physical parameter. It shall always be captured in number form. Other types of data can appear to be in number form, i.e., telephone number. However, this should not be confused with true numerical data that can be processed using mathematical operators.

10.7 Process and test data

Standard Test Data Format (STDF) is a proprietary file format originating within the semiconductor industry for test information, but it is now a Standard widely used throughout many industries. It is a commonly

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

used format produced for/by automatic test equipment (ATE). STDF is a binary format but can be converted either to an ASCII format known as ATDF or to a tab-delimited text file. Software tools exist for processing STDF generated files and performing statistical analysis on a population of tested devices. PLURAL innovation development shall make use of this file type for system testing.

10.8 Microsoft Office Application Suite

PLURAL Project partners shall use the currently MS supported operating system and convert from any previous obsolete releases.

The types of specific applications available within the current Microsoft Windows operating system shall be used to support all project activities in preference to any other software solutions. The data file types associated with these applications shall be saved in the default format and be in accordance with the file naming convention as specified in Section 10.

At the Microsoft Office Application-level the "file properties" shall be configured using the "document properties" feature. This is accessed via "Info" dropdown within the "File" menu. The "properties" of the document can be modified on the right side of the dialogue box, as shown in the picture below.
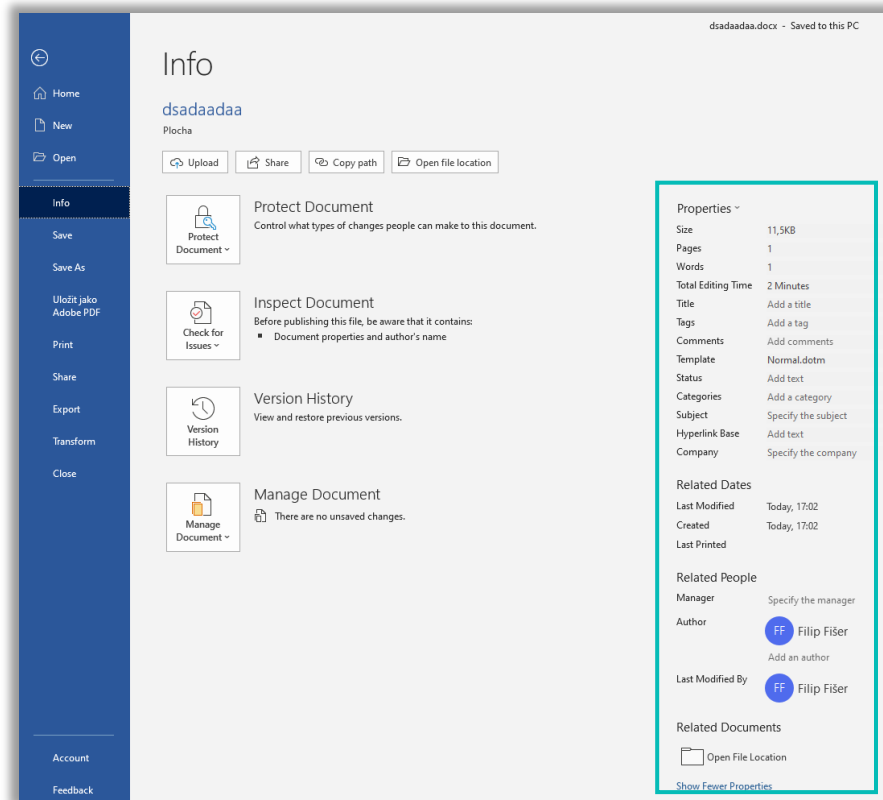
FIGURE 8: MS OFFICE "DOCUMENT PROPERTIES" FEATURE

- **Title:** Duplication of the name used for the data file name
- **Subject:** Identifier for PLURAL work package discrimination and shall be of the following format PLURAL_WPxx.
- **Author:** Name of the person creating the document
- **Manager:** Name of the author's immediate line manager
- **Company:** Company name of the author to be stated as follows: companyname_PLURAL
- **Tags:** Free format text and should contain keywords that would be relevant and useful to future data searches. The tags should all be in lower case and separated with commas
- **Comments:** Description of file contents in free format text
- **Hyperlink base:** Blank

10.9 Adobe systems

Portable Document Format (PDF) is a file format developed by Adobe Systems for representing documents in a manner that is independent of the original application software, hardware, and operating system used to create those documents. A PDF file can describe documents containing any combination of text, graphics,

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

and images in a device-independent and resolution-independent format. These documents can be one page or thousands of pages, very simple or extremely complex with a rich use of fonts, graphics, colour, and images. PDF is an open standard, and anyone may write applications that can read or write PDFs royalty-free. PDF files are especially useful for documents such as magazine articles, product brochures, or flyers in which you want to preserve the original graphic appearance online.

11. Naming convention

All files irrespective of the data type are named in accordance with the following document file naming convention:

Deliverables: PLURAL_[DX.X]_ [X.X]_[PARTNER]_[YYYY-MM-DD]

Other documents: PLURAL_[TITLE]_[YYYY-MM-DD]

Where:

- [DX.X] is the PLURAL deliverable number as stated in the GA, with D as a prefix.
- [X.X] is the document version.
- [PARTNER] is the name of the project partner responsible for issuing the document
- [YYYY-MM-DD] is the date format.
- [TITLE] is the name of the document.

12. GDPR compliance

At every stage, the PLURAL Project Management and Project Consortium will ensure that the Data Management Plan is in line with the norms of the EU and Commission [as expressed in the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679)] and will promote best practice in Data Management. The GDPR came into force on 25 May 2018.

The responsibility of protection and use of personal data is on the Project partner collecting data. The questionnaire answers shall be anonymized in an early stage of the process, and data making it possible to connect the answers to individual persons shall be destroyed. The consent of the questionnaire participant will be asked in all questionnaires conducted within the PLURAL project. This will include a description of how and why the data is to be used. The consent must be clear and distinguishable from other matters and provided in an intelligible and easily accessible form using clear and plain language. It must be as easy to withdraw consent as it is to give it.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

30

The questionnaire participants will not include children or other groups requiring a supervisor. Also, when asking for somebody's contact information, the asking party shall explain why this information is asked and for what purposes it will be used.

12.1   Controller and Processor

Controller means the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data.

Processor refers to a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller.

12.2   Data Protection Officer

The Data Protection Officer (DPO) is responsible for overseeing data protection strategy and implementation to ensure compliance with GDPR requirements. Under the GDPR, there are three main scenarios where the appointment of a DPO by a controller or processor is mandatory:

- The processing is carried out by a public authority
- The core activities of the controller or processor of processing operations which require regular and systematic processing of data subjects on a large scale; or
- The core activities of the controller or processor consist of processing on a large scale of sensitive data or data relating to criminal convictions/offences.

Each PLURAL partner shall assess its own data processing activities to understand whether they fall within the scope of the requirements set out above. If they do, then it will be important to either fulfil the DPO position internally or from an external source. For those organizations to whom the requirements do not apply, they may still choose to appoint a DPO. If they choose not to appoint a DPO, then it is recommended to document the reasoning behind that decision.

12.3   Data protection

European citizens have a fundamental right to privacy. In order to protect this right of the individual data subject, the anonymization and pseudonymization can be used.

Anonymization refers to personal data processing with the aim of irreversibly preventing the identification of the individual to whom it relates. For the anonymized types of data, the GDPR does not apply, as long as the data subject cannot be re-identified, even by matching his/her data with other information held by third parties.

Pseudonymization refers to the personal data processing in such a manner that the data can no longer be attributed to a specific data subject without the use of additional information. To pseudonymize a data set,

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

the additional information must be kept separately and subject to technical and organizational measures to ensure non/attribution to an identified or identifiable person. In other words, the pseudonymized data constitutes the basic privacy-preserving level allowing for some data sharing and represent data where direct identifiers (e.g., names) or quasi-identifiers (e.g., unique combinations of date and zip codes) are removed and data are mismatched with a substitution algorithm, impeding correlation of readily associated data to the individual's identity. For such data, GDPR applies, and appropriate compliance must be ensured.

Due to the limited amount and less harmful nature of the personal data collected within the PLURAL project, neither pseudonymization nor anonymization will be used. Other means of data security will be used to protect data collected in the framework of the Project.

12.4 Breach Notification

Under the GDPR, breach notification will become mandatory in all member states where a data breach is likely to "result in a risk for the rights and freedoms of individuals". This must be done within 72 hours of first having become aware of the breach. Data processors will also be required to notify the data subjects and the controllers, "without undue delay" after first becoming aware of a data breach.

12.5 Right to be Forgotten

Also known as Data Erasure, the right to be forgotten entitles the data subject to have the data controller erase his/her personal data, cease further dissemination of the data, and potentially have third parties halt processing of the data. The conditions for erasure include the data no longer being relevant to original purposes for processing, or a data subjects withdrawing consent. It should also be noted that this right requires controllers to compare the subjects' rights to "the public interest in the availability of the data" when considering such requests. If a data subject wants his/her personal data to be removed from a questionnaire, the non-personal data shall remain in the analysis of the questionnaire.

12.6 Data portability

GDPR introduces data portability, which refers to the right for a data subject to receive the personal data concerning them, which they have previously provided in a 'commonly use and machine-readable format' and have the right to transmit that data to another controller.

The personal data collected within the PLURAL project will be in electronic form, mostly in Microsoft Excel file forms .xls or .xlsx. In case the data subject requests to transmit his/her data to another controller, there should be no technical limitations for providing them.

12.7 Privacy by design and by default

Privacy by design refers to the obligation of the controller to implement appropriate technical and organizational measures, such as pseudonymization, which are designed to implement data protection

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

32

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

principles, such as data minimization, in an effective manner and to integrate the necessary safeguards into the processing.

Privacy by default means that the controller shall implement appropriate technical and organizational measures for ensuring that only personal data which are necessary for each specific purpose of the processing are processed. That obligation applies to:

- the amount of personal data collected,
- the extent of personal data processing,
- the period of personal data storage, and
- the accessibility of personal data.

In particular, such measures shall ensure that by default personal data are not made accessible without the individual's intervention to an indefinite number of natural persons.
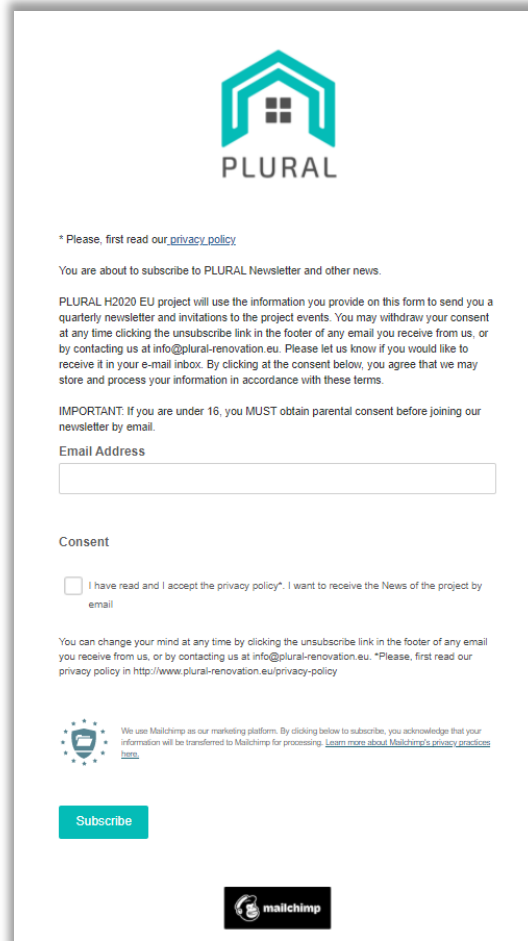
Personal data collected during the PLURAL project will be used only by project partners, including linked third parties, and only for purposes needed for the implementation of the project. Also, within the PLURAL project, if someone of the project consortium asks for personal data, the partner holding the data should consider whether those data are needed for the implementation of the Project. If personal data are provided, the data shall not be distributed further within or outside the Project.

12.8   Records of processing activities

Records of data processing and plans for the use of data will be kept by the WP Leaders of those work packages that collect personal data.

12.9   PLURAL Privacy policy

Due to the fact that the PLURAL website contains a newsletter subscription form and the PLURAL project will be processing personal data from the subscribers, a Privacy policy for PLURAL project has been created. It can be found on the following link https://www.plural-renovation.eu/privacy-policy and is present in the newsletter subscription sign-up.

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

www.plural-renovation.eu

FIGURE 9: PLURAL NEWSLETTER SIGN-UP FORM

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

34

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

13. Data summary of the PLURAL project

Expected research data of the PLURAL Project are listed in the table below. The table template will be circulated periodically in order to monitor the data sets and set the strategy for their sharing.

13.1 WP1: Residential building requirements for fast-low cost & NZEB deep renovation with PnUs – KPIs

TABLE 3: DATA SUMMARY OF THE PLURAL PROJECT

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
NTUA	T1.1: Building typologies – linked to all-in-one and off-site prefabrication requirements – High impact market segments	M1—M3	NTUA	PLURAL_[D1.1]_[1.0]_[NTUA]_[2020-12-31]	Definition of most representative residential building typologies in European countries/regions in terms of building geometry, climatic zones and energy performance characteristics, which are strong candidates for the implementation of the PLURAL concept (NZEB, low cost, fast off-site prefabrication).	PDF	PU
	T1.2 Technical and Market Codes	M4–M12	NTUA	PLURAL_[D1.2]_[X.X]_[NTUA]_[YYYY-MM-DD]	Review of system compliance with EU and country specific building regulations and codes (e.g., in relation to façade structural design, structural/wind load bearing, energy performance, fire safety, acoustics)	PDF	PU
	T1.3 Certifications strategies and requirements	M13–M24	ITeC	PLURAL_[D1.3]_[X.X]_[ITeC]_[YYYY-MM-DD]	Mapping of certification strategies to cover both the complete PnU systems as well as the non-commercial components of the all-in-one system.	PDF	PU
	T1.4: Legal, Ethical, Privacy Monitoring and Review	M13-M18	PA	PLURAL_[PRIVACY]_[PA]_[YYYY-MM-DD]	Report revising contents of D11.1, D11.2 and D11.3	PDF	CO
	T1.5: Key Performance Indicators	M7-M18	NTUA	PLURAL_[D1.4]_[X.X]_[NTUA]_[YYYY-MM-DD]	Definition of KPIs accounting for economic, environmental, internal comfort, and renovation time criteria.	PDF	CO

	T1.6: Pilot use case definition, Demonstrator and technical requirements	M4-M12	NTUA	PLURAL_[D1.5]_[X.X]_[NTUA]_[YYYY-MM-DD]	Specification Sheets for real and virtual demonstration cases by using the in-situ data that will be provided by T7.1.	PDF	CO
	T1.7: PLURAL kits Standardization for different EU building typologies	M24-M36	PA	PLURAL_[D1.6]_[X.X]_[PA]_[YYYY-MM-DD]	Types of the EU building stock that PLURAL kits could be installed using the results of other tasks and WPs.	PDF	PU
	T1.8: Go-to-Market strategy	M24-M42	FENIX	PLURAL_[D1.7]_[X.X]_[FENIX]_[YYYY-MM-DD]	Go-to-Market strategy: Assessment of the market potential and impact of the project results, firstly establishing and focusing on the partner's exploitation network. Identification of value chains and business models based on WP8 outcome.	PDF	PU
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	Data Archiving and preservation	Back up on local PCs.	Data management Responsibilities	Ioannis Atsonios	

13.2   WP2: Selection of technologies – Integration – Design of PnU kits

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
CVUT	T2.1: Detailed architectural and structural design	M9-M15	PA	PLURAL_[T2.1]_[X.X]_[PA+ZRS]_[YYYY-MM-DD] – Architectural and structural design	BIM models of the architectural and structural design for the PnU kits	RVT, Vectorworks, DWG	CO
				PLURAL_[D2.1]_[X.X]_[PA]_[YYYY-MM-DD] – Architectural and structural design report	Deliverable Report with description and plans of the architectural and structural design for the PnU kits	PDF	CO
	T2.2: Façade panel technologies selection	M9-M15	CVUT	PLURAL_[D2.2]_[X.X]_[CVUT]_[YYYY-MM-DD] - Technologies and materials selected for the demo sites	Deliverable Report with description of the panel technology, materials, and technologies to be integrated in panel system for each demo	PDF	CO
	T2.3 Ventilation system selection	M10-M22	CVUT	PLURAL_[D2.3]_[X.X]_[CVUT]_[YYYY-MM-DD] - Ventilation systems selected for each demo site	Deliverable Report with description of the selected ventilation systems for each demonstration	PDF	CO
	T2.4: Heating and cooling technology selection	M10-M22	DAIK	PLURAL_[D2.4]_[X.X]_[DAIK]_[YYYY-MM-DD] – Heating and colling technologies selected for each demo site	Deliverable Report with description of the characteristics of the selected heat pumps and complementary systems and components selected for each demonstration site	PDF	PU
	T2.5: Energy systems integration (harvesting & storage) – PLURAL toolbox	M10-M22	NTUA	PLURAL_[D2.5]_[X.X]_[NTUA]_[YYYY-MM-DD]	Development (design – layout - component definition) of a toolbox that includes some of the crucial components of the heating/cooling systems allowing access for future maintenance and repairs	PDF	CO
	T2.6: Final design of PnU kits	M12-M24	PA		Data described in subtasks below.		

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

	T2.6.1.: PnU kit Initial Design stage	M12-M16	PA	PLURAL_[D2.6]_[X.X]_[PA]_[YYYY-MM-DD] First stage design of PnU kits	Deliverable Report showing the first stage design of the PnU kits, based on 3D models and 2D drawings	PDF, IFC, DWG	CO
	T2.6.2: PnU kit Final Design stage	M22-M24	PA	PLURAL_[D2.7]_[X.X]_[PA]_[YYYY-MM-DD] Final stage complete design of PnU kits	Deliverable Report showing the final stage design of the PnU kits	PDF	CO
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	EMDESK, UCEEB Sharepoint, no local PC copies	**Data management Responsibilities**		Jan Vcelak	

13.3   WP3: Smart control of the PnU components

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
IREC	T3.1: Definition of requirements for PnU smart control with embedded intelligence	M4-M12	IREC	PLURAL_[D3.1]_[1.0]_[IREC]_[YYYY-MM-DD]	Requirements for PnU smart control. The first version of the deliverable will be mainly focused on technologies requirements for control and the monitoring for assessment needs description.	PDF	PU
				PLURAL_[D3.1]_[2.0]_[IREC]_[YYYY-MM-DD]	Requirements for PnU smart control. The final version of the document will describe the different control schemes and the detailed vision on the monitoring schemes for implementation, both demo case by demo case	PDF	PU
	T3.2: Building and assets data management	M6-M18	INTRA	PLURAL_[T3.2]_[X.Y]_INTRA_[YYYY-MM-DD]	Data files in the appropriate format for entering into the appropriate storage system (relational, No-SQL, or streaming data system)	SQL, JSON	CO
	T3.3.1: Definition of reference buildings	M8-M20	SPF	PLURAL_[D3.3]_[1.0]_[SPF]_[YYYY-MM-DD]	Report on reference buildings and system simulation framework	PDF	CO

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

38

	T3.3.2: System simulation framework	M8-M20	SPF	PLURAL_[pytrnsys] _[YYYY-MM-DD]	Python framework for Trnsys simulations (whole energy system, Trnsys dll's, GUI), available via GIT Hub (open access)	Software	PU
	T3.3.3: Self-detecting algorithms	M8-M20	NTUA	PLURAL_[D3.4]_[1.0]_[IREC]_[YYYY-MM-DD]	Smart energy management (SEM) algorithms. Set of algorithms to ensure the optimal functioning of the HVAC and RES systems, considering different energetic, economic and/or comfort strategies.	Python scripts	CO
	T3.4.: Adaptation of the Smart Energy Management (SEM) analytics	M13-M24	IREC	PLURAL_[AdaptedSE M]_[YYYY-MM-DD]	Adapted to case SEM algorithms, considering the different Plural demo cases and its communication with Lysis platform	Algorithms/ Python scripts	CO
	T3.5.: SEM implementation, systems test adaptation and validation under theoretical conditions	M21-M30	IREC	PLURAL_[D3.5]_[1.0]_[IREC]_[YYYY-MM-DD]	Smart energy management (SEM) system prototype. Definition in how implement or communicate the related algorithms in/with the LYSIS/MODEST platform	PDF	CO
				PLURAL_[D3.6]_[1.0]_[IREC]_[YYYY-MM-DD]	Validation of the SEM system through simulation case studies. Set of validation analysis of the SEM algorithms considering virtual demo cases.	PDF	PU
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Back up on local PCs.	**Data management Responsibilities**		Jordi Pascual jpascual@irec.cat	

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

13.4   WP4: Optimization of PnU components – prototyping – testing

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
AMS	T4.1.: PnU components optimization – Main systems	M6-M18	AMS	PLURAL_[D4.1]_[X.X]_[AMS]_[YYYY-MM-DD]	Optimization of the individual PnU components and building elements targeting on the windows' technology, the sound insulators, the 3d printed elements and the fire protection. Also, optimization of the PnU kit prototypes.	PDF	CO
				PLURAL_T4.1Windows_[YYYY-MM-DD]	Optimization of the windows' physical properties (e.g., type, dimensions, functionalities, glazing, sills) and of the windows' installation properties (window-frame fixings and joint fillers). Testing of the windows' performance (water / air tighten tests) and addressing of thermal bridges (IR images).	PDF/ DOCX/ DWG/ XLS/ JEPG/ PNG	CO
				PLURAL_T4.1 Sound Reduction_[YYYY-MM-DD]	Market research and evaluation of commercial sound insulators and testing of their acoustic properties.	PDF/ DOCX/ XLS/ JEPG/ PNG	CO
				PLURAL_T4.1 3d Printed Elements_[YYYY-MM-DD]	Market research and evaluation of 3d printing materials and sample prototypes for testing their properties.	PDF/ DOCX/ XLS/ JEPG/ PNG	CO
				PLURAL_T4.1 Fire Protection_[YYYY-MM-DD]	Implementation of passive and active fire protection measures on possible fire sensitive elements of the PnU kits.	PDF/ DOCX/ XLS	CO
	T4.2.: PnU components optimisation – "add-ons"	M8-M18	AMS	PLURAL_[D4.2]_[X.X]_[AMS]_[YYYY-MM-DD]	Investigation of multifunctional coatings (anti-algae, anti-bacterial, anti-reflective, self-healing, with or without PCM's) and formulation of new synthesis. Testing of commercial filtration types and optimization of the AHU's acoustic properties.	PDF	CO

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

				PLURAL_4.2 Multifunctional coatings_[YYYY-MM-DD]	Testing of various coating's additives and formulation of new synthesis suitable for the Plural kits.	PDF/ DOCX/ XLS/ JEPG/ PNG	CO
				PLURAL_4.2 Filtration_[YYYY-MM-DD]	Market research and evaluation of commercial filtration systems and testing of the most suitable for the PnU kits.	PDF/ DOCX/ XLS	CO
				PLURAL_4.2 AHU_[YYYY-MM-DD]	Modifications of the AHU and/or panel for better acoustic properties.	PDF/ XLS	CO
	T4.3: PLURAL toolboxes	M6-M18	NTUA	PLURAL_[D4.3]_[X.X]_[NTUA]_[YYYY-MM-DD]	Pre-assembled toolbox with control system	PDF	CO
	T4.4.: PnU kit prototypes	M15-M19	BGTC	PLURAL_[D4.4]_[X.X]_[BGTC]_[YYYY-MM-DD]	Manufacturing of the three PnU kit prototypes suitable for the three demo building requirements.	Demonstrator	CO
	T4.5.: PnU kit testing campaign	M12-M24	NTUA	PLURAL_[D4.5]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report on the mechanical, thermal, fire, acoustic performance of indicative PnU kits and their components	PDF	PU
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Backup of data on server of AMS	**Data management Responsibilities**		Maria Pappa Agi Georgi	

www.plural-renovation.eu

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

13.5 WP5: IT renovation tools-BIM based LYSIS platform and Multi-objective Decision Support Tool (MODEST) for fast and low cost deep renovation

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
INTRA	T5.1.: Creation of BIM components and database	M7-M18	ITeC	PLURAL_[D5.3]_[X.X]_[ITeC]_[YYYY-MM-DD]	BIM Library	IFC PDF XLS	PU
	T5.2.: Development of LYSIS modules for Component long term Global environmental impact, cost for energy use and improvements to IEQ, comfort and health (LCA/LCC)	M13-M19	INTRA	PLURAL_T5.2_[X.Y]_INTRA_[YYYY_MM_DD]	BIM data needed for the building design decision support; related comma separated values files, properties file, JSON documents, SQL backup files.	IFC, ifcXML, CSV, Properties files, JSON, SQL	CO
	T5.3: LYSIS platform: Integration, implementation, validation of data interoperability platform inter-connecting the PLURAL tools	M9-M20	INTRA	PLURAL_T5.3_[X.Y]_INTRA_[YYYY_MM_DD]	yaml and other properties files for the deployment and integration of the various components, SQL scripts etc.	JSON, plain-text, properties files, SQL	CO
	T5.4.: Development of Multi-Objective and multi-criteria Decision Support Tool (MODEST) for the selection of refurbishment solutions taking into account end user needs and requirements	M20-M24	INTRA	PLURAL_T5.4_[X.Y]_INTRA_[YYYY_MM_DD]	Properties files, drl files, java class files, pom xml files describing MODEST setup and initialization.	DRL, CSV, TXT, yaml, xml	CO
	T5.5.: Pilot deep retrofit methodology and planning	M18-M24	ITeC	TCQ databases, BIM libraries and IFC files	TCQ databases are access databases (.MDB) related to construction processes with embed information about prices, dimensions, environmental impacts, QA/QC controls and H&S particularities etc.)	MDB (Access MS) IFC	CO

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

					BIM libraries associated to digital model (design, construction, AsBuilt phase) IFC (interoperable format of digital model) enriched with data of design/construction processes treated and managed with TCQ.		
	T5.6.: Development of Use-Cases (end-to-end process) for the validation of the developed IT tools LYSIS-MODEST platform	M18-M30	INTRA	PLURAL_T5.6_[X.Y]_INTRA_[YYYY_MM_DD]	Use-Cases are described mostly via text tools and are accompanied with relatively poor UML graphics. We shall mainly develop Word documents and shall accompany them with UML Use-Case diagrams and Activity Diagrams wherever necessary.	DOC, PDF, (Star-UML) MDJ model files.	CO
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Backup of data on INTRA's server (e.g., Hetzner cloud provider)	**Data management Responsibilities**	Ioannis.Christou@intrasoft-intl.com		

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

13.6 WP6: Manufacturing & Assembly of PnU kits

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
DEN	T6.1.: Manufacturing methodology and planning	M18-M26	DEN	PLURAL_[D6.1]_[X.X]_[DEN]_[YYYY-MM-DD]	Document reporting the manufacturing methodology and planning Of the PnU kits.	PDF	CO
	T6.2.: Assembly methodology and planning	M18-M26	DEN	PLURAL_[D6.2]_[X.X]_[DEN]_[YYYY-MM-DD]	Document reporting the assembly methodology and planning.	PDF	CO
	T6.3: Quality Assurance Plan during manufacturing/assembly (Q.A.P)	M20-M36	BGTC	PLURAL_[D6.3]_[X.X]_[BGTC]_[YYYY-MM-DD]	Report including Quality Assurance Plan (Q.A.P) by each manufacturer.	PDF	CO
	T6.4.: Installation and in-situ validation methodologies	M23-M29	BGTC	PLURAL_[D6.4]_[X.X]_[BGTC]_[YYYY-MM-DD]	Report describing installation methods and requirements for real and virtual demonstrators.	PDF	PU
	T6.5.: Future industrialization of PnU kits - guidelines	M30-M36	FENIX	PLURAL_[D6.5]_[X.X]_[FENIX]_[YYYY-MM-DD]	Report assessing the future industrialization potential of the PLURAL solutions and PnU kits.	PDF	PU
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	Data Archiving and preservation		TWO INFO STORES: EMDESK PLURAL DENVELOPS DROPBOX	Data management Responsibilities	Jaume Colom jaumec@denvelops.com	

13.7 WP7: Real and virtual building demonstration. Pre-and post-renovation monitoring and assessment. Validation of PLURAL solutions

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
PA	T7.1.: Buildings' survey and preliminary design	M3-M9	PA	PLURAL_[T7.1_3Dscanning]_[YYYY-MM-DD]	Point cloud of 3D scanning obtained by real demo buildings	RCP	CO
				PLURAL_[D7.1_BIMmodels]_ [X.X]_[PA+ZRS]_[YYYY-MM-DD]	BIM models of the actual state of the demo buildings + preliminary design	RVT, Vector works	CO
				PLURAL_[D7.1_Building surveys]_[YYYY-MM-DD]	Detailed building surveys of the real demo buildings	DWG, PDF	CO
	T7.2.: Installation of PLURAL system in KASAVA (Czech Republic) real demo case	M30-M34	SPF	PLURAL_[D7.2]_[X.X]_[SPF]_[YYYY-MM-DD]	Report on the installation phase of the demo	PDF	CO
	T7.3: Installation of PLURAL system in Terrassa-Barcelona (Spain) real demo case	M30-M34	PA	PLURAL_[D7.3]_[X.X]_[PA]_[YYYY-MM-DD]	Report on the installation phase of the demo, including photo and video documentation and project documentations based on BIM models	PDF	CO
	T7.4.: Installation of PLURAL system in Voula-Athens (Greece) real demo case	M30-M34	AMS	PLURAL_[D7.4]_[X.X]_[AMS]_[YYYY-MM-DD]	Analytical report on the installation of Plural System in Greek real demo with photos showing the implementation of the different technological components step by step. Post installation tests performed by the manufacturers and validation of the correct implementation of the Plural System according to the defined requirements.	PDF	CO
				PLURAL_T7.4 Supplementary Material_[YYYY-MM-DD]	Photos and videos taken during the whole procedure of the implementation of the Plural System in the Greek real demo.	MPG4/ JEPG/ PNG	CO

				PLURAL_T7.4 Post Installation-Gallery_[YYYY-MM-DD]	Photos and videos taken after the installation of the Plural System in the Greek real demo.	MPG4/ JEPG/ PNG	PU
				PLURAL_T7.4 Post Installation_[YYYY-MM-DD]	Post installation tests and validation of the correct implementation of the Plural System in the Greek demo building.	PDF/ XLS/ JEPG/ PNG	CO
	T7.5.: PLURAL systems installation at virtual demo buildings – Energy performance modelling for all demo cases	M13-M34	SPF	PLURAL_[EnergySimulationData]_[YYYY-MM-DD]	Text files with simulation results (timestep data)	CSV	PU
	T7.6.: Monitoring campaign	M13-M46	IREC	PLURAL_[VVVMonitoring Data] [AMS]_YYYY-MM-DD]	Text files with monitoring data from the VVV-Greece demonstration building (AMS, NTUA)	CSV	CO
	T7.7.: Technical viability assessment of PLURAL solutions in real and virtual cases based on LYSIS-MODEST	M35-M48	FENIX	PLURAL_[D7.6]_[X.X]_[PA]_[YYYY-MM-DD]	Validation of PLURAL systems based on "active" indicators defined/evaluated in T7.7	PDF	PU
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Emdesk and local server of Pich Architects with regular backup of the data.	**Data management Responsibilities**		Zuzana Prochazkova (Pich Architects)	

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

13.8 WP8: Market and Business Oriented Exploitation

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
ITeC	T8.1.: Environmental, Cost and Social impact Assessment of PnU kits	M19-M42	ITeC	PLURAL_[D8.1]_[X.X]_[ITeC]_[YYYY-MM-DD]	Product requirement Report (PnU Kits and LYSIS-MODEST)	PDF	PU
				PLURAL_[D8.2]_[X.X]_[ITeC]_[YYYY-MM-DD]	Environmental Assessment of PnU kits	PDF	PU
	T8.2.: Standardization and Certification activities; Support in the revision of the LCA standard	M32-M47	ITeC	PLURAL_[D8.3]_[X.X]_[ITeC]_[YYYY-MM-DD]	Structure of the digital standard	PDF	PU
				PLURAL_[D8.5]_[X.X]_[ITeC]_[YYYY-MM-DD]	Product appraisal Report (PnU kits and LYSIS-MODEST)	PDF	CO
	T8.3: Business model for PLURAL solutions and PnU kit appraisal report	M24-M36	FENIX	PLURAL_[D8.4]_[X.X]_[FENIX]_[YYYY-MM-DD]	Business model addressing cost-optimal aspects for representative building typologies and climate conditions across Europe.	PDF	CO
	T8.4.: Business Case analysis and assessment	M25-M42	FENIX	PLURAL_[D8.6]_[X.X]_[FENIX]_[YYYY-MM-DD]	Report assessing the financial viability of the individual PLURAL technologies and the PnU kits and establish the relevant business case.	PDF	CO
				PLURAL_[D8.7]_[X.X]_[FENIX]_[YYYY-MM-DD]	Preliminary Analysis of market and its potential	PDF	PU
	T8.5.: Exploitation, Innovation and IPR Management	M6-M48	FENIX	PLURAL_[D8.8]_[X.X]_[FENIX]_[YYYY-MM-DD]	Initial Exploitation Plan and IPR manual; Identification of potential exploitation strategies at Consortium level, preliminary list of exploitable results, ownership and individual strategies.	PDF	CO
				PLURAL_[D8.9]_[X.X]_[FENIX]_[YYYY-MM-DD]	Final Exploitation Plan and IPR strategy: Final list of exploitable results, ownership and individual	PDF	CO

www.**plural-renovation.eu**

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

					strategies including follow-up actions		
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**		Regular backup of data on server, managed by IT department	**Data management Responsibilities**		Diana Romeu (ITeC)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958218

48

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

13.9 WP9: Dissemination, Communication and Training

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
FENIX	T9.1.: Dissemination and Communication	M1-M48	FENIX	PLURAL_Project website_[YYYY-MM-DD]	Project website design, main communication channel between the project and wide public, link to social network profiles, twitter feed online, e-newsletter subscription, project introduction, public documents, news and events, cluster projects, partners, contacts	.html	PU
				PLURAL_[D9.1]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report on the project website.	PDF	PU
				PLURAL_Promo materials_[YYYY-MM-DD]	Promo materials including images, brochures, rollups, posters, project presentation designs, promo videos, images and logos from project partners, photos/videos from dissemination events, project promo videos consisting of animated graphical images, filming, voice-over and music, promo materials shared online, newsletters, etc. The owner gives permission to FENIX to use images for dissemination purposes of PLURAL	EPS/ JEPG/ PNG/ MPEG/ AVI/ MP4/ PDF	PU
				PLURAL_[D9.2]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report on Promo materials purposes of PLURAL	PDF	PU
				PLURAL_[D9.3]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report identifying target audiences, key messages, communication channels, roles, and timelines	PDF	PU
				PLURAL_[D9.5]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report - Final evaluation of the Communication and Dissemination plan workshops and awareness campaign	PDF	PU

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

	T9.2.: Data Management	M1-M48	FENIX	PLURAL_[D9.4]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report analysing the main data uses and restrictions related to IPR according to the Consortium Agreement	PDF	PU
	T9.3: Training Activities	M24-M48	NTUA	PLURAL_Training Materials_[YYYY-MM-DD]	Datasheets, videos for training purposes (webinars, workshops, social profiles)	PDF/ MPG4	PU
				PLURAL_[D9.6]_[X.X]_ [FENIX]_[YYYY-MM-DD]	Report on training materials.	PDF	PU
	T9.4.: Advisory Board	M1-M48	FEN	No expected datasets	No expected datasets	N/A	N/A
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Regular backup of data on server, managed by IT department	**Data management Responsibilities**		Petra Colantonio, FENIX	

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

13.10 WP10: Project coordination and management

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
NTUA	T10.1.: Project coordination and management	M1-M48	NTUA	PLURAL_[D10.3]_[1.0]_[NTUA]_[2021-04-30]	Report on the scientific progress of the project during M1-M6 per WP, overview of dissemination and management activities. Plan for the next six months	PDF	CO
				PLURAL_[D10.4]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report on the scientific progress of the last six months (M7-M12) per WP, overview of dissemination and management activities (meetings, minutes of meetings, consortium updates, and overview of financial data). Plan for the next six months	PDF	CO
				PLURAL_[D10.5]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report on the scientific progress of the last six months (M19-M24) per WP, overview of dissemination and management activities (meetings, minutes of meetings, consortium updates, and overview of financial data). Plan for the next six months	PDF	CO
				PLURAL_[D10.6]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report on the scientific progress of the last six months (M30-M36) per WP, overview of dissemination and management activities (meetings, minutes of meetings, consortium updates, and overview of financial data). Plan for the next six months	PDF	CO
				PLURAL_[D10.7]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report on the scientific progress of the last six months (M37-M42) per WP, overview of dissemination and management activities (meetings, minutes of meetings, consortium updates, and overview of financial data). Plan for the next six months	PDF	CO
	T10.2.: Managing contractual and administrative issues	M1-M48	NTUA	No expected datasets	No expected datasets	N/A	N/A
	T10.3: Risks mitigation and management	M1-M48	FENIX	PLURAL_[D10.1]_[X.X]_[FENIX]_[2021-03-30]	Report on the management of upcoming relevant IP (patents, scientific publications, commercial products).	PDF	CO

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

www.plural-renovation.eu

	T10.4.: Project management meetings	M1-M48	NTUA	PLURAL_[D10.2]_[X.X]_[NTUA]_[YYYY-MM-DD]	Report with the compilation of the Minutes of annual project and review meetings.	PDF	CO
	T10.5.: Consortium communication and monitoring	M1-M48	NTUA	PLURAL_[D10.2]_[X.X]_[NTUA]_ [YYYY-MM-DD]	Report with the compilation of the Minutes of annual project and review meetings.	PDF	CO
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Back up on local PCs.	**Data management Responsibilities**		Maria Founti	

13.11 WP11: Ethics requirements

WP lead	Task number and name	Duration	Task lead	Dataset name	Dataset description	Format	Level
NTUA	N/A	M1-M48	NTUA	PLURAL_[D11.1]_[1.0]_[NTUA]_[2020-12-31]	Report analysing the procedures and criteria that will be used to identify/recruit research participants. These include the templates of the informed consent forms and information sheets.	PDF	CO
				PLURAL_[D11.2]_[1.0]_[NTUA]_[2020-12-31]	Report proving explanations on a) how all of the data the project intends to process is relevant and limited to the purposes of the research project (in accordance with the 'data minimisation 'principle); b) description of the technical and organisational measures that will be implemented to safeguard the rights and freedoms of the data subjects/research participants; c) detailed information on the informed consent procedures with regards to data processing; d) anonymisation /pseudonymisation techniques that will be implemented; e) how the data subjects will be informed of the existence of	PDF	CO

www.plural-renovation.eu

Deliverable:	D9.4
Version:	1.0
Due date:	30/04/2021
Submission date:	29/04/2021
Dissem. lvl:	Public

				profiling, it's possible consequences and how their fundamental rights will be safeguarded.		
			PLURAL_[D11.3]_[1.0]_[NTUA]_[2020-12-31]	Report that provides information on environmental protection and safety and explanations on the following issues Possible harm to the environment caused by the research and the measures that will be taken to mitigate the risks must be submitted as a deliverable. Health and safety procedures conforming to relevant local/national guidelines/legislation that are followed for staff involved in this project. Copies of authorizations for relevant facilities (e.g., safety/security classification of laboratory, etc.)	PDF	CO
Data Sharing	All public documents will be shared on PLURAL project website and ZENODO, confidential reports on EMDESK	**Data Archiving and preservation**	Back up on local PCs.	**Data management Responsibilities**	Maria Founti	

www.plural-renovation.eu

Deliverable: D9.4
Version: 1.0
Due date: 30/04/2021
Submission date: 29/04/2021
Dissem. lvl: Public

14. Publications

The PLURAL Consortium is willing to submit papers for scientific/industrial publication during the PLURAL Project. In the framework of the Dissemination and Communication Plan agreed by the GA, R&D partners are responsible for the preparation of the scientific publications, while the Steering Committee is responsible for review and final approval.

As a general approach, the R&D partners are responsible for the scientific publications as well as for the selection of the publisher considered as more relevant for the subject of matter. Each publisher has its own policies on self-archiving:

Green open access: researchers can deposit the final version of their published article (peer-reviewed manuscript) into a subject-based repository or an institutional repository before, after or alongside its publication. Access to this article is often delayed (embargo period). Publishers recoup their investment by selling subscriptions and charging pay-per-download/view fees.

Gold open access: author pays publishing, a publication is immediately provided in open access mode by the scientific publisher. Associate costs are shifted from readers to the university or research institute to which the researcher is affiliated, or to the funding agency supporting the research. (e.g., http://www.springer.com/gp/, https://www.elsevier.com/, https://www.oasis-open.org/, http://www.sherpa.ac.uk/romeo/index.php)

After the paper is published and license for open access in obtained, R&D partner will contact Dissemination and Exploitation Leader (FENIX), who is responsible for PLURAL data management, and FENIX will upload the publication into PLURAL project website and deposit the publication in the OpenAIRE or Zenodo repository indicating the project it belongs to in the metadata.

For adequate identification of accessible data, all the following metadata information will be included:

- Information about the grant number, name and acronym of the action: **European Union (UE), Horizon 2020 (H2020), Research Innovation Action (RIA), PLURAL acronym, GA N° 958218.**
- Information about the publication date and embargo period if applicable: **Publication date, Length of the embargo period**.
- Information about the persistent identifier (for example a **Digital Object Identifier**, DOI), if any, provided by the publisher (for example an **ISSN number**).

15. PLURAL Data Management Plan Progress

The following table lists datasets shared publicly until month 7.

TABLE 4: **PLURAL** PUBLICLY SHARED DATASETS

WP	Dataset name	Lead partner	Format	Type	Data sharing	Open access	DOI	Links
WP1	T1.1: Building typologies – linked to all-in-one and off-site prefabrication requirements – High impact market segments	NTUA	.pdf	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/documents/deliverables
WP9	PLURAL_Project website_[2020-12-15]	FENIX	.html	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/
	PLURAL_logos_[2020-12-14] PLURAL_logo manual_[2020-12-14]	FENIX	.png .pdf .eps	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/documents/promo-materials/logos
	PLURAL_roll-up_[2021-01-28]	FENIX	.pdf	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/documents/promo-materials/posters
	PLURAL_leaflet_[2021-01-28]	FENIX	.pdf	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/documents/promo-materials/leaflets
	PLURAL_project presentation_[2021-03-05]	FENIX	.pdf	PU	PLURAL website public	Yes	N/A	https://www.plural-renovation.eu/documents/promo-materials/presentations
Publications	Dataset name	Lead partner	Format	Type	Data sharing	Open access	DOI	Links

16. Conclusion

This report contains the first release of the Data Management Plan for PLURAL project, and it provides preliminary guidelines for the management of the project results during the project and beyond. The Data Management related to the data generation, storage and sharing have been addressed.

At month 7, more detailed information about the dataset description, sharing, archiving, preservation and responsibilities were updated by each WP leader and outcomes can be seen in chapter 13 (table 5). PLURAL data which were already shared publicly including data with open access are listed in chapter 15 (table 6) with links where they can be accessed and downloaded.

The report will be subject to revisions as required to meet the needs of the PLURAL project and will be formally reviewed at month 18, 36 and at the end of the project to ensure ongoing fitness to the purpose.

17. References

[1] Guidelines on Data Management in Horizon 2020: https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf