

Project and Data Management Plan D1.1



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¹PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)

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Project and Data Management Plan

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Disclaimer

This document is partly based on the EC's official documents and profound knowledge of guidelines and ways of working in Horizon Europe. While guidelines on administration and reporting are as much as possible the same as the official documents, adjustments have been made with logical build-up and readability in mind. However, no legal responsibility can be taken for the contents in this document. If in doubt with an issue, please consult the official documents, or ask IFE, who will ask for an official EC response if necessary.

List of Abbreviations

PMP: Project Management Plan

DMP: Data Management Plan

CoP: Community of Practice

CS: Case Study

CTG: Cross Cutting Technology Group

DMP: Data Management Plan

DOI: Digital Object Identifiers

EC: European Commission

FAIR: Findability, accessibility, interoperability, and reusability

FOAF: Friend of a Friend

GDPR: General Data Protection Regulation

ICT: Information and Communications Technology

KPI: Key Performance Indicator

OGC: Open Geospatial Consortium

PM: Person Month

SNS: Social Networking Sites

TEB: Technology Evidence Base

URL: Uniform Resource Locator

UTF: Unicode Transformation Format

WP: Work Package

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Executive Summary Deliverable

The aim of the Project and Data Management Plan report is to serve as a reference document for beneficiaries while executing the HOCLOOP project, and to provide an analysis of the main elements of the data management policy.

1. Introduction

1.1. Purpose of this document

The purpose of the Project and Data Management Plan is:

- **To serve as a reference document for beneficiaries while executing the HOCLOOP project (SECTION 2 of this document).** By acting as a master plan and summarizing all components needed to successfully implement the project in its entirety, the Implementation Plan operationalizes the Grant Agreement by translating it into a practical, hands-on guide for all project partners. It provides guidelines for administering, monitoring, and reporting following the EC requirements stated in the Annotated Model Grant Agreement and other official program documents.
- **To provide an analysis of the main elements of the data management policy ((SECTION 3 of this document)** that will be used by the HOCLOOP project with regards to all the datasets and information that will be generated by the project. The Data Management Plan (DMP) is not a fixed document but evolves during the lifespan of the project; in fact, it functions as a dynamic document of agreements. The DMP should address the points presented below on a dataset-by-dataset basis and should reflect the updated status of reflection within the consortium about the data that will be generated, collected, stored and processed.

Approach taken

The Project Management Plan (PMP) is based on the HOCLOOP Grant Agreement, the Consortium Agreement and the project Work Plan and will be made coherent with fellow project execution documents. While these documents form the Project Implementation Plan's basis, the plan will be continuously updated throughout the project's lifetime, whenever project-internal additions and changes are made. Periodic revisions (once a year) will be made to the document based on the experiences during project execution. These additions and changes are made by the Project Coordinator and will be administered in the Changes Log. In the case of significant changes, partners and the EC Project Officer will first be informed and consulted.

In principle, publicly funded research data are a public good, produced for the public interest that should be made openly available with as few restrictions as possible in a timely and responsible manner that does not harm intellectual property. On this basis, the DMP intends to help researchers consider at an early stage, when research is being designed and planned, how data will be managed during the research process and shared afterwards with the wider research community. Moreover, the DMP is also a prerequisite to participate under the Open Research Data Pilot

The benefits of a well-designed DMP not only concern the way data are treated but also the successful outcome of the project itself. A properly planned DMP guides the researchers first to think what to do with the data and then how to collect, store and process them, etc. Furthermore, a planning in data treatment is important for addressing timely security, privacy and ethical aspects. Considering the data lifecycle, the research data are kept in track in cases of possible staff or other changes. The DMP can also increase preparedness for possible data requests. In short, planned activities, such as implementation of well-designed DMP, stand a better chance of meeting their goals than unplanned ones.

The process of planning is also a process of communication, increasingly important in a multi-partner research. The characteristics of collaboration should be accordingly harmonized among project partners from different organizations or different countries. The DMP also provides an ideal opportunity to engender best practice with regards to e.g. file formats, metadata standards, storage and risk management practices. Thus, HOCLOOP is aligned to greater longevity and sustainability of data and higher quality standards.

In this context, the DMP is a document that not only organizes data sharing, editing and monitoring among those contributing to the project. But it also governs data and information privacy and ethical aspects of data and information storage and sharing. This DMP complements the Consortium Agreement which also regulates restrictions on data sharing and Intellectual Property Management. This DMP is modelled on the Horizon 2020 FAIR Data Management Plan (DMP) template, included as Annex 1 in the Guidelines on FAIR Data Management in Horizon 2020 (Version 3.0, 26 July 2016).

2. Project Management Plan (PMP)

2.1. Project Overview & Goals

Project Goals

The main objective is to verify a novel geothermal closed loop solution for the extraction of heat from deep or shallow formation rocks. The solution is environmentally friendly and expected to improve the cost-efficiency for geothermal developments. The solution will also enable exploiting geothermal energy sources in new regions with- or without good hydrothermal reservoirs. Examples are low-permeability reservoirs, Hot Dry Rock and other kinds of fields, such as those with high content of non-condensable gas. However, also in regions where there are hydrothermal reservoirs, the proposed system reduces the environmental impact and can prove to be preferred. The solution is expected to significantly increase the deployment of geothermal resources for trigeneration with reduced environmental impact and economic attractiveness compared to conventional geothermal plants, avoiding several issues of Enhanced Geothermal Systems (EGS). The target design is a geothermal heat exchanger that can deliver stable and cost-efficient energy for a time span of at least 50 years serving a surface district heating/cooling and power generation unit. The solution is foreseen to be integrated with other renewables to improve the reliability of the power supply and grid stability, and to be applicable to any geological structural condition and district heating.

The **High-Level Objectives** are as follows:

- HLO1: Demonstrate a novel geothermal closed loop solution for deep or shallow formation rocks.
- HLO2: Verify the capability for improved electrical energy production by use of alternative fluids to water.
- HLO3: Identify suitable applications for the solution for various underground environments in Europe.
- HLO4: Verify adaptation to surface energy utilities and environmental-, economic-, and social sustainability.

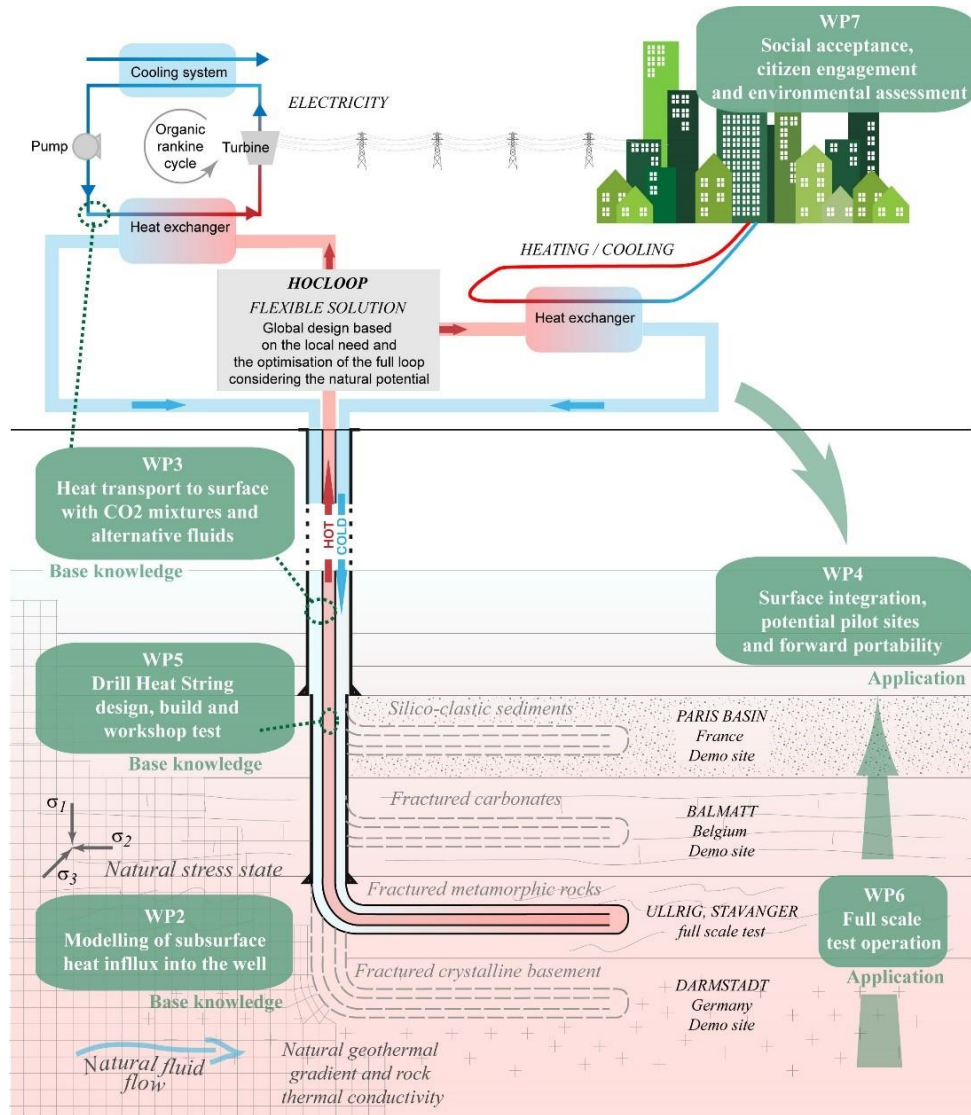
The participants of HOCLOOP and their respective roles in the project are summarized in the next table:

Participant	Participating Organization Legal Name	Short name	Role	Country
1	Institute for Energy Technology	IFE	Coordinator	Norway
2	Reelwell A.S.	RW	WP leader	Norway
3	University of Florence	UNIFI	WP leader	Italy
4	VITO - Flemish Institute for Technological Research NV	VITO	WP leader	Belgium
5	IFP Energies Nouvelles	IFPEN	Task Leader	France
6	Technical University of Darmstadt	TUD	Task Leader	Germany
7	University of Vaasa	VAASA	WP leader	Finland

8	University of Bari	UNIBA	Task Leader	Italy
9 *	The Norwegian Research Centre	NORCE	Partner	Norway

*Pending of the inclusion of this partner as participant at the moment of the submission of this deliverable,

HOCLOOP Work plan



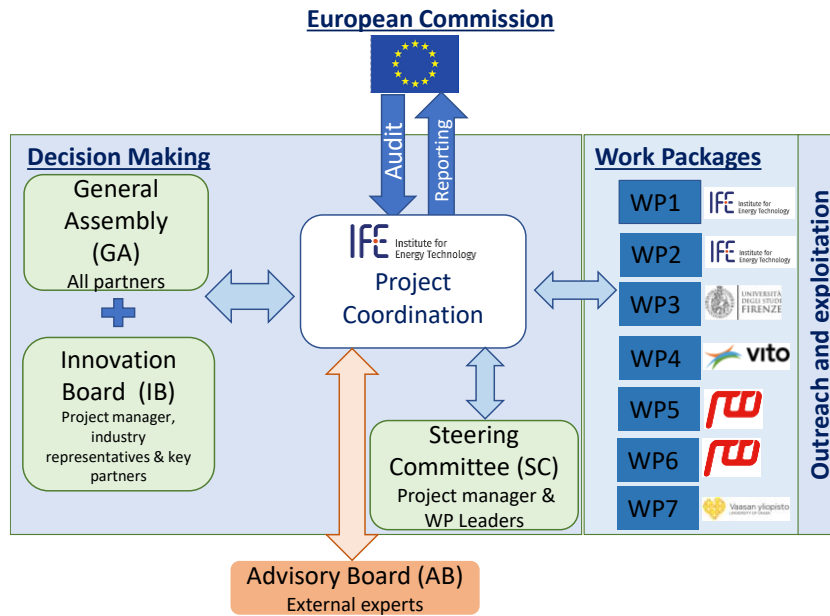
2.1.1. List of work packages and lead beneficiaries

WP	Title	Lead participant number	Lead participant short name	PMs	Start	End	Deliverables
WP1	Coordination, management and communication	1	IFE	52.5	1	42	D1.1 – Project and data management plan D1.2 – Risk Management Plan D1.3 – Annual report 1 D1.4 – Annual report. 2 D1.5 – Annual report. 3 D1.6 – Innovation exploitation and communication D1.7 – Innovation exploitation, communication and dissemination plans D1.8 – Update 1 the innovation exploitation, communication and dissemination plans D1.9 – Update 2 the innovation exploitation, communication and dissemination plans
WP2	Modelling of subsurface heat influx into the well	2	IFE	37.5	1	18	D2.1 – Benchmark cases D2.2 – Flow pipe model for fluid circulation D2.3 – Heat flow model for the closed loop system D2.4 – Optimized design for the closed loop geothermal system D2.5 – Validation of cylinder geometry based simulation of the closed loop geothermal system
WP3	Heat transport to surface with CO ₂ mixtures and alternative fluids	3	UNIFI	48	18	42	D3.1 – Report on alternative fluids characterization D3.2 – Report on heat transfer modelling and circulation within the borehole D3.3 – Optimized geometry D3.4 – Calibrated models
WP4	Surface integration, potential pilot sites and forward portability	4	VITO	81.5	1	42	D4.1 – Pilot sites data and integration analysis D4.2 – Results of underground simulations and loop optimisation at the pilot sites

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							D4.3 – Conceptual design and techno-economic feasibility study D4.4 – Pilot site documentation for future integration of HOCLOOP D4.5 – Evaluation of the HOCLOOP concept replicability in different geological contexts
WP5	Drill Heat String - design, build and workshop test	1	RW	57	1	22	D5.1 – Detailed design of the DHS and components D5.2 – Manufacturing of the DHS components for workshop testing D5.3 – Plan the workshop tests and build the workshop test arrangement D5.4 – Workshop test report of the DHS assembly and individual components
WP6	Full scale test-operation	9	IFE	42	1	42	D6.1 – Plan for the full-scale operation at Ullrigg in Stavanger D6.2 – Risk considerations, alternative back-up solutions and contingencies D6.3 – Report for the DHS, instrumentation, rig adaptation and handling tools D6.4 – Report on operation test results
WP7	Social acceptance, citizen engagement and environmental assessment	7	VAASA	47	4	42	D7.1 – Report on social acceptance D7.2 – Report on market acceptance D7.3 – Report on sustainability assessment
TOTAL				365.5			

2.2 Project Management



2.2.1 Project Management’s Structure

Project’s management structure considers both the complexity and the effort required to encompass management of knowledge, innovative and sustainable activities, intellectual property, coordination, and exploitation. Figure 1 depicts an overview of the management structure of the HOCLOOP project.

Figure 1. Management structure of HOCLOOP

2.2.2 Project Coordinator (PC)

Generally, the Project Coordination Team (PCT) shall be responsible for the planning, execution and controlling of the project. More specifically the PCT encompasses the following activities: (a) Administration and scientific coordination activities, (b) Implementation of all action plans, (c) Establishing a budget and schedule-controlling system, (d) Implementation of a quality assurance system, (e) Providing clear guidance on Intellectual Property issues, (f) Developing and maintaining a communication and reporting attitude, and (g) Creation of efficient team structures to minimize the number of meetings while being flexible.

The PCT is constituted by the Project Coordinator (PC), whose role is to be responsible for the overall management, communication, and coordination of the project. A special emphasis is to assure, in accordance with the WP Leaders, the overall integration of the single WPs and, also, to chair the TC. The PC proposes strategic orientations to consortium members and ensures fluid communication with the European Project Officer. Any information regarding the project will be propagated to the PO only through the PC, who acts as a proxy between HOCLOOP partners and EU. The details of the tasks and responsibilities assigned to the PC are described in the Grant Agreement and the Consortium Agreement (CA).

2.2.3 Technical Manager (TM)

Technical Manager (TM) will ensure that the scientific and technological objectives of the project are met. The TM will cooperate closely with the WP Leaders towards successfully concluding all the technical/technological development, integration and support tasks envisaged in the HOCLOOP work-plan.

2.2.4 Innovation – Exploitation Manager (IEM)

Innovation and Exploitation Manager (IEM) manages the execution of the overall exploitation plan of the project and supports the partners in setting up their individual business plans, in order to exploit the results of HOCLOOP. The IEM will also ensure the partners assess opportunities for applying for patents or declaring copyrights. **Innovation Management:** To successfully implement HOCLOOP’s creative ideas, an Innovation Management process is required to pave the way from concept description to

prototype development and finally to market. The focus of Innovation Management will allow responding to opportunities during the project's lifetime and use its creative efforts, to introduce novel policies in the framework of improving the overall improvement, of the RI resilience against extremes.

HOCLOOP will follow an open innovation approach, which includes cross-industry workshops, collaboration with external organizations and projects and full chain of actors presented in the process. In such approach, members of the consortium collaborate extensively in their innovation process between them, as well as involve other stakeholders. Open innovation will help to gain access to important complementary and will embrace to harvest ideas from many sources. The challenges of this approach such as finding suitable partners, developing relational capabilities, and protecting and dividing property rights will be overcome by complementary expertise of the consortium partners, by developing relations with policy and regulatory agendas, as well as Support and Implementation Alliance (SIA) and the Advisory Board (AB).

2.2.5 Dissemination and Communication Manager (DCM)

Dissemination and Communication Manager (DCM) along with the PC will monitor and coordinate communication and dissemination activities. The DCM will work closely with the IEM and the PC to achieve a balance between dissemination and exploitation considering IPR. For further details please refer to D1.6 which correspond to Innovation, Exploitation and Communication Plan.'

A regular monthly meeting has been scheduled every first Wednesday. Through this meeting each partner will report for his/her dissemination activities, summarizing and providing a whole view of HOCLOOP dissemination and communication implemented actions.

2.2.6 Quality Manager (QM)

Quality Manager (QM) will be responsible for the implementation of the quality procedures determined in the Quality Plan (QP) described in this deliverable and the verification of the project results. Main responsibilities include the development of the QP, the monitoring of the implementation of the quality procedures along the project duration, the review of the deliverables and initiating actions, reporting to the PC, when needed.

2.2.7 Technical Committee (TC)PB

The Technical Committee (TC) is the project's technology driving force and is led by the TM. TC members are permanent for the project duration, except if they wish to leave the TC themselves, or because of EU newly imposed regulations. The TC is responsible for supervising the project technological progress/achievements and submitting proposals to the Coordinator and PB upon all relevant technical issues such as: redirection of technical work in a WP, major transfer of resources across WPs or Partners (over 10%), technological choices, changes in time plans substitution or exclusion of an existing Partner, resolution of conflict between different technological WPPs. All TC members will have a single vote. In case of equal votes, the vote of the TM shall be the decisive one. This Group will meet at least, once every three months following the project status and needs. It schedules the next activities of the TC and evaluates the performance against the key performance indicators and described project objectives/milestones.

2.2.8 Work Package Leader (WPL), Task Leader (TL) and Deliverable Leader (DL)

Work Package leader. Each Word Package Leader (WPL) is responsible for the management of the corresponding work package. They are supported by the leaders of embodied tasks. Main responsibilities of a WPL can be:

- (a) the coordination of the work of the WP
- (b) plan, coordinate and harmonize the deliverable content
- (c) monitor the progress of the work in the corresponding WP
- (d) report to the PC about progress in activity and progress reports
- (e) provide both detailed theoretical knowledge and analysis of the most important technologies
- (f) organize WP meetings
- (g) coordinate the WP input/output from/to supporting partners and external parties
- (h) maintain in communication to the related work package

- (i) support the IEM in definition and implementation of the Innovation Strategy and Plan, and
- (j) support the DCM in the definition and implementation of the Communication Strategy and Plan.

Task Leader

Each Task Leader (TL) is responsible of the management of his/her tasks similarly to the work package leaders. Task Leader reports to WPL.

Deliverable Leader

Each Deliverable Leader (DL) is responsible of the management of his/her deliverables similarly to the work package leaders.

2.2.9 Other roles supporting the Coordination**Financial Advisor (FA)**

This service will monitor the Annual Cost Statements, and the PMs/expenditures on a 7-month basis due to the 14 -month reporting period and provide feedback to the partner, the PC, and the QM. Templates will be provided for scheduling and reporting and training will be provided.

External Relations (ER)

This is an independent service, administered by the dissemination manager, that will receive all external requests (i.e. questions on project concept and results through the Internet, relation to the Press and the Media), including follow-up of concentration activities with other projects and of activities of relevant standardizations bodies and International Fora.

Advisory Board (AB)

In order to maximize user influence on project developments at all levels, an Advisory Board (AB) has been set up. According to GDPRs, the contact details will remain confidential for public audience and will not be released in this report.

2.3 Project Communication and Contribution among Partners

Emails and voice-call communication are the traditional means for communication. Additional means to facilitate internal communication and collaboration among the members of the consortium were considered: (a) project distribution mailing lists, and (b) meetings (due to COVID-19 audio-visual meetings are allowed).

The information about the contribution of each partner in the HOCLOOP project, as defined in the Grand Agreement.

2.3.1 Communication of the consortium

The Information flow within HOCLOOP will be ensured by the exchange of the internal technical and business documents, the notification of relevant new publications in literature, or by the standard bodies and the reports from external meetings. All technical documentation will be exchangeable in electronic format, according to a set of guidelines that have been described in the QP (guidelines for naming and classification) in below sections. A web project document repository (SharePoint1) has already been made by IFE team. Telephone and fax can be used for urgent needs only. Urgent correspondence over e-mail will be sent with a request for explicit acknowledge. Ordinary mail will be used for strictly formal correspondence, i.e. when executing signatures are required. Adherence to the agreed communications standards will be enforced by the PC and the QM.

2.3.2 Mailing Lists

Except from the communication methods described above and using experience from other projects, a mailing list management system can help all members of the consortium to address their questions and proposals to the right member(s).

A set of safety mechanisms are applied:

- A non-list member can send a mail to any list, but it will not be delivered until the list moderator(s) approve it.
- Un-subscription from a list is possible either automatically or by informing the moderator(s).
- Mailing lists members are updated frequently, according to WP needs.

Also, the following rules aim at ensuring a certain level of efficiency in the communication through project mailing lists system:

- The questions and comments need to be relevant to the focus of the discussion group. Paragraphs and messages need to be as short as possible and to the point.
- Forwarding or re-posting messages needs not to be changed. If the message is a personal message, it is advised asking for permission first.
- For any disagreement between two or more (but few) members of a list, it is advised to discuss using private messaging, rather than sending messages to the list. If the debate reaches to a point on which the whole group might have some interest, then a summary mail will suffice. Also, if the disagreement can't be solved and it might have an impact on the the deliverable, Conflict Resolution section explains the proper way of solution.

2.3.3 Meetings

The project meetings can be categorized according to the following categories:

- Kick-off meeting for planning the initial work for each WP. Their scope is to serve, to debate, and discuss the relevant topics, to address ongoing activities and to plan the work for the subsequent period with all project partners and EU representatives as participants.
- WP progress meetings will be held to monitor and verify the work progress of their respective WP. These meetings will help update project status on a regular week basis, as well as having the opportunity to discuss technical, operational, and administrative issues on a timely fashion. Main participants are the PCT, TM, TC, and the involved partners in the WP tasks.
- WPs coordination meetings, between the leaders of each WP. These meetings are scheduled according on the current needs. Typically, they run weekly.
- Dissemination meetings, where the entire consortium will meet to discuss the results achieved during the event and share the knowledge with the community. These are performed once per month.
- Clustering meetings, for organizing and evaluating the activities during these meetings for HOCLOOP cities scenarios. Involved are the PCT and TM committee, the cities representatives in HOCLOOP and the external participants. Clustering meetings may occur within cities members, if necessary, their results are published to the HOCLOOP consortium.
- Project review meetings, based on Grant Agreement for project evaluation between HOCLOOP consortium and EC representatives and external reviewers. These will be appointed by the Project Officer, who will evaluate the project execution and progress towards the objectives declared in the DoW.

The PCT will meet every four to six months to monitor project progress, WP meetings will also be realized every three or four months, in most cases combined with PCT meetings, or organized workshops. WP meetings may take place whenever required through telco. All face-to-face meetings arrangements initiated by partners will be communicated to the PCT in advance, which will undertake to optimize the timing and location of meetings, by organizing more than one meeting in parallel, thus minimizing travel costs.

Face to face meetings will be the priority when possible. However, due to the previous experience with COVID-19 pandemic exceptions may occur for meetings if new measures are implemented by national and/or local authorities. Then related face to face meetings according on GA and project schedule will be performed. However, technology provides a solution to this problem without affecting the consortium and the project progress. The consortium is using Microsoft Teams® for organizing online audio-visual meetings (e.g. PowerPoint presentations, discussions about deliverables, kick-off meetings, workshops, etc.). As already the project is running in M3, the partners have been coordinated to perform the teleconferences following the below schedule:

- Every six months a digital plenary meeting of HOCLOOP consortium is performed.
- Every week, the WP leaders will meet for short strategic discussions about the project and technical, research, and dissemination issues. In case that any of the WP leaders cannot join (due to a last-minute commitment), then the PC will try to fix the telco, either the week before, or the week after (on the same day and time).

- Every week the WP Leader can organize teleconferences for achieving and control the WP progress and objectives. Task leaders may also ask for a meeting with the collaboration of the WP leaders.

Microsoft SharePoint (One Drive) and Teams will be the basic platforms for files/data exchange (e.g., slides, documents, etc.) and teleconferences respectively. At the end of each meeting the organizing party must provide a short report (minutes) including: i) discussed points, ii) actions decided and iii) date and topic of the event. This information will be uploaded to SharePoint repository, either under consortium meetings, or under WPs related activities, as reference for the whole consortium members. In conclusion, all consortium members should note that the Meetings frequency, their duration and structure will be constantly evaluated and changed according to project requirements, should any issue, or risk arise during the project lifetime.

2.3.4 Best practices

The following table provides a compile series of guidelines and best practices for both organizers and participants in teleconferences and face to face meetings that will enhance the consortium cooperation and giving fruitful outcomes.

Table 2. HOCLOOP face to face meetings

Entities organizing the face-to-face meeting	Entities participating in the meeting
Arrange workshop rooms, equipment and Catering	Identify the title and scope of the meeting, the duration and the preferred dates on which the workshop runs well in advance (at least 1 month) to the PC
Make available a document summarizing most important logistic information (location of meeting room, suggested hotels nearby, how to get to the building, etc.) in the corresponding event folder in the project repository	Define the optimum number and identification of participants, prepare the agenda and making sure that meeting venue, time and agenda are distributed to participants in advance (minimum 1 month).
Liaise with session participants and making sure that advance registration for the session is complete	Present an overview of the project/activity in the beginning of the meeting and prepare a final wrap up at the end summarizing conclusions and action points agreed during the meeting in all sessions.
Make sure that workshop material (e.g. booklet, sheets and pens) are adequately present	Preside over all session presentations and discussions, and drawing session conclusions.
Make sure time schedule is respected during the sessions/presentations	Ensuring the taking of minutes and put the final version of minutes in the corresponding event folder in the project repository, using the corresponding template
Contribute to the comfort of the participants (explain where to find toilets, telephones, fax machines, internet, connection, refreshments, banks and shops, etc.)	Create a short map of necessary things.

Table 3. HOCLOOP telco meetings

Entities organizing the telco call	Entities participating in the telco call
Inform participants well in advance about the date and time of the telco call, access web links or access codes, and nicknames	Let the corresponding mailing list know when you cannot make it.
Inform the participants about the agenda of the telco call, one day before	Brief someone else about any concerns you should be clearing for others.

Ensure that all participants receive the necessary documents for the telco such as agendas reports, and outline documents in good time.	Be punctual and try to keep to the allocated time.
Introduce the participants to each other	Limit the discussion to the relevant issues for that telco conference
Whenever possible use web share tools for sharing documents either online (share screen) or offline (project SharePoint repository).	Provide comments and revision to the circulated minutes within the time frame and in the form indicated by the organizer, ideally at the end of the telco session.
Name a date for the next telco call if Applicable, or propose using a voting facility (such as doodle poll) afterwards.	Collect online their preferences
Ensure that all participants receive a copy of the minutes. Use the template created for such purpose, and ask from participants to comment them if needed	Upload them online and discuss them as much as possible before leaving the meeting

2.4 Decision process and information flow

Project and quality management activities will ensure the proper implementation of the project plan and the satisfaction of its objectives. The following sections describe the plans and activities needed for the smooth and effective evolution of the project across its lifecycle.

2.4.1 Decision Process

Decisions will normally be taken by the responsible team member, and organization bodies based on what is stated in the CA, the GA and the QP and the individual WP, or Task plans. In case there is a dispute between two or more team members, an escalation procedure must be followed, as presented in the Conflict Resolution section.

2.4.2 Conflict Resolution

In HOCLOOP, the consortium will have to agree on and develop technical, scientific, and commercial ideas and issues. Usually, agreement will be reached first by informal contact, followed by official confirmation via e-mail, letter or agreed minutes. For important issues, the agreement may take the form of a short report signed by the responsible decision-makers. Non-technical factors, e.g., resource allocation and contractual terms, will need to be agreed and documented in writing. Technical issues/conflicts within given contractual commitments that do not involve a change of contract, budget and/or resources/ overall focus will be discussed/solved on the WP level first. If the decision being taken is unacceptable to partners found in the minority positions, the resolution of the conflict will be escalated, according to the path as described below:

- 1- First, the implementation team will inform the WPL for the conflict occurred.
- 2- The WP leader will organize the WP team meeting and the issue will be discussed. In case of disagreement the team will inform the WPL who will inform the PCT. The latter will contact the responsible persons and try to resolve the conflict.
- 3- The PCT will meet with the relevant parties to discuss the conflict. If no agreement occurs the issue will go to the TC that will have the authority for the final decision. The final decision must be accepted by all parties.

The most prominent decisions (e.g. re-allocation of project resources) will be made by the Plenary Board by majority vote. The consortium agreement defines the details. Any conflict, which impacts on organizational, technical, or administrative issues, is discussed and solved by majority and, if necessary, by the Plenary Board partners. In case of an important impact to the CSA scope, plan, or contractual obligations, the proposal for implementing the change is submitted to the Project Officer for final approval.

2.5 Management of Deliverables and other Project Items

This section includes:

- Document Edition (which programs can be used for writing the documents, the appropriate language(s) for the documents, the nomenclature, and the templates)
- Deliverable Production (the workflow a deliverable must follow from early till final stages)
- Roles (introduces new roles that have not described in Section 2)
- Supporting Tools and Artefacts (online repository, upload methods/rules, etc.)
- Key Performance Indicators (KPIs) and Evaluation (describe the KPIs of the HOCLOOP as defined in Grand Agreement)

2.5.1 Document Edition

In below Table 4 some basic rules for the document edition are summarized.

Table 4 Document Edition (Cheat Sheet)

#	Rules	Exceptions
Editing Suite Tools	<p><i>Documents:</i> Microsoft Word 365</p> <p><i>Presentations:</i> Microsoft PowerPoint 365</p> <p><i>Spreadsheets:</i> Microsoft Excel 365</p>	<p>Different editing tools (such as Google Docs, Sheets, Slides of LibreOffice) can be used under the following conditions:</p> <ul style="list-style-type: none"> ○ Deliverable editor must use the HOCLOOP template supplied and agree with contributors in advance. ○ Deliverable editor must provide the templates for the new format. <p>If a contributor does not use the selected not-official editing tool/format, the deliverable editor is responsible for integrating these contributions provided in the official editing format/tool.</p>
Language	English (US) or English (UK)	
Nomenclature	<p><i>DocName_Status_Date_Version_Partner</i></p> <p><i>Date:</i> When the document was first created.</p> <p><i>DocName:</i> The name of the document.</p> <p><i>Status:</i> draft, final</p> <p><i>Version:</i> The current version of the document.</p> <p><i>Partner:</i> The leader partner for the document. Mandatory for deliverable documents.</p>	<p>For non-deliverable documents these rules might be relaxed. However, it's advised to try to stick with this rule as much as possible.</p> <p>E.g.: Quality_Assurance_Plan_20221221_WP1_D11_2_v01_20201221_IFE.docx</p>
Templates	<p>Deliverable template in Word.</p> <p>Agenda and Minutes template in Word.</p> <p>Presentation template in Word.</p> <p>Deliverable review template in Word.</p> <p>Reporting template in Word.</p>	<p>Other templates created using other editing tools/format, should be also made available in the Templates folder in repository (e.g. SharePoint).</p>

2.5.2 Deliverables handling process

In order to submit to the EC only documents of the highest quality level possible, each deliverable needs to go through a couple of review stages. The next steps describe how a deliverable should be created. The process includes the below steps:

1. At least two months before due date the Deliverable Leader (DL) will remind the partners involved about the deliverable. In the best-case scenario, the processing of deliverable will begin that time.
2. The DL will request and gather feedback frequently, in this two-month period, from the partners involved.
3. If there are any problems, then the DL will report them to TL and he must report it to WPL. If the problem is solved, then the WPL gives instructions to the DL about the solution. In case the problem cannot be solved then the WPL will inform the PC and he will contact and agree with the Project Officer (PO) about a solution and if needed, they will extend the deadline.
4. In case of any delays the DL is responsible to inform the PC and he will contact and agree with the PO and they decide about the extension of the deadline. In case of no delays DL will inform the QM, TM and PC at least fifteen days before due date and they will send the document to the peer review.
5. Peer review will decide if changes are needed. In case of changes, he will inform the DL, who is responsible to inform the partners involved and solve them (steps 1 to 4 will be repeated in the remaining time with extended deadlines if needed).
6. When the peer review detects no changes then the document is ready for submission (final form) from the PC, in European participants' portal web site.
7. The final step included the delivery of the document to QM and PC for submission.

2.6 Roles

The following are the roles participating in the production process of deliverables:

2.6.1 Deliverable Leader

Deliverable Leader (DL) is the main editor and leads the deliverable production process, being the responsible for the submission of a high-quality deliverable in due time. The leader is also the main contact point in the other roles, being in charge of uploading the document to the right location in the project repository (SharePoint) and of notifying the peer reviewer, approval and quality manager whenever the document is ready for the next step in the deliverable production process.

2.6.2 Deliverable Contributor

Deliverable Contributor participates in the production of a part of the deliverable attributed by DL, by contributing with content and supporting the leader in producing a high-quality deliverable, addressing reviewers' comments and requests.

2.6.3. Deliverable Peer Reviewer

Deliverable Peer Reviewer must not be a direct contributor to be deliverable and is responsible for carefully reviewing the content of the deliverable, ensuring the deliverable objectives are met, from a scientific/technical point of view, but also the overall review objectives are fulfilled by the deliverable. Ideally, should have a special interest in the topic covered by the deliverable (e.g. a related WP/task leader). A proof-reading is expected by the peer reviewer as well.

The peer reviewer must fill in the review report (using the template created for that purpose) in due time. Comments can be also provided in the document using Microsoft Word features such as track-changes or review comments. The peer reviewer must upload the deliverable document (with comments) and the review report to the project repository and notify the deliverable leader accordingly. In our case, each deliverable will be reviewed by two partners. Table 5 provides the details over the reviewers for each deliverable.

List of deliverables

Table 5: List of deliverables

#	Title	Lead by	Prepared by	Reviewed by	Type	Diss. level	Due (Month)
1.1	Project and Data management plan	IFE	IFE	RW, VAASA,	R	PU	3
1.2	Risk management plan	IFE	IFE	UNIFI, VITO	R	PU	12

1.3	1st, 2nd, 3rd and final Technical annual report	IFE	IFE, UNIFI, VITO, RW,	All the partners	R	PU	12,24, 36,42
1.4	Innovation management and exploitation including the communication/dissemination portfolio	IFE	IFE	RW, VITO,	R	PU	12
2.1	Benchmark cases	VITO	VITO, IFE, IFPEN	UNIBA, RW	R	PU	12
2.2	Flow pipe model for fluid circulation	IFPEN	UNIFI, VITO, IFPEN, IFE	RW, UNIBA	R	PU	12
2.3	Heat flow model for the closed loop system	IFE	RW, IFPEN, IFE	VITO, UNIFI	R	SEN	12
2.4	Optimized design for the closed loop geothermal system	IFE	IFE, RW, IFPEN, UNIBA	VITO, TUD	R	PU	15
2.5	Validation of cylinder geometry-based simulation of the closed loop geothermal system	IFE	IFE, RW, IFPEN, UNIBA	TUD UNIFI	R	PU	18
3.1	Report on alternative fluids characterization	UNIBA	UNIBA, UNIFI, RW	IFPEN, VITO	R	PU	36
3.2	Report on heat transfer modelling and circulation within the borehole	UNIFI	IFE, RW, IFPEN, UNIBA	TUD, VITO	R	PU	36
3.3	Report on optimized geometry solutions for sub-surface-surface integration	UNIFI	IFE, RW, IFPEN, UNIBA	TUD, VITO	R	PU	42
3.4	Report on final calibrated models	IFPEN	TUD, IFE, RW, IFPEN, UNIBA	UNIFI, VITO	R	PU	42
4.1	Pilot sites data and integration analysis	TUD	IFE, RW, IFPEN, NORCE, UNIBA, UNIFI	VITO, VAASA	R	PU	6
4.2	Results of underground simulations and loop optimisation at the pilot sites	VITO	TUD, IFPEN, UNIFI, UNIBA	NORCE, RW	R	PU	18
4.3	Conceptual design and techno-economic feasibility study	VITO	TUD, IFPEN, UNIFI, UNIBA	IFE, VITO	R	PU	36
4.4	Pilot site documentation for future integration of HOCLOOP	IFPEN	RW, TUD, IFPEN, UNIFI, UNIBA	NORCE, IFE	R	PU	41
4.5	Evaluation of the HOCLOOP concept replicability in different geological contexts	RW	RW, TUD, IFPEN, UNIFI, UNIBA	VITO, NORCE	R	PU	42
5.1	Detailed design of the DHS and components	RW	RW, IFE, NORCE	VITO, UNIFI	R	SEN	10
5.2	Manufacturing of the DHS components for workshop testing	RW	RW, IFE, NORCE	VITO, UNIFI	R	SEN	18
5.3	Plan the workshop tests and build the workshop test arrangement	RW	RW, IFE, NORCE	UNIBA, TUD	R	SEN	11
5.4	Workshop test report of the DHS assembly and individual components	RW	RW, IFE, NORCE	IFPEN, UNIBA	R	SEN	22

6.1	Plan for the full-scale operation at Ullrigg in Stavanger	RW	IFE, NORCE,	UNIFI, UNIBA	R	PU	22
6.2	Risk considerations, alternative back-up solutions and contingencies	IFE	RW, IFE, VITO	TUD, NORCE	R	PU	22
6.3	Report for the DHS, instrumentation, rig adaptation and handling tools	RW	RW, IFE, NORCE	UNIBA, TUD	R	PU	29
6.4	Report on operation test results	RW	RW, NORCE, IFE	TUD, VITO	R	PU	37
7.1	Report on social acceptance	VAASA	UNIBA, IFE	IFPEN, UNIFI	R	PU	36
7.2	Report on market acceptance	VAASA	RW, IFE, UNIBA	IFPEN, VITO	R	PU	42
7.3	Report on sustainability assessment	UNIFI	VAASA, RW, IFE, UNIFI	VITO, UNIBA	R	PU	42

2.6.4 Deliverable Approval and Quality Management

The approval process consists in ensuring that the comments/requests in the peer review report have been indeed addressed by the deliverable leader/contributors, keeping in touch with the peer reviewer if necessary. The DL must update the corresponding sections in the review report (following the template created for that purpose) in due time.

Deliverable quality check is performed in the last round of proof-reading, to find and correct typographical errors and mistakes in grammar, style, spelling and layout that the modifications done when addressing review comments and requests may have introduced. The content of each deliverable report depends on the type of provided information. As a general principle, the responsibility for the content of each deliverable report is always with the author(s). Nevertheless, the reports should always meet a set of quality criteria, as described below:

- Completeness, information provided in the deliverable report must be reliable and must correspond with reality. This means that all background information used in the reports should be appropriately supported by references. Foreground information should be supplied in a clear fashion such that misinterpretation will be avoided.
- Accuracy, information should be focused on the key issues and be written in a fashion that takes into consideration the scope of the specific research work and its target audience.
- Relevance, all information used should be provided to the depth needed for the purpose of the reports, according to the project and programme objectives.
- Appearance and structure, although different contributions from different partners will be consolidated and merged in one document, it is important that reports are prepared with uniform appearance and structure. Consortium will use the templates provided in the SharePoint related folder for all project outcomes reporting purposes.
- Punctuality, the report should be released on time.

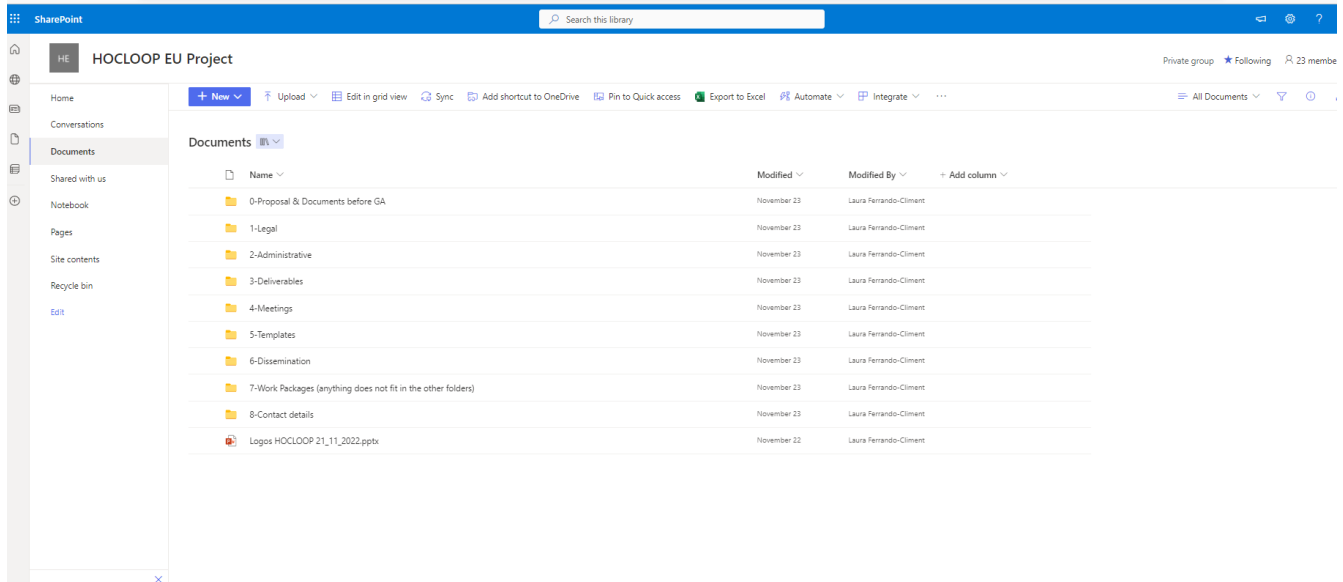
The deliverable leader will update and finalize the document and its .pdf version in order the documents to be uploaded in HOCLOOP internal repository and in parallel in EU official portal. The DL will inform the PC by email to proceed with deliverable uploading to EC.

2.6.5 Supporting Tools and Artefacts

2.6.5.1 Online Repository (SharePoint)

The HOCLOOP official repository is an instance of SharePoint, a web-based collaborative platform that integrates with Microsoft Office. SharePoint provides a safe, secure, and compliant file synchronization. Access is restricted to project partners. The figure below depicts the Documents section of HOCLOOP SharePoint repository.

In addition to the file management and synchronization functionality, the project also provides some other useful features:



2.6.5.2 Calendar (SharePoint)

The SharePoint has its own build in Calendar which can be found at Site Contents. In reality the SharePoint calendar is an Event List file type.

2.6.5.3 Office 365 (SharePoint)

The SharePoint is fully compatible with Microsoft Office 365. Especially Microsoft Office files can be opened and edited inside SharePoint repository using the build in feature.

2.6.5.4 GitHub and/or GitLab

In case of necessity the consortium will decide to use either GitHub, GitHub3 or GitLab GitLab4 as an online repository for code sharing. The code repositories can be either private or public (depends on the usage of the code).

2.6.5.5 Templates

A set of document templates that project partners must use will be created. The templates are defined in the annex of this document for letters, power point presentations, deliverables, and minutes.

2.7 Key Performance Indicators (KPIs) and Evaluation

The Key Performance Indicators of HOCLOOP are summarized below:

KPIs and measurement	WP related
Prove proper performance for the prototype DHS components: - Torque rating > 30 kNm - Tension rating > 1 MN - Pressure rating > 25 MPa	5
Verify proper drilling performance of the DHS by using a full-scale drilling rig to test drill a 8 ½" hole. Verify conversion of the DHS to a vacuum insulated string < 5 kPa Validate the thermal response from full scale testing in a well > 21 days.	6
Expected 5-10% of uncertainty of simulations compared to experimental data	2-3-6
Thermosyphon effect potential: of CO ₂ based fluids 10 times higher than water Compression power cut off using CO ₂ and SF/ILs (compared to 40-50 kW to obtain 1 MW with water) ΔT heat extraction 10 – 15 °C higher than water	3

Capacity to extract power also from low enthalpy (<120°C) and/or low depth (<1 km) reservoirs.	
80% of evaluated case study provide a 75% chance of exploiting geothermal energy at a reduced cost rate. Several fold the success rate for realization of geothermal reserves.	4
Definition of 8 key parameters for determination for successful implementation of the HOCLOOP concept	4
Enhanced social acceptance by stakeholder engagement via 6 co-design workshops (3 workshops in both Germany and Belgium pilot sites, involving 25 participants each).	7
Expected 60% cost reduction compared to standard technology to produce 1 MW of electricity or 1 MW of heat Expected 70% environmental impact reduction compared to standard technology to produce 1 MW of electricity or 1 MW of heat	7

2.8. Reporting

As a contractual obligation, reporting to European commission is achieved using the Participant Portal. Three types of reporting are available: a) continuous reporting with EU, b) periodic reporting with EU and c) internal reporting for the consortium.

2.8.1 Continuous reporting

The screenshot displays the 'RESEARCH & INNOVATION Grant Management Services' interface. The user is logged in as 'Laura Ferrando-Climent'. The main section shows 'MY PROJECT' details for 'Continuous Reporting 101083558 - HOCLOOP', with a progress bar indicating 'Started' on 20 Oct 2022 and 'Completed'. Below this, there are sections for 'Proposal Management & Grant Preparation 101083558 - HOCLOOP' with a progress bar showing stages from 'Submitted' to 'Paid' as of 23 Feb 2022. The interface includes a sidebar with navigation options like 'Latest Legal Data', 'Active Processes', and 'Document Library', and a footer with 'H2020 ONLINE MANUAL' and 'HOW TO' links.

Continuous reporting is performed during the consortium members through deliverables and dissemination activities per month. In addition, continuous reporting of HOCLOOP dissemination achievements will be published on project web site. The consortium will continuously report through EU portal its progress. It is continuously open for the beneficiaries to submit deliverables, to report on progress in achieving milestones, to answer to the questionnaire on different issues as soon as their own data are available (Screenshot EU portal).

For the Scientific publications, all publications must include the statement that the results were generated with the assistance of EU financial support (Article 38.1.2, GA). The consortium will report joint publications by:

- public & private project participants
- private/public project participants with public/private organizations, outside the consortium (if related to the project).

For these publications the consortium will ensure open access (free, online access for any user) to all peer-reviewed publications relating to your results (Article 29.2, GA).

Finally, the consortium will provide open access to other types of scientific publications, some of which may, in some cases, not be peer-reviewed, including monographs, books, conference proceedings and grey literature (informally published written material not controlled by scientific publishers, e.g. reports). Dissemination and communication activities will list only activities directly linked to the project, and the type of audience reached.

2.8.2 Periodic reporting

Periodic reporting session is open only during reporting period and can be found under Manage Project → Periodic Reporting. The HOCLOOP project has three reporting periods:

- First annual report: covers months 1-14 (01/10/2022 – 30/11/2023)
- Second annual report: covers months 15-28 (01/12/2023 – 31/01/2025)
- Third annual / Final report: covers months 29-42 (01/02/2025 – 28/02/2026)

The consortium must provide a separate summary for each periodic report (just update the summary for the previous period). The required sub-tables should contain the following:

- Summary of the context and overall objectives of the action
- Work performed from the beginning of the action to the end of the period covered by the report and main results achieved so far
- Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the action so far)
- Address (URL) of the action's public website

The quality requirements that the reporting should follow are:

- The summary must be suitable for direct publication by the Commission,
- Easily understandable by a general audience preferably not longer than 7,480 characters (roughly 2 pages), with no confidential data.
- It must be a "stand-alone" text - no references to other parts of the report, only to publicly available information.

2.8.3 Internal reporting

In the HOCLOOP project a secondary, Internal reporting process is adopted, which include Progress Reporting and financial reporting. Scientific progress will be monitored on monthly basis by the Scientific and Technical Committees and WP Leaders. Also, financial Reporting occurs every six months and one month after the period completion. Reporting details for the consortium and need material submission to EU are described in Article 20 of project GA.

In addition to the above reporting documents to EU, the Project Coordinator will report to EU officer through email project basic aspects in order to keep a continuously and live communication channel with EU and PO, such as activities in progress, planning, project deviations, short feedback from relevant events.

2.9. Dissemination, Communication and Collaboration Activities

The dissemination quality plan for the HOCLOOP project can be summarized in the following actions from consortium members.

- The partner should submit their dissemination request minimum 3 weeks before submission deadline by email to the WP1 Leader.

- The Dissemination Manager circulates the form to the Quality Manager and the members of the Steering Committee (SC) asking for approval/comments.
- QM's / SC decision should be sent to the WP1 Leader within five working days; If no answer is received due to the set deadline it is taken as an approval.
- The Dissemination Manager informs the involved partner(s) about the decision
 - o *Approval*: When approval is given, then the partner(s) proceed(s) to the proposed dissemination activity.
 - o *Conflict/objection*: Any SC member can reject the proposed dissemination activity if he/she has objections, as overlaps or possible disclosure of restricted or confidential information regarding the work performed in the different WPs. In case of conflict, the issue will be discussed between the coordinator, the dissemination leader, the Innovation manager, and the involved partners. If a conflict is created or further material is needed, then the dissemination leader informs the partner and requires modifications or additions. Then the material is proposed again to the dissemination leader and if significant changes that might provoke conflicts among partner interests must be made, the previous procedure is followed.
- Any dissemination material (abstract, draft paper, poster etc.) should be uploaded on the project website.

If a partner wishes to organize a workshop or special event related to HOCLOOP, then the approval from WP1 leader and the information of the Coordinator and the SC is also needed 1 month before the realization of this type of dissemination activity. More details can be found in Innovation, exploitation and Dissemination Plan D1.6 deliverable.

2.9.1 Web dissemination

The project webpage has a public open access area to everybody, but a restricted area is accessible to project partners only. The public area of the project webpage is maintained and kept up to date. Requests for updates, or changes in the structure of the project webpage should be proposed through the Coordinator. The web page is visible on Google and other important search engines.

Any news related to the project should be communicated to WP Leader, who will prepare the content to be published on the webpage and submit it to the Coordinator for approval. The restricted area is used for storing and sharing project documents (official documents, templates, deliverables and documents related to each of the WPs). It is also a working area for all the project related documents.

The web site dissemination area is presented under the 'Outcomes' tab where all the consortium activities and related scientific and technical news, based on the Consortium procedures are published. Practically each partner submits the material for publishing to PC and member partners for dissemination activities, after their approval, the content is published in the project web site and in social media as described in the next Section.

2.9.2 Social media

For external communication of project outcomes and HOCLOOP news and events and for sharing them with public, journalists, scientists and policy makers, the project will make use of LinkedIn as primary following social media. Any content to be shared using social media should be sent to the WP Leader for acceptance and following the previous section procedures for publishing.

2.9.3 E-newsletter

An e-newsletter shall be released and regularly distributed by email to inform on HOCLOOP news and events. Interested users can register on the public website to receive the HOCLOOP e-newsletter, by filling in a registration form, where they can record their e-mail addresses. Users have the possibility to unsubscribe the e-newsletter at any time. The published newsletters will be available also in the HOCLOOP web site.

The e-newsletter contents will be collected and processed by the DCM in cooperation with the QM for final approval and publication.

2.9.4 Press Releases and Media Coverage

At project milestones, press releases will be issued centrally to international media list, and also adapted, and disseminated to the local press (both broad and specialized), as well as to all project and partner networks, platforms, and stakeholders. All partners will disseminate non confidential information

of the project in their national language to local/regional newspapers and media, following the instructions given under Dissemination Procedures as will be described in Deliverable D1.6. The final, and approved version of each press-release will be uploaded to the team's shared documents platform, to be available for all partners to add a paragraph about themselves, their role within the project, and/or within the specific topic of the press release, and such version proliferates to their national and local media. The press releases will be uploaded to the main page of the project website and made available to the general public and will also be distributed via various media channels.

2.9.5 Rules for publications

The following rules for publications will be followed by the consortium.

- EU Disclaimer 1: Mandatory elements for acknowledgement texts in all kinds of publications are based on Article 27.3 in project GA:

"The project leading to this application has received funding from the European Union's Horizon Europe research and innovation program under grant agreement No 101083558".

or

"This work is a part of the HOCLOOP project. HOCLOOP has received funding from the European Union's Horizon Europe research and innovation program under grant agreement No 101083558. The authors would like to thank all partners within HOCLOOP for their cooperation and valuable contribution".

- EU Disclaimer 2: for results that could contribute to European or international standards based on Article 28.2 in project GA.

"Results incorporated in this standard received funding from the European Union's Horizon Europe research and innovation program under grant agreement No 101083558".

Logos: It is also mandatory to use the EU logo in all non-scientific publications. For the correct use of the EC emblem, please use the following links:

https://europa.eu/european-union/about-eu/symbols/flag_en

Rules for publications

Non-Scientific	Use HOCLOOP Logo Use EU Disclaimer 1 Use EU Logo
Scientific	Use EU Disclaimer 1 or 2 in the acknowledge section

Scientific dissemination

A selection of highly visible scientific conferences and events will be proposed by the Dissemination Coordinator for HOCLOOP project for promoting the HOCLOOP outcomes to research community and for fostering the exchange of scientific knowledge beyond the project. All paper/scientific publications, posters, etc., published in journals, conferences and other scientific and professional events will be available in the project web repository.

Collaboration with other EU projects and initiatives

Dissemination activities of HOCLOOP project include collaboration/clustering for cross-fertilization with other projects in the Horizon 2020 programme, which share similar project objectives. Of particular interest to HOCLOOP are the projects GECO and REFLECT. Along this objective HOCLOOP will co-organize and participate in joint workshops and networking sessions. Related outcomes will be published in HOCLOOP web site.

3. Data Management Plan (DMP)

3.1 Scope of the Data Management Plan

The HOCLOOP project plans to collect data from partners and pilot test in Ullrigg (Norway). The data will be processed and treated only by project partners. This Data Management Plan (DMP) details the data the project will generate and manage, following what methodology and standards, whether and how the data will be exploited or made accessible for verification and re-use, and how it will be curated

and preserved with respect to the FAIR principles and the EU GDPR. The signed Consortium Agreement defined the ownership of prior and post key knowledge (IPR, data etc.) of all involved parties (including partners and cities).

The Data Management Plan is a living document that will be regularly updated to support the data management lifecycle for all data that is collected, processed or generated by the project. The DMP will be updated whenever significant changes arise, such as the inclusion of a new category of data.

Data management is an important aspect of European projects as it ensures long-term preservation and accessibility of data during the project and after the project has ended. The DMP also outlines how the data is handled during the lifetime of the project and after it has been completed. In addition, the DMP seeks to reduce the risk of data loss or other threats that could render the data illegible or unusable.

3.1.1 Related Policies

The present DMP has been developed according to the following EU regulations regarding Research Data and Data Protection:

1. The Open Research Data Pilot (“ORD pilot”)
2. The General Data Protection Regulation

2.1.1 Open Research Data Pilot (ORD pilot)

The European Commission is running a flexible pilot under Horizon 2020 called the Open Research Data Pilot (ORD pilot). The Open Research Data Pilot aims to make the research data generated by Horizon Europe projects accessible with as few restrictions as possible, while at the same time protecting sensitive data from inappropriate access. According to this pilot, participating projects must submit a first version of the DMP (as a deliverable) within the first 6 months of the project. The DMP is a living document and will be updated whenever significant changes arise.

With the objective to provide open access for the public deliverables and to boost the visibility of the HOCLOOP outcomes as a European project, the Grant Agreement (GA) presents an entire Article for the dissemination of results and open access. Open access refers to the practice of providing online access to scientific information (e.g., peer-reviewed scientific research articles and research data) that is free of costs or other barriers to the end-users and reusable.

In relation to the above-mentioned, the following articles are important to consider and restate in the following deliverable.

Article 17.1 is related to the consortium’s obligation to disseminate results. This Article states that, unless it goes against the beneficiaries’ interests, each beneficiary must – as soon as possible – ‘disseminate’ its results by disclosing them to the public by appropriate means (GA, pp. 34). It encompasses the commitment to deposit the results in a research data repository, making sure that third parties can access, mine, exploit, reproduce and disseminate the content (free of charge for any user). The beneficiary must provide information — via the repository — about tools and instruments necessary for validating the results (and — where possible — provide the tools and instruments themselves) to ensure that the project results can be further exploited in the future. However, the Commission also recognizes that there might be good reasons to keep some or even all research data generated in a project closed. It follows the principle “as open as possible, as closed as necessary”.

3.1.2 General Data Protection Regulation (GDPR)

The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) is a regulation through which the European Parliament, the European Council and the European Commission intend to strengthen and unify data protection for all individuals within the EU. It also addresses the export of personal data outside the EU and EEA territories. The purpose of the GDPR is to provide a set of standardized data protection laws across all member countries. This should make it easier for EU citizens to understand how their data is being used, and for them to raise any complaint regarding the treatment of their data, even if the citizen is not in the country where the data is located. GDPR therefore works on two levels, (1) the ethical use of personal data, and (2) keeping that personal data secured.

GDPR is therefore important because it improves the protection of European data subjects' rights and their personal data, including its ethical uses. HOCLOOP project will comply with GDPR in every action to apply appropriate technical and organizational measures to implement the data protection principles.

To comply with the GDPR, personal data including gender, age, social level, education, ethnic origin, family composition, or any other data that could potentially identify the research subject will be pseudonymized in HOCLOOP. It is the responsibility of the researcher to make sure that the personal data is pseudonymized as quickly as possible after its collection, and that it remains like that.

Personal data will be collected in different WPs during HOCLOOP project, including observational, experimental and derived data, as defined in section 3.2 of the DMP. All partners shall manage their data following the FAIR data principles while being compliant with the EU GDPR. As stated, “the Data Protection Officer (DPO) will be the contact point for the HOCLOOP consortium executing the tasks envisaged in Article 39 GDPR regarding project implementation. He will help the HOCLOOP consortium ensure that all data collection and processing are carried out in such a way that it complies with relevant European Directives”. Along the Project Coordinator (PCO), the DPO will ensure the proper management and processing of all data in the project, complying with the regulations set out by the EU. Personal data will never be disclosed. Access will be performed via a cloud operated storage system (SharePoint), to which only the research team and the coordination team (CBS) will have access. If, due to the nature of data, any other platform (section 3.5 details several additional platforms that may be used) is used to store data, this must be communicated to the DPO.

Personal data collected directly from a research subject (e.g. an interview) must be pre-emptively accepted by the participants themselves through the procedures of informed consent. All offline data that includes personal data will be digitalised and uploaded to the main storage system (SharePoint) as soon as possible by the researcher responsible of its collection. Once this is done, offline personal data must be destroyed.

In HOCLOOP, personal data will not be kept for longer than 5 years after the project ends (unless otherwise required by relevant national legislation).

3.2. Data Summary

This section gives an overview of the scope of the project (purpose and objectives) to clarify the relationship between it and the data generated, collected and/or processed in the project.

3.2.1. Purpose of the data (collection and generation)

HOCLOOP aims to generate experimental and observational data from the pilot cases and included in the project’s dashboard tool to make it accessible to the rest of the project’s partners. This data, along with other derived data from case studies, literature review etc. will be structured into information and uploaded to HOCLOOP’s main storage system. Additionally, other storage platforms may be used, depending on the nature or purpose of the data. Compilation and analysis of this information will result in knowledge. This will be disseminated in the shape of toolkits, reports or scientific articles, accessible to public and private sector organizations. Third parties will be able to access, mine, exploit, reproduce and disseminate data and information generated or derived throughout the project (Article 29.3), according to HOCLOOP’s ethics, privacy and data protection requirements as well as its knowledge dissemination strategy.

Data flow in HOCLOOP, considering the main steps it follows until public release. Experimental data generated by the pilot cases will be initially stored in HOCLOOP’s Pilot City dashboard tool and, when structured, uploaded to SharePoint, along with its metadata information. Data from other types of sources will also be stored in SharePoint, however other platforms, such as GitHub, may be needed when the nature of data requires a different treatment (e.g. a source code from an OS developed for HOCLOOP). Once data is structured and analyzed, it will be made publicly available on the Zenodo platform, as the research data repository recommended by the EC. Public data will also be disseminated through different online services, including HOCLOOP website (HOCLOOP.eu).

3.2.2. Types of data

Given the project’s scope, different types of data coming from multiple sources will be collected, processed and/or generated in the project. These data will mainly – but not exclusively – consist of:

- Project management data; used for internal management of the project and its partners. It includes minutes, mailing lists or protocols among other types of datasets.

- Observational data; captured in real time by researchers or other stakeholders in the consortium. It includes social, economic and technical aspects of each pilot scenario. Observational data includes survey results, images, data collected on public events organized by the project, interviews or statistics generated by the project, among other types of datasets.
 - Experimental data: from labs and equipment, can often be reproduced. It includes datasets with stakeholders' inputs about production and collection, sorting, recycling and end-of-life qualities and properties of the materials for each pilot city. Experimental data includes environmental and technical information obtained under experiments, monitoring, sensors, etc. It will be gathered through the open data dashboard, an internal project tool used for monitoring and exchanging information.
 - Simulations and technical data: It is obtained from models. It can usually be reproduced if the input data is known. Simulations and technical data include material flow or economic models, among other types of data
 - Derived data: including compiled data from other sources or case studies. It includes data derived from HOCLOOP's online platforms, databases generated after mining data or statistical analysis, toolkits or reports that use HOCLOOP's generated data, among other types of data.
 - ICT infrastructure data: including the information related to technology (IT) infrastructure developed for HOCLOOP. It includes technical data related to the open data dashboard, the development of open-source software and an operating system. It will involve the development of technologies and systems through the use of publicly shared design and technological information. ICT infrastructure data includes source code, APIs and graphical interfaces, among other types of data.
- 3.3. Origin of data HOCLOOP is building on previous experience and knowledge from partners and connects with existing networks. Through experimentation and co-creation within pilot cities, HOCLOOP will investigate a broad range of topics from different sources in order to boost a new metabolism of cities through the reconfiguration of materials flows, and by creating CE business models and assessing their social, environmental and economic impact. As specified in section 3.2, data will be collected from many sources, such as literature reviews, interviews, surveys, activities with pilots and stakeholders, online sources, workshops, meetings and events, field measurements, previous research projects, open-source platform, legal documents and policies. Due to the nature of each material flow, pilot data will vary depending on each pilot case. The specific origin of data in each pilot case is not known yet, hence other sources may be used throughout the project.

3.2.3. Data formats

The DMP describes the data that will be generated by HOCLOOP project and how it will be published. This document is nevertheless written when most tasks are yet to be developed. Therefore, new data formats may appear during the project development. These will be included in the HOCLOOP dataset tool (see annex 1), and if significant changes arise, the DMP will also be updated.

The DMP follows the EC Open Research Data Pilot (ORDP). Therefore, it must be possible for third parties to access the data generated (in its various formats) during the project's development and in the future. Formats that allow the use of open-source software are prioritized, as it ensures that re-usability of the data in the future. Moreover, the specific software needed to view or edit the datasets is to be specified in their metadata information. If multiple software are available for one data format, open source is preferred and should be mentioned.

Reports, surveys, interviews, databases, data collected in public events or statistics may use spreadsheets, text, and presentation formats as they are easily accessible by third parties and researchers who want to further use or reproduce the data. Nevertheless, raw data may not be possible to store under these formats. In these cases, or when data requires to be saved in other specific formats, datasets will be stored under open software formats preferably. Most data types, including project management, observational, experimental, simulations and derived data, will use mainly – but not exclusively – the following formats to store data:

- Spreadsheets: Many authorities store information in spreadsheets, for example Microsoft Excel. This data can often be used immediately, given the information's' descriptions in the rows and columns. However, in some cases there can be macros and formulas in spreadsheets, which may be somewhat

more cumbersome to handle. It is therefore advisable to document such calculations within or alongside the spreadsheet since it is generally more accessible for users to read.

- Comma Separated Values (CSV): CSV files can be a very useful format because it is compact and thus suitable to transfer large sets of data with the same structure. However, the format is so limited that data can often be useless without documentation since it can be almost impossible to guess the significance of the different columns. It is therefore particularly important for the comma separated values formats that documentation or meta-information of the individual fields is provided and is sufficient and accurate.

- Text Documents: Formats like DOCX, RTF, ODF, or PDF are appropriate for certain kinds of documents, e.g., scientific journals, deliverables, reports, etc. Templates may be used whenever possible, so that displayed data can be re-used.

Presentation (.ppt): PPT is a file extension for a presentation file format used by Microsoft PowerPoint. The popular presentation software is commonly used for project slide shows.

- Plain Text (TXT): Plain text documents (.txt) are chosen because they are very easy to read and process via plain text parsers. They generally exclude structural metadata.
- Image or photo formats (.jpg, .png): Image file formats are composed of digital data in one of these formats that can be rasterized for use on a computer display or printer. An image file format may store data in uncompressed, compressed, or vector formats.

- Audio formats (.wav, .mp3, .ogg): An audio file format is a file format for storing digital audio data on a computer system. The audio coding format can be uncompressed or compressed to reduce the file size.

Derived data used to disseminate knowledge will be accessed through online platforms. This will include mainly - but not only - the following formats to store data:

- Web Services: For data that changes frequently, and where each scope is of limited size, it is very relevant to expose data through web services. There are several ways to create a web service, but some of the most used is SOAP and REST.

- Video formats (avi): A video file format is a type of file format for storing digital video data on a computer system. A video file normally consists of a container, containing video data in a video coding format, alongside audio data in an audio coding format. The container can also contain synchronization information, subtitles, and metadata such as title.

- Scalable Vector Graphics (.svg): It is an Extensible Markup Language (XML)-based vector image format for two-dimensional graphics with support for interactivity and animation. It can be used and viewed with several software, including open source one. For this reason, it will be preferably used over .ai formats to store diagrams and graphic data.
- Adobe Illustrator (.ai): Adobe Illustrator Artwork (AI) is a proprietary file format developed by Adobe Systems for representing single-page vector-based drawings in either the EPS or PDF formats.

Specific datasets are linked to ICT infrastructure data type, including OS, platforms and ICT tools developed by HOCLOOP, e.g. dashboard tool to store pilots' data. Even though these formats may be used in other data types as well, such as derived or experimental data, they are listed here as they will mainly be used for ICT infrastructure data. Due to their simplicity, JSON files will be preferred, but other formats will be used as well, depending on the data requirements. ICT infrastructure data type will use mainly – but not exclusively – the following formats to store data:

- JavaScript Object Notation (JSON): JSON is a simple file format that is very easy for any programming language to read. Its simplicity means that it is generally easier for computers to process than other formats, such as XML. If possible, JSON files will be used to store ICT infrastructure data.

- Extensible Markup Language (XML): XML is a widely used format for data exchange. It offers good opportunities to preserve the data's structure and how files are built while also allowing developers to write parts of the documentation in with the data without interfering with how they are read.

Standard Generalized Markup (SGM): SGM files are saved with the .sgm file extension and written in the SGM programming language. The SGM language is a document generation language that is used to share information digitally using custom tags and DTD file references.

• Hypertext Markup Language (HTML): Nowadays much data is available in HTML format on various sites. This may well be sufficient if the data is very stable and limited in scope. In some cases, it could be preferable to have data in a form easier to download and manipulate, but as it is cheap and easy to refer to a page on a website, it might be a good starting point in the display of data.

The file formats listed above are classified according to the data type which most likely will use them. Nevertheless, they may be used interchangeably in other data types or new formats will be used in the project, according to the partners' requirements. These will be specified in HOCLOOP dataset tool and, if significant changes arise, the DMP will be updated.

3.2.4 Data storage and sharing

HOCLOOP collaborates with 9 partners, hence a large amount of data is being - and will be - generated. To manage such quantities of data and allow the partners (and other researchers) to share them with each other, suitable storage media shall be used to comply with European privacy legislation.

All possible datasets must be stored in the main storage system (HOCLOOP SharePoint). This platform will be the main system for storage of active research and project management data. Due to some datasets nature (e.g. a dataset that contains sensitive personal data, a source code of an OS being developed for the project), these may use additional offline or online storage systems. This will be communicated to the DPO and the coordination team, as well as indicated in HOCLOOP's dataset tool, once the dataset is uploaded.

Zenodo will be used as the main platform for long-term preservation of results and research data. Additional platforms, such as fablab.io, GitBook or HOCLOOP's website will be used to publish and disseminate data, along with publications in scientific journals, according to the communication and dissemination strategy (D1.6&D1.7).

Below we will explain the different storage systems used in HOCLOOP.

3.2.5. Storage systems

The storage systems will include mainly - but not only - the following platforms:

HOCLOOP SharePoint

All possible datasets will be uploaded and maintained on a cloud-operating server, HOCLOOP's SharePoint storage. SharePoint will act as the project repository. It is a web-based collaborative platform that integrates with Microsoft Office. It is limited to a core set of collaboration, file hosting, documents and content management scenarios, and is updated by all partners on a frequent basis, recording also the metadata of each uploaded dataset in HOCLOOP dataset tool. The primary account holder is held by the coordination team. SharePoint is furthermore GDPR compliant.

Access to HOCLOOP's SharePoint is limited to consortium members and the coordination team (CBS). A few folders (e.g. informed consent forms) are however restricted to the research teams and the coordination team only. CBS will be responsible for making such restricted folders.

The consortium will store all project data on the project's SharePoint created by CBS, including:

- Grant Agreement and Consortium Agreement;
- Project reports and deliverables (public and non-public);
- Personal and sensitive user data;
- Surveys and interviews (including digitised versions of physical forms);
- All dissemination-related material;
- Projects templates;
- Consent forms signed by participants;
- Notes and minutes from meetings;
- Pictures taken during conferences, workshops and seminars;
- HOCLOOP dataset tool: An updated live document of record keeping of the data collected.

HOCLOOP data will be kept for enough time to allow for final publications (maximum of 5 years) unless otherwise required by relevant national legislation. Furthermore, information about the storage limitation for each specific personal data set shall be included in all data protection policies and notices.

Additional storage platforms in which HOCLOOP data will be stored may be:

Zenodo Data repository. In order to reach the research and professional community, additionally to the main storage system, all public data will be made available on the Zenodo digital repository during the development of HOCLOOP project and at the end of it. Zenodo was launched at the CERN Data Centre in May 2013 with a grant from the European Commission with a special commitment to sharing, citing and preserving data and code. As a digital repository, Zenodo registers DOIs for all submissions through DataCite to make them easily and uniquely citable. The platform is based on the Invenio open-source software, Zenodo profits from and contributes to the foundation of code used to provide Open Data services to CERN and other initiatives around the world. A specific Zenodo community for HOCLOOP has been created by the Coordination team and will store all public data related to the project.

On premises - Partners internal facilities

Some of the existing and ongoing project datasets are stored at the premises of the owning consortium partners, including software, tools and models. It is the responsibility of the partner to ensure that such software complies with the GDPR principles. To ensure that the software complies with GDPR, the partners are encouraged to send an email to the DPO and the coordination team.

Where possible, the partners are encouraged to share the data from their internal facilities to SharePoint as this is the project's main repository.

3.2.6. Sharing systems

The sharing systems will include mainly - but not only - the following platforms:

HOCLOOP Website

The consortium will disseminate all applicable data on HOCLOOP's website (hocloop.eu), which is regularly updated by the WP1 Leader (IFE), Project Coordinating Team and all the WP Leaders who have administrator rights. The website, setup and maintained by IFE, will be a front-end platform to disseminate knowledge and public data developed in HOCLOOP. In order to make it possible for third parties to access, mine, exploit, reproduce and disseminate data, the HOCLOOP website will always link from Zenodo Data repository.

3.1.7. Data Utility

The data collected and generated in HOCLOOP will be useful for three main groups: citizens, who wish to participate in co-creating their city to make it environmentally, socially and economically vibrant; businesses, which include organizations, manufacturers and startups of all sizes that want to partake in future-proofing their industries by supporting social, economic and environmental transformation; and governments, which are seeking to adopt holistic, innovative policies that represent today and tomorrow's urban citizen in each of the Social-Technological-Economic-Environmental-Political (STEEP) aspects. HOCLOOP will describe systemic solutions, co-design, test and implement them in the pilot cities. Each solution will embed CE principles to produce the regeneration of urban loops in terms of optimization of flows and less consumption of resources. Following open-source principles for each solution, documentation and data will be provided so that interested private and public organizations will be able to easily replicate and adopt them.

Throughout those processes, the DPO at CBS will make sure that the collected data respects the rules of this DMP and other regulations and legal documents that are relevant for the data of the citizens (subjects) in question.

3.3. FAIR data

Horizon Europe beneficiaries should make their research data findable, accessible, interoperable and reusable (FAIR), to ensure it is soundly managed. Good research data management is not a goal in itself, but rather the key conduit

leading to knowledge discovery and innovation, and to subsequent data and knowledge integration and reuse.

HOCLOOP research data should be "F.A.I.R.". These principles precede implementation choices and do not necessarily suggest any specific technology, standard or implementation-solution.

Below, the FAIR Data Principles are further described (Wilkinson et al. 2016).

1. To be Findable:

a. Metadata are assigned a globally unique and eternally persistent identifier.

- b. Data are described with rich metadata.
- c. Data (and metadata) are registered or indexed in a searchable resource.
- d. Metadata specify the data identifier.

2. To be Accessible:

- a. Data (and metadata) are retrievable by their identifier using a standardised communications protocol.
- b. The protocol is open, free, and universally implementable.
- c. The protocol allows for an authentication and authorization procedure, where necessary.
- d. Metadata are accessible, even when the data are no longer available.

3. To be Interoperable:

- a. Data (or metadata) use a formal, accessible, shared, and broadly applicable language for knowledge representation.
 - b. Data (or metadata) use vocabularies that follow FAIR principles.
 - c. Data (or metadata) include qualified references to other (meta)data.
4. To be Re-usable:
- a. Data (or metadata) have a plurality of accurate and relevant attributes.
 - b. Data (or metadata) are released with a clear and accessible data usage license.
 - c. Data (or metadata) are associated with their provenance.
 - d. Data (or metadata) meet domain-relevant community standards.

It should be noted that, participating in the ORD Pilot does not necessarily imply opening up all HOCLOOP research data. Rather it follows the principle “as open as possible, as closed as necessary”. In fact, as per the GA Article 36.1, during implementation of the action and for 4 years after the period set out in Article 3, the parties must keep any data, documents or other material confidential that is identified as confidential at the time it is disclosed.

Below we will explain how we will apply the FAIR principles in practice. 4.1 Making data findable, including provisions for metadata: The key to making data findable is equipping datasets with metadata that meets basic standards and adheres to uniform, consistent schema. Provisions and actions that shall be taken to ensure the discoverability of HOCLOOP data include: • Accompanying datasets with properly structured and accurate metadata, according to FAIR data principles specified above. • Providing proper documentation identifying their content and potential uses • Making data identifiable by using standard identification mechanisms (e.g. DOI, where applicable) • Publishing papers and reports with references to the data

All data and metadata involved in HOCLOOP project will comply with Zenodo Data repository FAIR data principles. See <https://about.zenodo.org/principles/>

This will be done in respect to Article 29.2 in the GA, and by assigning a DOI to each dataset in the project. Moreover, file naming convention and versioning will be used for all files generated during the project.

HOCLOOP dataset tracking database Datasets must be documented and organized in order to be accessible. A dataset tool was developed to collect and trace all relevant datasets and shared with the HOCLOOP consortium. This tool will allow the collection, identification and classification of the data generated during the lifespan of the project and will be applicable to all cases and data types.

Each HOCLOOP member will be responsible for regularly adding and classifying the data generated throughout the project’s duration to the dataset tool, sharing the following information:

- Dataset name
- Trace Code
- Type
- Data source
- Format
- Storage platform
- Currently accessibility
- Archiving access policy
- WP related

- Data controller responsible partner
- Data controller person
- Data controller person email
- Data collection status
- Dataset description
- GDPR condition (for personal data)

The database will automatically provide a dataset unique trace code and a registry date and it will be updated regularly. The repository will be stored on SharePoint and it will be only accessible by the consortium members. The HOCLOOP dataset tool will be used to identify project datasets and partners responsible for each dataset, and is aimed to guarantee the traceability of all the project data. The dataset tool configuration is attached in Annex 1. 4.2 Making data openly accessible: HOCLOOP will identify and consolidate existing open datasets in cities and integrate them in an open data platform, which will be securely stored using blockchain technologies, respecting the transparency and open-source principles of the true sharing economy. The core of the HOCLOOP platform and its modules will each be accompanied by an open specification that others can use to integrate into their code by using a royalty free license.

In respect to making data openly accessible, and as described in the Grant Agreement, all project software deliverables will be licensed under open-source principles, unless otherwise specifically mentioned in the consortium agreement or decided by the general assembly. The preferred open-source licenses will be GPLv3.0 and Apache 2.0 while existing code bases will preserve their own existing open source licenses (GA, pp. 41).

Public documents will be stored on Zenodo platform as a backup and external links, to access the data, will be embedded on the HOCLOOP website. The documents will be available in protected PDF files.

As stated earlier, this document will be updated along the project with which data will be made accessible and which will not, along with the reasons for opting out. 4.3 Making data interoperable: The data standards related to the project activities might vary depending on partners' internal tools and methodologies. As part of the project's open data access and sustainability strategy, once the project finishes, the data that can be published as open data will be selected and published. To ensure that project data is made available using the same standards towards consistency and usability both during and after the project ends, all datasets should provide at least the following metadata (see section Making data findable, including provisions for metadata): • Digital Object Identifier (DOI) • Publication date • Title • Authors • Description • Source • Keywords 4.4 Increase data re-use (through clarifying licenses): Further exploitation and uptake of HOCLOOP will be a full, holistic, complete open source environment with all required open source widgets, application examples, interfaces, documents and other items. These deliverables will be based on internet standard developer environments and services (such as GitHub) for easy exploitation.

All non-software deliverables of the project will be licensed as Creative Commons where this is legally possible, with the exception of academic publications that will have to comply with the licensing terms and rights of the academic publication venue. Where applicable, all media deliverables will also be placed on Wikimedia Commons for easy exploitation.

According to the Art. 28.1 in the Grant Agreement, each beneficiary must — up to four years after the period set out in Article 3 — take measures aiming to ensure 'exploitation' of its results (either directly or indirectly, in particular through transfer or licensing) by: (a) using them in further research activities (outside the action); (b) developing, creating or marketing a product or process; (c) creating and providing a service, or (d) using them in standardization activities.

Data archiving and sustainability will be guaranteed by the Zenodo digital repository. As a European Commission supported initiative, and technically supported by CERN, we trust this as the best way to ensure access to the generated data continues long after the project ends.

Allocation of resources

The Data Management Plan is a living document and it will be updated regularly by the lead beneficiary and reviewed by WP-leads and the Coordination Team with the purpose of supporting the data

management lifecycle for all data that will be collected, processed and/or generated by the project. Before updating the DMP, the Coordination team shall be notified and the final update shall be approved by them.

The responsibilities of the lead beneficiary are to update the DMP as a deliverable when significant changes arise, and – together with the DPO – assist the consortium partners with specific questions in relation to the DMP.

The Coordination team is responsible for ensuring proper management and processing of all data in the project, complying with the EU data protection regulations. Moreover, the Coordination team is in charge of uploading the deliverables to the Participant Portal and to place a copy on SharePoint. The public deliverables will also be uploaded by the Coordination team to the Zenodo Platform, including the datasets related to the documents, at the same time they are made available on the Participant Portal. Other types of public data also must be uploaded to Zenodo by the coordination team.

The responsibilities of the project members include: ● Regular update and classification of the data collected and generated in the HOCLOOP dataset tool (available on SharePoint);

- Implementing and respecting the Data Management Plan;
- Before the start of any task that requires processing of any kind of personal data, an analysis of the types of personal data necessary will be made with the participation of the respective partners, who will also request the opinions of the ethical manager and the PCO.

3.4. Data security

All personal data collected and processed during the project will be stored on SharePoint as it conforms with the EU GDPR. The Regulation (EU) 2016/679 (GDPR) defines ‘personal data’ as “any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person”. The purposes of processing personal data in HOCLOOP include, but are not limited to, project management and coordination, project outreach, communication and dissemination activities, cases studies, research activities, administration and compliance with the Grant Agreement and statutory obligations of the project partners. Personal data collected by the HOCLOOP partners will be processed in a way that safeguard the privacy and rights of individuals following the applicable national laws and regulations in compliance with the EU GDPR.

Project participants through the different pilots and activities will provide some personal information to allow their identification by the consortium. All recordings, transcripts and notes from workshops and interviews will be pseudoanonymised. If personal data is collected in a physical form (e.g. on paper), the researcher is expected to store it in the cloud-operating server in a digitalized version as soon as possible. The physical copies shall be destroyed securely. Moreover, all identifiable data will be dissociated from the rest of the collected data in a separate database during data collection, in order to respect the regulations on personal data. This also accounts for public released, where data will contain personal information, such as those collected in WP1 (social impact), WP3 (material flow analysis), WP4 (cases studies) and WP5 (pilots) and handled by the IT team (WP2).

Each researcher is responsible for making sure that personal data is pseudonymized as quickly as possible after its collection, and that it remains safe.

3.5. Ethical aspects

Research and innovation activities conducted by HOCLOOP’s consortium team play an essential role in achieving the project’s objectives. However, any activity will involve human subjects and personal data. By following the general ethics requirements, HOCLOOP project ensures that all research activities undertaken by the project partners. The project partners will follow their internal procedures as long as their practice is in compliance with applicable international, EU and national law and follow the standards and best practices of ethical research.

3.6. Plan Maintenance

The Data Management Plan is intended to be a living document in which information can be made available through updates as the implementation of the HOCLOOP Project progresses and when significant changes occur. The DMP will be updated over the course of the project whenever significant changes arise by the lead beneficiary of the deliverable (D1.1), reviewed by WP-leads/Beneficiary Partners and approved by the PCO.

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