



MARCLAIMED

Research Ethics and Data Protection Monitoring Report v1

Deliverable D7.5

WP7: Project Coordination and Management

Author: Cetaqua Andalucía

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LEAD BENEFICIARY	Cetaqua Andalucía		
RESPONSIBLE AUTHOR	Sara Espinosa Martínez		
CONTRIBUTIONS FROM	Luc Gasser (EGM), Nazim Uddin (IMDEA)		
ABSTRACT	First report of research ethics guidelines, recommendations, and related monitoring activities.		

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EXECUTIVE SUMMARY

The MARCLAIMED project has established a comprehensive ethics and data protection monitoring plan designed to monitor the privacy and confidentiality of generated data, ensure compliance with ethical standards in data use, storage and sharing, guarantee the application of technical standards, and determine which data can be shared in open data initiatives.

The project operates under a robust regulatory framework that complies with the General Data Protection Regulation (GDPR) EU 2016/679, Directive 2002/58/EC and applicable national legislation, while following Horizon Europe ethics requirements outlined in Article 14 and data protection requirements in Article 15 of the Grant Agreement.

For ethics governance, an Ethics Mentor has been appointed, specifically Luc Gasser from EGM, who is responsible for continuously monitoring compliance throughout the project. The project applies the guidelines from the High-Level Expert Group on Artificial Intelligence (HLEG AI) for Trustworthy AI, ensuring that all AI-based tools developed are lawful, ethical, and both technically and socially robust.

The retrospective analysis covering the period from M1 to M18 revealed positive results in both personal data protection and AI implementation. Regarding personal data, only minimal identifiers are collected, including email, first name and surname, with adequate legal bases established through contract, legitimate interest and consent. Access is limited to authorized personnel and technical safeguards have been implemented. Concerning AI development, the MARVIS and PREDMAR models are trained exclusively on non-personal datasets, pose no discrimination risks, and serve only as decision-support tools without replacing human judgment. Importantly, no serious ethical concerns were identified during this initial period.

For data management, the project utilizes a shared Google Drive hosted under Veolia Group security protocols, featuring controlled access mechanisms and document sensitivity classification to ensure appropriate protection levels for different types of project information.

Looking forward, ethics monitoring will continue throughout the entire project duration through monthly questionnaires focusing on personal data protection and AI use. A final comprehensive report is scheduled for delivery at M36 in January 2027, which will document the complete ethics and data protection journey of the project.

1 Introduction

MARCLAIMED Project has a monitoring plan for both Ethics and Data Protection and Management. The main objectives of this monitoring plan are: i) to monitor the generated data with respect to their privacy and confidentiality, ii) to ensure that the ethical standards for data use, storage and share are applied throughout the project, iii) to ensure that the technical standards are applied for, and iv) determine which data can be shared in the open data initiative.

To this end a dynamic Data Management Plan (DMP) has been produced and gathered in deliverable D7.1 "Data Management Plan v1" (M6), and will be updated in the following versions D7.2 "Data Management Plan v2" (M24) and D7.3 "Data Management Plan v3" (M36).

Also, the Ethical and legal assessment will be ensured. To this end this deliverable D7.5 "Research Ethics and Data Protection Monitoring Report v1" and the second version of it (M36) gather the guidelines, recommendations and related monitoring activities.

To ensure this issue an Ethics Mentor has been designated to advise the project participants on the ethics issues derived from the project and to keep a report on the activities on file. Marclaimed Ethics Mentor from EGM is responsible for continuously monitoring the compliance of the High-Level Expert Group on Artificial Intelligence (HLEG AI) created to provide input and counsel to academia and industry.

MARCLAIMED Project develops different tools AI-based, so HLEG AI guidelines will be used when co-designing them. Trustworthy AI has three components: (1) it should be **lawful**, complying with all applicable laws and regulations (2) it should be **ethical**, ensuring adherence to ethical principles and values and (3) it should be **robust**, both from a technical and social perspective, even with good intentions.

2 Research Ethics

The MARCLAIMED Consortium is dedicated to maintaining the highest ethical standards throughout its research project. This commitment includes proactively managing any ethics-related issues that may arise and addressing the ethical implications of the proposed research. The consortium adheres to the ethical rules and standards set forth by the Horizon Europe Programme, specifically those outlined in "Article 14 – Ethics and Values." Ethical considerations, societal impacts, and data protection are fundamental aspects of this project.

2.1 Rules for carrying out the action: Adherence to relevant EU regulations

The MARCLAIMED beneficiaries must carry out the action in compliance with the Ethics requirements, as outlined in Article 14 of Annex 5, Section 2 - Rules for carrying out the action, in the Grant Agreement (GA).

According to the grant agreement of the MARCLAIMED project, in the section regarding Ethics and research integrity, the following paragraphs are relevant:

The beneficiaries must carry out the action in compliance with ethical principles (including the highest standards of research integrity) and the applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms and its Supplementary Protocols.

The beneficiaries must pay particular attention to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of persons, the right to non-discrimination, the need to ensure protection of the environment and high levels of human health protection.

In addition, the beneficiaries must respect the fundamental principle of research integrity as set out in the European Code of Conduct for Research Integrity³.

This implies compliance with the following principles:

- Reliability in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources
- Honesty in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way
- Respect for colleagues, research participants, society, ecosystems, cultural heritage and the environment
- Accountability for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

And means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices including ensuring, where possible, openness, reproducibility and traceability and refrain from the research integrity violations described in the Code.

Activities raising ethical issues must comply with the additional requirements formulated by the ethics panels (including after checks, reviews or audits; see Article 25 in the GA).

Before starting an action task raising ethical issues, the beneficiaries must have obtained all approvals or other mandatory documents needed for implementing the task, notably from any (national or local) ethics committee or other bodies such as data protection authorities.

The documents must be kept on file and be submitted upon request by the coordinator to the granting authority.

Due to the human involvement and personal data collection related with the Stakeholder engagement activities, MARCLAIMED Project will comply with all the relevant legislation:

- General Data Protection Regulation (Regulation (EU) 2016/679)2,3;
- Directive 2002/58/EC4 of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications)
- Specific national legislation on the protection of personal data.

2.2 Ethics guidelines

Horizon Europe has introduced an Ethics Procedure that includes Ethics processes before grant-signature and Ethics in the management of the grant.

Ethics processes before grant-signature

The Ethics Review Procedure should be conducted before the start of the project. The ethics process starts with an examination of the proposal, with particular attention paid to the *ethics self-assessment*⁵. For Horizon Europe programs, proposals may need to undergo an ethics review before selection. If one or more ethics issues are identified, they will be subject to ethics requirements that must be addressed immediately or implemented during the grant period. In the latter case, these requirements will be included as deliverables in Annex 1.

2.2.1 Ethics self-assessment

It covers common ethics issues that may arise in EU projects and provides advice on addressing them. Applicants must complete an ethics self-assessment if their proposal raises any of the listed ethics issues. This should describe the issues, how they will be addressed to ensure compliance, and provide any relevant documentation.

The ethics self-assessment becomes part of the GA (in Annex 1, as description of the action, ethics requirements, etc.) and may thus give rise to binding obligations that may later on be checked through ethics checks, reviews or audits, so the time invested in it is important. It helps ensure compliance with applicable international, EU and national law, allows easier processing, contributes to responsible implementation, and facilitates publication of results.

Ethics issues can arise in many areas beyond just medical research, such as research protocols in social sciences, ethnography, psychology, environmental studies, security research, etc. Applicants should think about ethics from the design phase and protect research subjects and personal data.

Applicants should first seek ethics advice from experts at their own institution, such as ethics committees, compliance managers, data protection officers, etc. as they can provide guidance specific to the applicant's situation and legal environment.

2.2.2 Ethics self-assessment in the MARCLAIMED GA: technical robustness of AI-based tools

Ethical dimension of the objectives, methodology and likely impact MARCLAIMED plans to integrate Machine Learning (ML) techniques with MARVIS (virtual sensing), PREDMAR (water demand and availability forecasting), MARAISER (short-medium term optimisation) and providing AI to the digital twins instantiated in the IDST.

From the AI Ethics Guidelines produced by the High-Level Expert Group on Artificial Intelligence (HLEG AI), created to provide input and counsel to academia and industry, Trustworthy AI has three components, which should be met throughout the system's entire life cycle: (1) it should be **lawful**, complying with all applicable laws and regulations (2) it should be **ethical**, ensuring adherence to ethical principles and values and (3) it should be **robust**, both from a technical and social perspective since, even with good intentions.

These guidelines provide an assessment list which will be used when co-designing the IDST specification in T2.1. The questions are related to 1) human agency and oversight (including fundamental rights, human agency and human oversight); 2) technical robustness and safety (including resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility); 3) privacy and data governance (including respect for privacy, quality and integrity of data, and access to data); 4) transparency (including traceability, explainability and communication); 5) diversity, non-discrimination and fairness (including the avoidance of unfair bias, accessibility and universal design, and stakeholder participation); 6) societal and environmental wellbeing (including sustainability and environmental friendliness, social impact, society and democracy); 7) accountability (including auditability, minimisation and reporting of negative impact, trade-offs and redress). All these criteria will be analysed and taken into account during the co-design activity of T2.1 to target a by-design AI technical robustness.

An **Ethics Mentor will be selected to advise the project participants on the ethics issues** derived from the project and to keep a report on the activities on file. The Ethics Mentor has been selected and agreed for all the Consortium being Luc Gasser from EGM.

As a result, the MARCLAIMED project conducted a preliminary evaluation through the Ethics Mentor as it is described in the GA (section 4 "Ethics self-assessment"). This prior review, included in this deliverable as Annex 1, did not identify any ethical issues. However, if any ethics issues apply, the project should complete the ethics self-assessment.

The monitoring plan for RP2 consists of a monthly, board-approved questionnaire that focuses on two ethical domains, personal-data protection and AI use, and will be continuously updated by the consortium throughout the rest of the project. The full description of the Ethics monitoring plan and the retrospective report for RP1 are included as Annex 2 of this report.

WP-leaders are supporting this activity by regularly providing feedback on the performed and planned activities and constantly monitoring ethics and data protection of their respective WPs.

Regarding external stakeholder involvement, the project deals with:

- Continuous interaction with stakeholders, through Community of Practices (CoP) established in the 3 demo sites. Stakeholders' data are registered in the *Stakeholder Register*.
- Co-creation activities for the digital tools development, related with Task 2.1(WP2) "Co-design of the MARCLAIMED IDST". This task started in M1 and will end in M24 and it is focused on the co-design of the MARCLAIMED IDST, using human centric design thinking approaches. Key stakeholders will be identified, key decision points and scenarios prioritised, and the IDST functionalities defined. This will be done in close connection with co-creation of MAR strategies in WP3, with particular reference to the co-creation in T3.2. This task will also undergo the 'Trustworthy AI assessment list' evaluation of the HLEG AI (DoA, Section 1.2.8).

2.2.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under the relevant Article, the granting authority may reduce the grant (see Article 28 in the GA for more information). Such breaches may also lead to other measures described in Chapter 5 of the GA (for more information).

The granting authority can reduce a beneficiary's grant at the time of termination, final payment, or afterwards, if the beneficiary or related persons committed substantial errors, irregularities, fraud, or serious breaches under this grant or other EU grants. The reduction amount is proportionate to the seriousness and duration of the issues, calculated by applying an individual reduction rate to the accepted EU contribution. The beneficiary is formally notified of the reduction, the amount, and the reasons, and can submit observations within 30 days if they disagree. If the reduction leads to a recovery, the contradictory procedure with a pre-information letter, as outlined in Article 22, will be followed. The granting authority deducts the reduction amount and calculates the amount due, potentially making a recovery as per Article 22.

3 Data Protection

Data protection is designed to safeguard our right to privacy. It refers to the legal framework and technical measures implemented to ensure that all personal data are protected from unauthorized, unintended, or malicious use. Data protection encompasses measures related to data access, data storage, and data accuracy.

In the context of research, privacy concerns arise whenever personal data, whether in digital or physical form, are collected and stored. The primary challenge for researchers is to utilize and share data while simultaneously protecting identifiable information to guarantee personal privacy. The personal data required in research can include health information, genetic information, behavioral data such as criminal records, financial information, travel records, information on religious beliefs, sexual orientation, or ethnic identification records.

Data protection strategies in research should involve robust access controls, secure data storage and transmission protocols, data anonymization or pseudonymization techniques, and strict adherence to data minimization principles. Additionally, researchers must obtain informed consent from participants, implement data retention and disposal policies, and conduct regular privacy impact assessments to mitigate potential risks.

The MARCLAIMED project activities shall comply with the General Data Protection Regulation (EU) 2016/679 (GDPR). The GDPR is a comprehensive data protection law that was introduced by the European Union in 2016 and became enforceable on May 25, 2018. It is designed to strengthen and harmonize data protection rules across the EU, giving individuals greater control over their personal data and imposing strict obligations on organizations that collect, process, and store personal data.

Subject-matter and objectives of the GDPR:

1. This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data.
2. This Regulation protects fundamental rights and freedoms of natural persons and in particular their right to the protection of personal data.
3. The free movement of personal data within the Union shall be neither restricted nor prohibited for reasons connected with the protection of natural persons with regard to the processing of personal data.

3.1 Regulatory framework: Article 15 - Data Protection

The MARCLAIMED beneficiaries must carry out the action in compliance with the Data Protection requirements, as outlined in Article 15 of Annex 5, Section 2 - Rules for carrying out the action, in the Grant Agreement (GA).

According to the grant agreement of the MARCLAIMED project, in the section regarding Data Protection, the following paragraphs are relevant:

- Any personal data under the Agreement will be processed under the responsibility of the data controller of the granting authority in accordance with and for the purposes set out in the Portal Privacy Statement.
- For grants where the granting authority is the European Commission, an EU regulatory or executive agency, joint undertaking or other EU body, the processing will be subject to Regulation 2018/1725.
- The beneficiaries must process personal data under the Agreement in compliance with the applicable EU, international and national law on data protection (in particular, Regulation 2016/679).

They must ensure that personal data is:

- Processed lawfully, fairly and in a transparent manner in relation to the data subjects .
- Collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes - adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed - accurate and, where necessary, kept up to date.
- Kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed.
- Processed in a manner that ensures appropriate security of the data.

The beneficiaries may grant their personnel access to personal data only if it is strictly necessary for implementing, managing and monitoring the Agreement. The beneficiaries must ensure that the personnel is under a confidentiality obligation.

The beneficiaries must inform the persons whose data are transferred to the granting authority and provide them with the Portal Privacy Statement.

3.2 Consequences of non compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 28). Such breaches may also lead to other measures described in Chapter 5 of the GA (for more information).

3.3 Shared drive and access to the MARCLAIMED documents

From M1, CETAQUA put at partners disposal a shared Google Drive hosted by CETAQUA under the security constraints of the Veolia Group, to which CETAQUA belongs. Access has been granted to all the partners. New project participants from the consortium can be added after requesting to the project coordinator. This environment allows close collaboration among partners while ensuring that robust data security protocols are maintained.

The shared folder includes the documents prepared at proposal time, the Consortium Agreement and the Grant Agreement, and it is used to store all the documents generated during the project by the partners. After every meeting, the organiser is asked to upload all the documents related to that meeting. Communication materials will be also stored in the folder, as well as the deliverable during their preparation and after the submission.

According to the Veolia Group data protection policies, only users with the link to a folder or file can have access. The settings of the MARCLAIMED shared drive are shown in Figure 1.

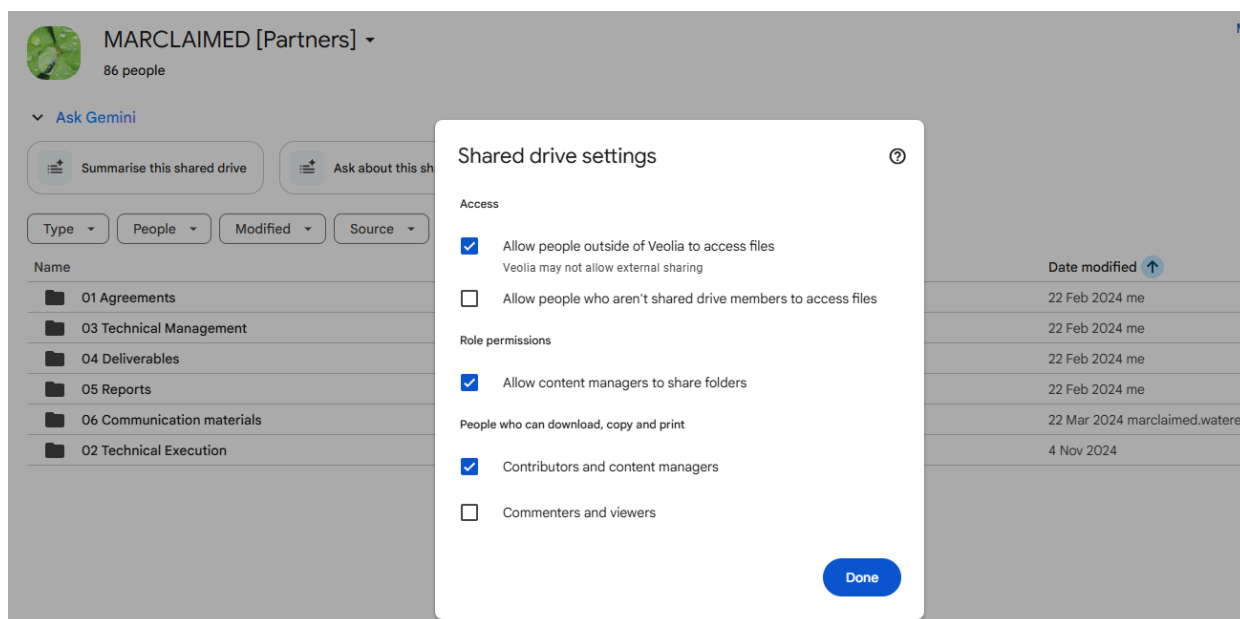


Figure 1 - Setting of the shared folder of MARCLAIMED

After the link of a folder or a file is sent to a partner who needs to access, they have to ask for permission. An e-mail is sent to the coordinator who authorizes or rejects the access.

Moreover, for each file its sensitivity can be set. Figure 2 shows the categories of sensitivity allowed by the Veolia Group.

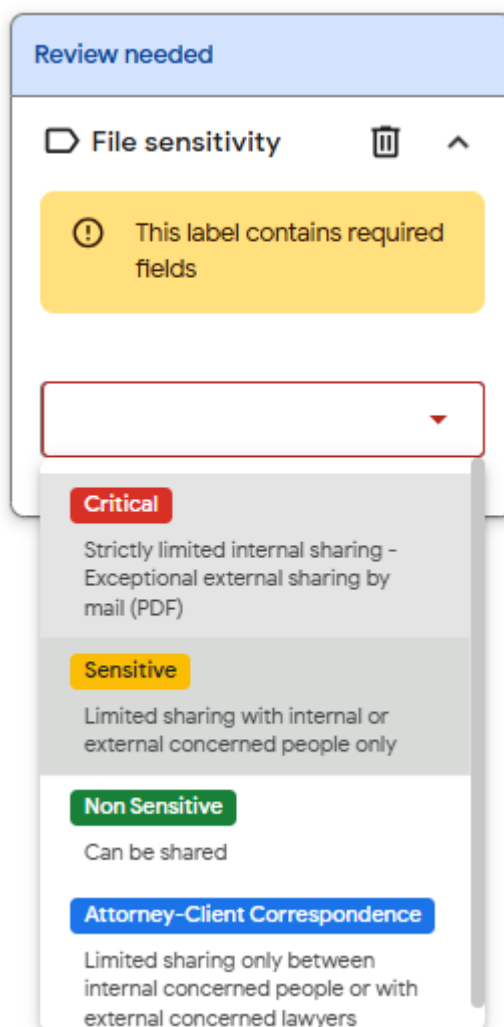


Figure 2 - Setting the sensitivity of a file in the shared folder

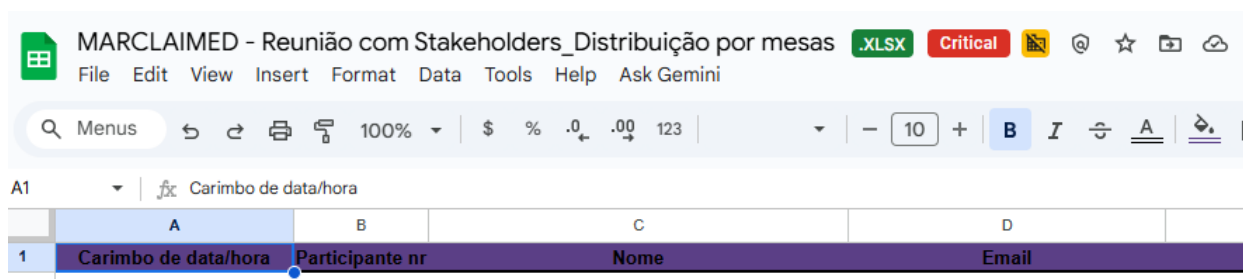


Figure 3 - Example of level of sensitivity for the Stakeholder register

CETAQUA, as coordinator, and the partners with access to the MARCLAIMED [Partners] shared drive and corresponding folders, are following the information systems security regulations, networks, and ICT uses required by the Veolia Group. Those rules and

regulations are given in the document “Normativa de Seguridad de los Sistemas de Información, redes y usos TIC”, in Spanish. Being this deliverable public, according to the Veolia Group rules, the Veolia document can not be included in this deliverable. Reviewers of the deliverable may ask the coordinator for its consultation.

4 Conclusions

Research Ethics and Research Integrity are fundamental pillars that underpin the credibility and excellence of research work. Building upon the achievements of Horizon Europe, the Horizon Europe program aims to further integrate ethics and integrity into the research approach from the outset.

The Ethics Mentor designated (Luc Gasser from EGM) is responsible for monitoring the ethics and data protection of the MARCLAIMED WPs. For the moment the highlights of the Ethics self-assessment conducted and the Ethics monitoring report for RP1, are as follows:

- For personal data, the retrospective analysis (M1-M18) confirmed that only minimal identifiers (email, first name, surname) and optional workshop information (gender, role, recordings) are collected, that processing rests on contract, legitimate-interest and consent bases, and that access is limited to admins and WP-specific staff with role-based controls.
- Technical safeguards and a ten-year retention schedule with scripted deletions were already in place, and no serious privacy concerns were identified.
- Regarding AI, the review showed that the MARVIS and PREDMAR models are trained on non-personal datasets, do not pose discrimination or stigma risks, and serve only as decision-support tools without replacing human judgment.
- Explainability work (feature importance, SHAP) exists in deliverables but not yet embedded in the system.

Overall, the RP1 retrospective found adequate data-governance and low AI-risk levels, providing a solid baseline for the enhanced, continuously monitored ethics framework that will govern RP2.

This deliverable serves as the first Report on Research Ethics and Data Protection, introducing the approach to ethics monitoring and an overview of the legal foundation, and outlines fundamental rules for ethical research conduct within the project. Ethics monitoring is an ongoing process that will continue until the end of the project, with the next Report on M36 documenting any ethical issues that arise.

During the second reporting period, the Coordinator and the Ethics Mentor, with the support of the WP leaders will continue monitoring all these aspects. An update and final version of this deliverable will be submitted by the end of the Project (M36 - January 2027) as D7.6 “Research Ethics and Data Protection Monitoring Report v2”.

5 References

¹Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (OJ L 295, 21.11.2018, p. 39).

²Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC ('GDPR') (OJ L 119, 4.5.2016, p. 1).

³The European Code of Conduct for Research Integrity.

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf

⁴Ethics and Data Protection Decision Tree.

<https://ec.europa.eu/assets/rtd/ethics-data-protection-decision-tree/index.html>

⁵EU Grants: How to complete your ethics self-assessment: V2.0 – 13.07.2021

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment_en.pdf

ANNEX 1 - MARCLAIMED Ethics self-assessment v1

1 HUMAN EMBRYONIC STEM CELLS AND HUMAN EMBRYOS	
Does your activity involve Human Embryonic Stem Cells (hESCs)?	NO
Does your activity involve the use of human embryos?	NO
Does your activity involve the use of other human embryonic or fetal tissues / cells?	NO

2 HUMANS	
Does your activity involve human participants?	NO
Does your activity involve interventions (physical also including imaging technology, behavioural treatments, tracking and tracing, etc.) on the study participants?	NO
Does your activity involve conducting a clinical study as defined by the Clinical Trial Regulation 536/2014 (using pharmaceuticals, biologicals, radiopharmaceuticals, or advanced therapy medicinal products)?	NO

3 HUMAN CELLS / TISSUES	
Does your activity involve the use of human cells or tissues?	NO

4 PROTECTION OF PERSONAL DATA		Additional information
Does your activity involve processing of personal data?	YES	Registering on the IDST requires providing a valid email address, a first name and a last name. Those are the only personal data that are collected. It is not planned to actually use those data in other ways than registration and identification of users.
Does it involve the processing of special categories of personal data?	NO	
Does it involve profiling, systematic monitoring of individuals, or processing of large scale of special categories of data or intrusive methods of data processing?	NO	
Does your activity involve further processing of previously collected personal data	NO	

5 ANIMALS	
Does your activity involve animals?	NO

6 THIRD COUNTRIES	
Will some of the activities be carried out in non-EU countries?	NO
Is it planned to import any material (other than data) from non-EU countries into the EU or from a non-EU country to another non-EU country?	NO
Is it planned to export any material (other than data) from the EU to non-EU countries?	NO
Does your activity involve low and/or lower-middle income countries?	NO

7 ENVIRONMENT, HEALTH AND SAFETY	
Does this activity involve the use of substances or processes (or technologies) that may cause harm to the environment, to animals or plants?	NO
Does this activity deal with endangered fauna and/or flora / protected areas?	NO
Does this activity involve the use of substances or processes (or technologies) that may cause harm to humans, including those performing the activity?	NO

8 ARTIFICIAL INTELLIGENCE		Additional information
Does this activity involve the development, deployment and/or use of Artificial Intelligence-based systems?	YES	MARVIS and PREDMAR tools involve Machine Learning systems. All systems will undergo “Trustworthy AI assessment list” evaluation of the HLEG AI.
Could the AI based system/technique potentially stigmatise or discriminate against people	NO	ML techniques involve forecasting environmental variables. It does not involve data that can be tied to specific people or groups of people
Does the AI system/technique interact, replace or influence human decision-making processes?	YES	The MARAISER aims to provide recommendations for decision-making based on (among others) the results of previously mentioned ML-based tools.
Does the AI system/technique have the potential to lead to negative social and/or environmental impacts either through intended applications or plausible alternative uses?	NO	As for any prediction model in general, bad results could lead to misinformed decisions by users of the tools. However, nothing specific to these ML tools in particular makes them more prone to misuse leading to various negative impacts.
Does the AI to be developed/used in the project raise any other ethical issues not covered by the questions above	NO	

9 OTHER ETHICS ISSUES	
Are there any other ethics issues that should be taken into consideration?	NO

ANNEX 2 - MARCLAIMED Ethics monitoring plan and report for RP1

The ethics monitoring plan will involve a recurring reassessment of the ethical issues that are relevant to the MARCLAIMED project; this reassessment will take the form of a questionnaire that is reviewed by the Executive Board at each board meeting. The questionnaire is a streamlined version of the EU ethics self-assessment, focusing solely on the questions most pertinent to the project.

The only two categories identified as pertinent for MARCLAIMED are:

- Protection of personal data - The IDST requires minimal personal identifiers (email, first name, surname) for authentication. Additional personal information is also collected during the workshops.
- Artificial intelligence - The IDST orchestrates AI models that may influence decision-making, potentially affecting individuals or groups. Ethical scrutiny is needed to avoid bias, discrimination, or unintended societal impact.

Ethics monitoring plan questionnaire

A – Protection of personal data

No.	Question
A1	What types of personal data are collected for the project?
A2	For what specific purposes are these data processed?
A3	What legal basis under GDPR justifies each processing activity?
A4	Who may have access to the personal data gathered for the project?
A5	Are technical and organisational safeguards in place (encryption, pseudonymisation, role-based access control)?
A6	Does the current handling of personal data raise any ethical concerns (e.g., re-identification risk, profiling, excessive retention)?

A7	What is the data-retention schedule, and how is deletion ensured?
A8	Are data subjects provided with clear information and mechanisms to exercise their rights (access, rectification, erasure, portability)?

B – Artificial Intelligence

No.	Question
B1	Which activities involve the development and/or use of AI-based systems?
B2	What datasets are used to train the AI models, and do they contain personal data or protected attributes?
B3	Could the AI system potentially stigmatize or discriminate against people?
B4	Does the AI system interact with, replace, or influence human decision-making processes?
B5	What explainability or transparency measures are built into the system (model cards, feature importance, user-facing explanations)?
B6	Does the AI system have the potential to lead to negative social or environmental impacts, either through intended applications or plausible alternative uses?
B7	Does the AI to be developed/used in the project raise any other ethical issues not covered by the questions above?
B8	What mitigation strategies are planned or already implemented for identified AI risks (bias mitigation, post-hoc audits, human-oversight protocols)?

This questionnaire will be reevaluated and updated by the consortium during the Executive board meeting, which occurs monthly, for the whole duration of RP2. This measure has not been applied during RP1, for which a retrospective monitoring report is provided instead. This report will answer the questionnaire to reflect the status of the project during RP1 regarding the ethics monitoring plan.

Retrospective Ethics Monitoring Report for RP1

A – Protection of personal data

No.	Question	Status RP1
A1	What types of personal data are collected for the project?	For IDST registration: - First name and Last name - Email address For the community of Practice (CoP): - First name and Last name - Email address - Gender - Role within the community - Sound and video recording that may include participant
A2	For what specific purposes are these data processed?	For the IDST, the data are not processed and are only used as basic user authentication and identification that is mandatory for security. For the CoP: - Information such as number of participants, gender and roles are used to provide statistics on the workshops (participation percentage, gender balance, ...) - Sound and video recording may be used for communication and dissemination of the project's

		results (promotional material, workshop reporting, ...)
A3	What legal basis under GDPR justifies each processing activity?	Contract (Art. 6 (1)(b)) – the data are necessary to fulfil the contractual relationship with the user (e.g., providing access to the IDST). Legitimate interests (Art. 6 (1)(f)) – the platform has a legitimate interest in ensuring that only authorised persons can log in and that actions can be attributed to a known individual, as well as in monitoring diversity, complying with EU reporting obligations, and improving equality-of-opportunity policies. Consent (Art. 6 (1)(a)) – applicable for CoP, a consent form is being filled, refer to Annex 3
A4	Who may have access to the personal data gathered for the project?	Only admin users of the IDST may see the other registered users, regular users may not see who is registered on the IDST. Currently only the WP2 (Luc GASSER, EGM) has access to that information) For the CoP, data is accessible by WP3 staff.
A5	Are technical and organizational safeguards in place (encryption, pseudonymisation, role-based access control)?	Data regarding IDST users is protected by role-based access (only admin can see/edit/delete) The data collected for the CoP is anonymized before being used for statistics and being stored.

A6	Does the current handling of personal data raise any ethical concerns (e.g., re-identification risk, profiling, excessive retention)?	No particular concern has been identified by the consortium.
A7	What is the data-retention schedule, and how is deletion ensured?	As MARCLAIMED is a Horizon Europe funded project, the consortium is obliged to store data for up to 10 years after the end of the project (unless an extension is requested by auditors). When this happens, the collected data are being treated in compliance with Regulation No. 45/2001. After this time period and given the fact that no other legitimate reasons for further storage arise personal data will be deleted. Automatic scripts based on user creation date will be deployed.
A8	Are data subjects provided with clear information and mechanisms to exercise their rights (access, rectification, erasure, portability)?	Clear information on all the data being gathered and mechanisms to control them is provided in the privacy policy of MARCLAIMED, which is available publicly on the website: https://marclaimed.eu/privacy-policy/

B – Artificial Intelligence

No.	Question	Status RP1
B1	Which activities involve the development and/or use of AI-based systems?	MARVIS and PREDMAR tools are AI-based systems, as they are built upon Machine Learning and/or Deep Learning models. The IDST thus uses AI-based systems as it is used to configure, execute and show the results of those models.

B2	What datasets are used to train the AI models, and do they contain personal data or protected attributes?	The AI models were trained on datasets provided by the demo site for this specific purpose. No personal data was used for training the AI models.
B3	Could the AI system potentially stigmatize or discriminate against people?	The AI system is used exclusively to predict future environmental variables and does not involve any kind of forecast that could be linked to individuals or groups of real people. Thus, the consortium does not consider that the scopes of the AI models used could stigmatize or discriminate against people.
B4	Does the AI system interact with, replace, or influence human decision-making processes?	One of the main goals of the IDST is to present the results provided by the AI models to stakeholders, to provide them with the most information to make the best decision. However, the AI system simply provides some forecasts and will not replace any human decision-making. Interact or influence: yes, replace: no.
B5	What explainability or transparency measures are built into the system	The tool development team has explored model explainability extensively during the development process, with methods such as correlation matrix, feature importance and SHAP (SHapley Additive exPlanations). The results found with these methods are presented in the deliverables from WP1 (which are publicly available), however as of now, no measure directly built into the system. The consortium acknowledged and will

		consider implementing some during RP2 if deemed feasible.
B6	Does the AI system have the potential to lead to negative social or environmental impacts, either through intended applications or plausible alternative uses?	No possible alternative use of the AI models were identified. However, as for any predictive models, faulty predictions or forecasts could lead to negative social or environmental impact through intended uses.
B7	Does the AI to be developed/used in the project raise any other ethical issues not covered by the questions above?	The consortium has not found any additional issues.
B8	What mitigation strategies are planned or already implemented for identified AI risks (bias mitigation, post-hoc audits, human-oversight protocols)?	The principal mitigation strategy is a continuous, consortium-wide monitoring regime that systematically evaluates the outputs of every AI model. Through automated performance dashboards, regular statistical audits, and expert human-in-the-loop reviews, the consortium will verify that predictions remain accurate, unbiased, and aligned with predefined safety thresholds before they are acted upon.

ANNEX 3 - MARCLAIMED Template Personal data consent Form

MARCLAIMED: Integrated Decision Support Tool for Reliable and Affordable Application of Managed Aquifer Recharge with Alternative Water Resources in River Basin and Drought Management Plans

Communities of Practice (CoP)

You have been invited to join MARCLAIMED [demo site identification] CoP as a representative of a key sector that plays a pivotal role in developing MAR and AWR in your region/city. Your sector's contribution is crucial, and the Project team is eager to hear your valuable opinion on the current state of water management and the related policies and legislation.

The information collected (sound and video recordings, written notes) will only be used by the Project research team (members of the consortium) and will be treated with the utmost confidentiality. Your data will be anonymized prior to analysis and stored in secure computers and servers accessible only by the research team directly involved in the CoP. After being anonymized and analyzed, the information might be used for the purposes of communicating and disseminating the Project results, but your opinions will not be directly identified, ensuring your privacy and data security. The data will be stored only for as long as it is necessary to carry out these analyses, and no data will be kept beyond the end of the Project (January 2027).

There will be at least one meeting like this per year, in each of the demo sites involved in MARCLAIMED, and your participation is invaluable. We are deeply grateful for your contribution and hope that you will find this debate both useful and engaging!

Should you need more information on the local activities of the project or any clarification regarding the use of data generated during CoP activities, please feel free to contact the CoP Coordinator at any time:

[Insert contact details of CoP Coordinator]

In case you need more information on the overall project contents and its approach or to issue a complaint regarding the use of your data in this project, you can contact the scientific manager:

[Name and e-mail of the scientific manager of each demo site]

You can withdraw your participation at any time and request access to your personal data and information, as well as request them to be deleted should you wish so, through the contacts mentioned. There is no consequence if you decide to give up, and you don't need to provide any reason why.

In fulfilment of the EU General Data Protection Regulation (GDPR, 2016/679), the MARCLAIMED team kindly requests your confirmation and permission for the following:

Informed consent form

	Yes	No
I have understood the objectives of this research, and they were adequately explained to me in a language and terms I can fully understand.		
I had the opportunity to ask questions and clarify any doubts.		
I have voluntarily accepted to participate in the CoP discussion groups and join the activities proposed during this event.		
I understand that I can withdraw my participation at any time and request that my personal data and information be deleted without any consequences or having to give any specific reason.		
I understand that I can refuse to answer and give my opinions on any topic if I don't want to.		
I understand that my personal data (e.g., name, employer, phone number, email address, and post address) will only be collected to invite me to and organize the CoP meetings. It will not be used for other purposes or transmitted to any third parties outside the MARCLAIMED Project.		

I understand that my opinions and information conveyed during the meetings may be used and directly quoted in conference communications, scientific publications, policy briefs, and reports, but they will be anonymized beforehand, ensuring the principles of confidentiality and privacy.		
I understand that in any case where there might be the need to quote my opinions and attribute them to my personal name, I will be informed first and asked for specific and written permission for that purpose (be it a journal article, will be informed first and asked for specific and written permission for that purpose (be it a journal article, project newsletter, conference communication, or any other purpose).		
I understand that anyone can access and use my data and information only if I agree to the confidentiality and privacy requirements stated above.		
I agree that my anonymized data will be securely stored on the Project online repository and in public open-access repositories so that they can be used for future reference, communication, and publications about water management issues.		
I agree to concede any author rights that I might retain regarding the information conveyed during the CoP meetings for purposes of citation in the MARCLAIMED Project's publications and communications.		

Full name: _____

Place and date: _____

Signature: _____

Informed consent form

Collection of video, images and sound

Video, photos, and sound collected during this meeting will only be used by the MARCLAIMED team, in accordance with EU GDPR, to transcribe and analyze the information conveyed by participants in support of the research publications and reports mentioned above.

All personal data will be anonymized prior to analysis and will not be shared with third parties, being used only for the purposes of this Project, as mentioned in the information sheet. All data will be stored in devices protected by password and in the Project online repository with restricted access and will only be accessed by the MARCLAIMED team members. In the case that short video clips or photos are used for communicating the activities of the Project on its website or newsletter, we will always seek specific permission from the CoP participants who appear on the video/audio recordings, respecting your right to control the use of your image and voice.

	Yes	No
I give my permission for the collection of audio recordings during this meeting		
I give my permission for the collection of video images during this meeting		
I give my permission for the collection of photos during this meeting		
I authorize that sound is used for the purposes stated above		
I authorize that images are used for the purposes stated above		
I understand that I can request that my images, video or sound be deleted at any time		

Full name: _____

Place and date: _____

Signature: _____

MARCLAIMED will support decision makers to integrate Managed Aquifer Recharge (MAR) with Alternative Water Resources (AWR) in River Basin and Drought Management Plans supporting the adaptation and resilience of structural supply systems in the context of climate change. The main outcome will be the MARCLAIMED Integrated Decision Support Tool (IDST) that will provide solutions to tackle existing and emerging threats and support decision making and adaptation policies.



MARCLAIMED



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