Deliverable D1.1 Project Handbook

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CULTURATI

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Short Description	The Project Handbook of CULTURATI is a reference document for all partners on the project objectives, planning and implementation, emphasizing the quality and effectiveness of the work packages and the plans to exploit results. This deliverable defines the project organization, planning, management, and execution, as well as procedures, roles, and responsibilities. This Project Handbook is prepared in line with PM² Project Management Methodology Guide 3.0.1 developed by the European Commission.

History of Changes			
Date	Version	Author	Remarks
31 March 2023	Draft 0.1	Eda Gürel	First version

| 6 April 2023 | Final 1.0 | Eda Gürel | Revised after review |

Executive Summary

The Project Handbook of CULTURATI aims to guide all project partners and support them in finding relevant information about the project objectives, planning, and implementation.

Project management is the process of planning, executing, and controlling projects to achieve specific goals and objectives. One critical component of successful project management is the development of a project handbook. A project handbook is a comprehensive document that outlines all aspects of a project, from its goals and objectives to its timelines, deliverables, and resource requirements. A project handbook aims to provide stakeholders with a clear and comprehensive guide to the project, outlining its scope, objectives, risks, and expectations. It serves as a reference point for all project stakeholders, ensuring everyone is working towards the same goals.

Thus, this deliverable provides information on the project management approach, scope, objectives, organization, roles and responsibilities, planning and procedures, communication, change, resource, and conflict management. However, it excludes the Quality and Risk Management and Ethics Assessment, which will be covered in the D1.2 Quality and Risk Management Report and D1.3 Ethics Assessment Report to ensure project quality control and assurance. Thus, this document will and should be complemented by the following deliverables and plans; D1.2 Quality and Risk Management Report, D1.3 Ethics Assessment Report, D1.4 Data Management Plan 1, D1.5 Data Management Plan 2, D1.6 Training Handbook and Audio-Visuals, and D6.1 Dissemination, Exploitation, Communication Plan and Strategy.

This Project Handbook is based on the terms and conditions defined in the Grant Agreement and its Annexes and the specifications set in the Consortium Agreement. However, the Project Handbook is a living document and will be updated according to the project's needs as it evolves. This document will be open access on the project's website as the other public deliverables and will be kept up to date.

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1. Introduction

This Project Handbook aims to guide all CULTURATI project partners and support them in finding relevant information about the project objectives, planning, and implementation. Thus, it aims to provide detailed descriptions of the management structure and processes, communication, procedures, roles, and responsibilities related to implementation and control. It also describes how the project will be coordinated and executed from a quality perspective. However, this Project Handbook excludes Quality Assurance and Risk Management, which will include Deliverables Acceptance Management in the D1.2 Quality and Risk Management Report.

The implementation of the project will be continuously monitored, corrected when necessary, and improved. Accordingly, the Project Handbook is a living document and will be updated throughout the project lifecycle.

2. Project Management Approach

This section describes the project management methodology that will be used to plan, execute, monitor, and control the project. The project management methodology of CULTURATI is based on the PM² Project Management Methodology developed by the European Commission. It is a free, open-source methodology designed to be adaptable to a wide range of projects, including RIA projects with strategic objectives for society, such as CULTURATI.

PM² Project Management Methodology is chosen because it is based on best practices from various project management approaches, including Agile, PRINCE2, and PMI's PMBOK Guide. It emphasizes the importance of stakeholder engagement, risk management, and quality assurance and provides guidelines and templates for each project lifecycle stage. Thus, it is organized into four main phases: initiation, planning, executing, and closing, each of which is further broken down into specific processes and tasks. Key features of the PM² methodology include tailoring, stakeholder engagement, risk management, and quality assurance (European Union, 2021).

Since CULTURATI employs a User-Centered Design (UCD) approach emphasizing stakeholder engagement, PM² Project Management Methodology is chosen for CULTURATI. Nevertheless, the User-Centered Design (UCD) approach prioritizes users' needs, preferences, and behaviors in the development process of products, services, or systems. UCD involves understanding the users' requirements, conducting research and testing, and iterating design solutions until they effectively meet the users' needs. Thus, it will inform our project management decisions. Accordingly, PM²

Project Management Methodology will be used as a framework to manage the process of planning, executing, and delivering the CULTURATI project within time, budget, and scope constraints.

We believe that by combining User-Centered Design (UCD) with the PM² Project Management Methodology, we can effectively develop CULTURATI that meets users' needs while managing the project effectively. Integrating UCD into PM² will help ensure the project team focuses on the user's needs and requirements throughout the project lifecycle. In CULTURATI, we will identify user needs and integrate them into the design and development process by conducting user research, testing, and prototyping. Thus, PM² will provide a framework for managing the project's budget, resources, and scope, while UCD will ensure that the project meets the users' needs and expectations.

PM² strongly emphasizes stakeholder engagement (both internal and external) throughout the project lifecycle. This includes identifying and managing stakeholders, gathering requirements, and ensuring stakeholders are informed and involved in decision-making. To this end, we have the following deliverables in CULTURATI, D3.1 National Consortium/Network Report – Turkey (M7) in WP3 and D4.1 National Consortium Network Report – Europe (M17) in WP4.

Additionally to PM^2, the project will follow other methodologies. In particular, Agile for the management of IT development. This approach emphasizes collaboration, flexibility, and rapid iteration. It involves breaking the project down into smaller chunks called sprints and continuously adjusting the plan based on feedback. Since our project involves AI, using an Agile project management approach, specifically the Scrum framework will be very useful because of the following reasons;

- Flexibility: AI projects can be complex and unpredictable. The Agile approach allows for flexibility and adaptability in response to changing requirements or feedback.
- Iterative Development: AI projects often involve trial and error. Agile's iterative development approach allows for rapid testing and refinement of AI algorithms, helping to improve accuracy and performance.
- Collaboration: AI projects often require collaboration between developers, data scientists, and subject matter experts. Scrum encourages collaboration through regular team meetings and a focus on delivering value to the customer.
- Feedback: AI models rely heavily on data inputs and feedback loops. The Agile approach emphasizes continuous feedback and improvement, which can help refine and improve AI models over time.

- Customer focus: AI projects are ultimately aimed at delivering value to the customer. Scrum's focus on the product backlog, prioritization, and regular delivery of working software ensures that customer needs remain central to the project.

2.1.1 Project Management Tool

The technology developers of CULTURATI are using several tools for project management including Trello, Confluence and Gitlab. In particular, for the CULTURATI project, we will utilize Trello. Trello is a web-based project management and collaboration tool that allows users to organize and prioritize their tasks and projects using a digital board.

Trello works by creating a virtual board, which can be customized with different columns and lists to represent different stages of a project. Users can then create cards within each column, which represent individual tasks or items that need to be completed. These cards can be moved around the board, assigned to team members, given due dates, and labeled with different tags or colors to help with organization and tracking.

Trello also integrates with a variety of other apps and services, such as Slack, Google Drive, and GitHub, to allow for seamless communication and collaboration across different platforms. It is used by individuals, teams, and organizations of all sizes to manage projects, track progress, and improve productivity.

3. Project Scope

This section outlines what the project will deliver, its objectives, deliverables, and the project's boundaries with the project timeline.

3.3 Project Description and its Objectives

The CULTURATI project is a Research Innovation and Action (RIA) project. It aims to develop, test, and validate an innovative online platform utilizing state-of-the-art digital and cutting-edge technologies to create content collectively for cultural heritage and arts across Europe. CULTURATI is a global content platform that delivers the content in its database to end-users (consumers of cultural heritage and arts) in customized games (Q&A games/treasure hunt-like game) and routes to attract and engage them with cultural heritage and arts more closely. It can be used by venue-based Cultural and Creative Industries (CCIs), professionals, and citizens. Thus, CULTURATI aims to close the gap between the demand and supply sides of the cultural and creative sectors by directly connecting them.

Providing customized games and routes through mobile devices at venue-based sites, CULTURATI works with an algorithm to optimize the number of visitors in each location dynamically and proactively by respecting carrying capacities set for them by their managers. Utilizing state-of-the-art technologies (e.g. cloud and mobile technologies, Internet of Things (IoT), sensors-people counters, and Artificial Intelligence), CULTURATI aims to enhance the visitor experience by providing customized information, managing visitor flows on-site, and ensuring social distancing between them in case of a pandemic.

In short, CULTURATI project will **build a sustainable and inclusive cultural-educational ecosystem with visitor and capacity management** that will aim to achieve the following strategic objectives;

- **Strategic Objective 1:** To enhance and support collaboration between private CCIs, public and cultural institutions, and everyone in the community to promote Europe's culture, values, and interests,
- **Strategic Objective 2:** To increase accessibility, awareness, understanding, and participation of cultural heritage and arts,
- **Strategic Objective 3:** To enhance the audience experience by using digital solutions and cutting-edge technologies,
- **Strategic Objective 4:** To preserve cultural heritage and make them more resilient by preventing deterioration due to overcrowding and in case of a pandemic,
- **Strategic Objective 5:** To increase economic and socio-cultural development.

To achieve its overall and strategic objectives, the research, development, and innovation objectives of this project (and their mapping to WPs) are;

- **Objective 1:** To develop, verify and evaluate main-steam technologies for CULTURATI for content and visitor-flow management with two subsystems; education and navigation (WP2),
- **Objective 2:** To test and verify the technological outcomes in operational environments consisting of two pilot studies (WP3),
- **Objective 3:** To demonstrate the fully functional prototype to show its operational feasibility at five pilot venues (WP4),
- **Objective: 4:** To Integrate AI into CULTURATI to automate the content management and improve the performance of its technological stack with AI (WP5).

In addition to its research, development and innovation objectives, the project has the following **communication, dissemination, and exploitation objectives**;

- **Objective 5:** To communicate and disseminate CULTURATI (WP6),
- **Objective 6:** To exploit CULTURATI to maximize its impacts (WP6).
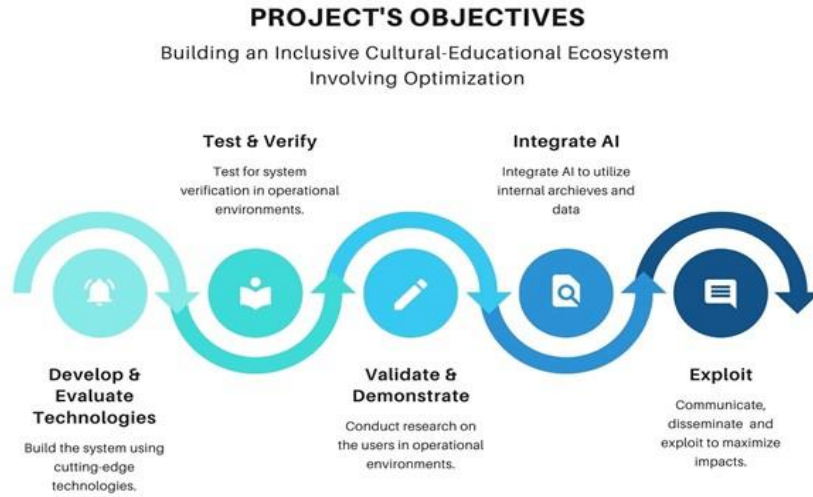
Figure 1. Project's Objectives

3.4 Technological Outcomes of CULTURATI

In line with the objectives of the project, the technological outcomes of CULTURATI includes the development, testing, validating and demonstrating the following technological outcomes;

- an online global platform for CCIs and citizens to create content, and
- its application for mobile devices,
- a mobile and desktop web application for end-users to access content on-site and online.

3.5 Project Timeline and Scope

The CULTURATI project starts on 1 February 2023 with a runtime of 36 months and ends on 31 January 2026. We defined three stages in our project as the following;

Table 1. Project Timeline

Stage	Months	Period covered	Scope
Stage 1	M1-M15	01.02.2023-30.04.2024	Development of CULTURATI
Stage 2	M13-M36	01.02.2023-31.12.2026	Making formative and summative evaluations
Stage 3	M9-M12, M22-M36	01.10.2023-31.12.2026	Integrating AI into CULTURATI

- **Stage ONE Development of CULTURATI (M1-M15)** will focus on developing, evaluating, and testing main-stream technologies of the system, which will have two users; (1) content creators and (2) consumers of cultural heritage and arts (end-users). At this stage, the multiple components of the technology will be developed, tested, and evaluated.

- **Stage TWO Formative and Summative Evaluations of CULTURATI (M13-M36)** will focus on more rigorous testing than technology and get feedback from the users in the operational environments to further validate and demonstrate the capabilities and usability of the system. At this stage, we will make formative and summative evaluations involving end-users and test CULTURATI around our conceptual model.

- **Stage THREE Integration of AI (M9-12, M22-36)** will focus on integrating AI into CULTURATI to help CCIs and citizens produce creative content by utilizing the internal archives and data and then curating this content in a logical and organized way through games and routes. In addition, AI will involve graph-based route recommendations for visitor and capacity management.

4. Project Organization

This section lists all the people (internal stakeholders) involved in the CULTURATI project and their roles and responsibilities. This section also includes organization structure and decision making.

4.1 The Consortium

This project is inter-disciplinary and multi-national, therefore, the consortium involves researchers from different backgrounds, including computer science, marketing, management, sociology, anthropology, tourism, and cultural studies with publications in journals with high impact factors. The technology partners are SMEs providing novel tools and technology with national and international experiences in various areas, including user-centred technologies, video analysis, tracking and monitoring, open-data, innovative Smart City solutions to provide immersive experiences to consumers. All pilot sites are well-known cultural heritage attractions with active engagement with their visitors, audiences, and public in various ways to ensure the exploitation of the project results. Accordingly, the consortium comprises 14 partners from Finland, Germany, Italy, Spain, Türkiye, and the UK.

The consortium partners, their representatives, and their primary roles in CULTURATI are listed below. A detailed contact list of all people working on this project is available on Moodle document-sharing platform.

Table 2. The Consortium

No	Participant Organization and Representatives	Short Name	Country	Primary role
1	Bilkent Universitesi Vakıf, Türkiye Dr Eda Gurel	BU	Türkiye	Coordinator, Research University, Technology Developer
2	Haaga Helia Ammattikorkkeakoulu Oy Dr Mario Passos Ascencao	HHU	Finland	Research University
2.1	Porvoon Kaupunki (Affiliated Entity) Ms. Sari Myllynen	HHU-PK	Finland	Research Site
3	Rahmi M. Koç Müzecilik ve Kültür Vakfı Rahmi M. Koç Müzesi İktisadi İşletmesi Ms. Mine Sofuoglu	RMK	Türkiye	Research Site
4	Oktem Serdar Vural Mr. Serdar Vural Oktem	SVO	Türkiye	Data Management and Protection
5	Universita Degli Studi Di Foggia Prof. Claudio Nigro	UNIFG	Italy	Research University
6	IOTIQ GMBH Dr. Metin Tekkalmaz	IOTIQ	Germany	Technology Developer
7	NIMBEO Estrategia Innovacion Sl. Dr. Angel Lagares	NIMBEO	Spain	Technology Developer
8	Universidad Carlos III de Madrid Prof. Juan Miguel Gomez Berbis	UC3M	Spain	Technology Developer
9	Ankara Valiligi Ms. Naciye Cakirer	AG	Türkiye	Research Site
10	Meridaunia Soc. Cons. ARL Ms. Agela Maria Loporchio	MSCA	Italy	Research Site
11	Touch Td Ltd. (Associated Partner) Dr. Julie Scott	TTD	UK	DEC Strategy and Management
12	Oxford Brookes University (Associated Partner) Prof. Levent Altınay	OBU	UK	Research University
13	Blenheim Palace Heritage Foundation (Associated Partner) Mr. David Green	BP	UK	Research Site

4.2 Contact Persons

Coordinator and Project Manager: Dr. Eda Gurel

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4.3 Project Management and Organization Structure

As defined in the Grant Agreement, the project management and organizational structure of the CULTURATI project is presented in Figure 2. It is designed to support the overall project management to ensure effective organization, decision-making, coordination, communication (both internal and external), implementation, as well as quality control and assurance, and innovation development.
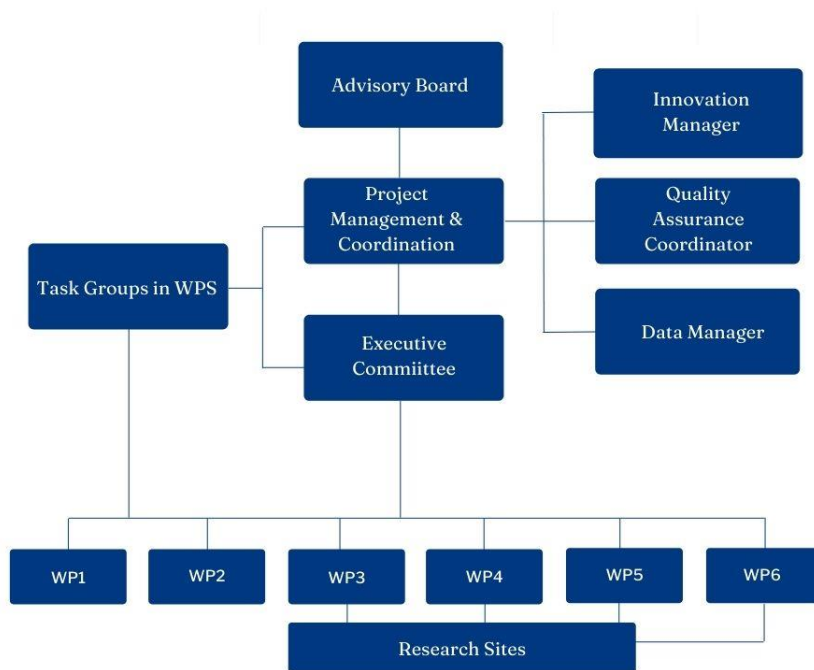
Figure 2. Management Structure of CULTURATI

The organizational structure of the consortium comprises the following key Consortium Bodies; the General Assembly, the Executive Board, and the Coordinator. Accordingly, the main roles in the CULTURATI management structure are;

- General Assembly

- Executive Committee

- Project Management and Coordination

- Advisory Board (expert and ethics)

- Innovation Manager

- Quality Assurance Manager

- Data Manager

- Work Package Leaders

- Task Groups in WPs

- Research Sites

Each consortium body has specific responsibilities which are presented below.

4.3.1 General Assembly

As described in the Consortium Agreement, the General Assembly is the ultimate decision-making body of the consortium. As defined in the Consortium Agreement, the General Assembly is responsible for deciding on the (1) content of the project (Annex 1), (2) finances and major budget deviations (Annex 2), (3) intellectual property rights (IPR), (4) the evolution of the consortium (e.g. partners entering and leaving the consortium), (5) appointments (e.g. members of the external advisory board), and (6) resolving disputes on management level.

It consists of one representative from each beneficiary and meets at least once a year. Therefore, as part of the Kick-off Meeting, the first General Assembly was held on 7 March 2023 in Ankara, Türkiye. According to the decisions taken, the following are the members of the General Assembly;

- Eda Gurel (Bilkent University; Coordinator)

- Claudio Nigro (University of Foggia)

- Mario Passos Ascencao (Haaga-Helia University and Porvoon Kaupunki – Affiliated Partner)

- Julie Scott (Touch TD Ltd.)

- Levent Altinay (Oxford Brookes University)

- David Green (Blenheim Palace Heritage Foundation)

- Naciye Cakirer (Ankara Governorship)

- Angela Loporchio (Meridaunia)

- Angel Lagares (NIMBEO)

- Ozer Aydemir (representing Oktem Serdar Vural – SVO)

- Bilge Ozdemir (representing IOTIQ)
- Mine Sofuoglu (Rahmi Koç Museums)
- Juan Miguel Gomez Berbis (University of Carlos III de Madrid)

4.3.2 Executive Committee

As described in the Consortium Agreement, the Executive Board is the supervisory body for the execution of the Project, which meets at least quarterly basis and reports to and is accountable to the General Assembly. As defined in the Consortium Agreement, the Executive Committee is (1) in charge of the operational activities of CULTURATI and will oversee the execution of CULTURATI and report to the General Assembly, (2) support the Coordinator in preparing meetings with the Granting Authority and in preparing related data and deliverables, (3) prepare the content and timing of press releases and joint publications by the consortium or proposed by the Granting Authority in respect of the procedures of the Grant Agreement Article 17 and Annex 5 Section "Communication, Dissemination, Open Science and Visibility" and of Section 8 of the Consortium Agreement, (4) resolve disputes within the consortium, and, in case not being able to do so, bring the matter of dispute to the General Assembly, (5) oversee the innovation management and promotion of the uptake of innovations, (6) identify risks and contingency plans, follow-up of ethical and gender issues.

According to the Consortium Agreement, the Executive Board consists of the Coordinator and the Parties' representatives as defined in Figure 2 Management Structure of CULTURATI involving all Work Package Leaders and appointed to it by the General Assembly. Therefore, in the first General Assembly held on 7 March 2023, the following members were appointed as the members of the Executive Committee;

- Bilkent Universitesi Vakif
- NIMBEO
- Rahmi Koç Museums
- IOTIQ
- Touch TD Ltd.
- University of Carlos III de Madrid

The General Assembly decided to include the University of Carlos III de Madrid in the Executive Committee as it is responsible for the Quality Assurance Coordination in the project. One representative from each partner (see Table 2) is making decisions on behalf of their institutions.

Since the Executive Committee is responsible for the operational activities of the project, it collects information on the progress of the project, examines that information to assess the compliance of the project with the Consortium Plan and, if necessary, proposes modifications of the Consortium Plan to the General Assembly.

4.3.3 Project Management and Coordination

The Project Coordinator Bilkent University (BU) handles the Project Management and Coordination. Project Coordinator plans overall project management and execution according to the project's Description of Action and Consortium Agreement. In particular, as defined in Annex 1 of the Grant Agreement, the project coordinator is responsible for (1) coordinating, planning, monitoring, and managing the project, (2) representing CULTURATI externally, (3) ensuring the required quality throughout the entire project duration, (3) coordinating the fulfillment of the partners' obligations towards the EU from the legal, contractual, financial, and administrative standpoint, (4) ensuring effective communication within the consortium and with the EU, (5) measuring and documenting impact.

In addition, the Project Coordinator is the legal entity acting as the intermediary between the Parties and the Granting Authority. Thus, in addition to its responsibilities as a Party, the Project Coordinator performs the assigned tasks described in the Grant Agreement and the Consortium Agreement.

Eda Gürel is both the Project Coordinator and the Project Manager at CULTURATI.

4.3.4 Advisory Board

There are two types of advisors in this project; expert and ethics. External Expert Advisory Board members will be appointed and steered by the General Assembly. Mainly, the responsibilities of the External Expert Advisory Board include (1) advising the consortium of any societal, ethical, or policy issues that may influence the project implementation, (2) suggesting any changes to project direction that may maximize the benefits of the project, and (3) supporting the dissemination and exploitation of the project results. The board involves three or more voluntary individuals.

On the other hand, the Expert Independent Ethics Advisor is a requirement by the European Commission to ensure ethical compliance throughout the CULTURATI project. The appointment of

an External Independent Ethics Advisor with relevant expertise in ethics of AI and ethics research with human participants emerged as a requirement during the grant agreement process in line with the suggestions of the European Commission to monitor the ethical concerns related to this project. Nevertheless, CULTURATI aims to identify, test, and evaluate the project's core system by integrating AI technologies, as well as test, validate and demonstrate the main functionalities of AI on the users, and make experiments in the non-EU countries (Turkey and the UK). Therefore, the project raises questions about research ethics and the ethics of AI. Accordingly, an independent Ethics Advisor with relevant expertise in AI and ethics of research with human participants was deemed necessary by the European Commission. The General Assembly appointed Dr. Hüseyin Sungur Kuyumcuoğlu as the Independent Ethics Advisor on 7 March 2023, as agreed in the Consortium Meeting on 17 February 2023. According to the Grant Agreement, the External Independent Ethics Advisor must report in M1, M6, M12, 24, and M36. The first report is submitted in M1.

4.3.5 Innovation Manager

As identified in the Grant Agreement, IOTIQ (Dr. Metin Tekkalmaz) is responsible for effective innovation management in the CULTURATI project. In particular, the innovation management of the CULTURATI project will revolve around integrating AI and IoT to provide solutions for visitor and capacity management, content creation, and curation.

Thus, the Innovation Manager will be responsible for identifying new and innovative ways to leverage AI and IoT technologies to drive innovation and value creation. This will involve staying up-to-date with the latest AI and IoT trends and developments, evaluating their potential impact on the business and for CULTURATI in particular, and identifying opportunities for AI-powered innovation. In addition to identifying opportunities, the innovation manager will manage the innovation process, from ideation to implementation. Therefore, he will work closely with cross-functional teams, including data scientists, software engineers, and stakeholders (research sites), to develop and test new AI applications, products, or services in the CULTURATI project. The innovation manager will also manage risks associated with using AI, including ethical concerns, regulatory compliance, and potential reputational harm. Accordingly, an extensive part of Innovation Management will involve analytical methods, including risk analysis and benchmarking. Based on the insights gained through these methods, the CULTURATI project will have a solid foundation to decide on areas for innovation activities and define specific initiatives.

4.3.6 Quality Assurance Manager

As identified in the Grant Agreement, Universidad Carlos III de Madrid (Prof. Juan Miguel Gomez Berbis) is responsible for Quality Assurance in the CULTURATI project. More specifically, the Quality Assurance Manager will ensure that the CULTURATI project meets specific quality standards and specifications considering the unique challenges and risks associated with AI development. This will involve developing and implementing project-specific quality control processes, creating and managing quality metrics that align with project goals, and conducting audits to identify areas for improvement. Additionally, the Quality Assurance Manager will collaborate with all project package leaders, stakeholders (research sites), and team members to ensure that quality is integrated into all aspects of the CULTURATI project. This includes defining quality requirements, ensuring the project adheres to industry best practices, and managing quality-related risks. Ultimately, the Quality Assurance Manager will ensure that the project meets or exceeds the quality expectations while remaining within scope, schedule, and budget constraints.

Specific to AI, the Quality Assurance Manager will ensure that the AI system is being developed following ethical principles and industry best practices and that the system produces accurate and reliable results. Therefore, he will work closely with the development team to define and implement testing protocols that ensure the AI system meets performance and functionality requirements. Additionally, the Quality Assurance Manager will oversee the training and testing data used to develop and test the AI system, ensuring that the data is diverse, representative, and bias-free. He will also ensure that the AI system's decision-making processes are transparent, explainable, and auditable, as this is crucial for gaining user trust and regulatory compliance. Overall, the role of a Quality Assurance Manager of CULTURATI will ensure that the AI system is developed and tested to the highest possible standards and meets the pilot sites' needs and expectations while minimizing risks and potential harm.

4.3.7 Data Manager

As identified in the Grant Agreement, Serdar Vural Öktem, a micro-entity specialized in Aigle development, is responsible for data management and protection. In particular, he will ensure that the data is properly managed throughout the lifecycle, from collection to disposal. Accordingly, this will involve developing and implementing data management policies and procedures that adhere to regulatory and ethical guidelines, and ensure the data is accurate, complete, and secure. The Data Manager will also work closely with data scientists, software engineers, and pilot sites to identify and prioritize data needs and ensure that the data is highly relevant to the project goals.

Additionally, the data manager will oversee the data integration and transformation processes required to prepare the data for use in AI models or applications and ensure that the data is properly labeled and annotated to support AI training and validation. Since CULTURATI will involve data created and curated by AI, the Data Manager will ensure that the data is managed to maximize its value and minimize risks while also adhering to ethical, legal, and regulatory requirements.

4.3.8 Work Package Leaders

There are seven Work Packages in the CULTURATI project including WP7 Ethics Requirements. Each Work Package has a Work Package Leader responsible for overseeing the activities of a specific work package, which is a subset of the project defined by a set of specific objectives and tasks. The Work Package Leaders are responsible for ensuring that the work package is completed on time, within budget, and to the required quality standards. They are responsible for developing and maintaining a work package plan, which includes a detailed breakdown of tasks, timelines, and resource requirements. They also ensure that the work package is integrated effectively with the overall project plan, and that any issues or risks are identified and addressed in a timely manner. Additionally, the Work Package Leaders are responsible for managing a team of project members assigned to the work package, including assigning tasks, monitoring progress, and providing feedback and guidance as needed. They are also responsible for reporting on the status of the work package to the project manager and ensuring that any changes or deviations from the original plan are properly documented and communicated. Therefore, the Work Package Leaders' role is critical to ensuring that the project's objectives are achieved in a timely, efficient, and effective manner.

The CULTURATI project is organized into seven Work Packages with their Work Package Leaders as listed below;

- WP1 Project Management and Coordination, Work Package Leader: BU
- WP2 System Development and Evaluation, Work Package Leader: NIMBEO
- WP3 System Testing and Verification, Work Package Leader: RMK
- WP4 System Validation and Demonstration, Work Package Leader: BU
- WP5 AI Integration, Work Package Leader: IOTIQ
- WP6 Communication, Dissemination and Exploitation, Work Package Leader: TTD
- WP7 Ethics Requirements, Work Package Leader: BU

4.3.9 Task Groups in WPs

There are 34 Task Groups in six Work Packages (excluding WP7 Ethics Requirements) in the CULTURATI project. The roles of the Task Groups in Work Packages vary depending on their specific tasks and objectives, involving a combination of technical, analytical, and communication responsibilities related to technology development, data collection, analysis, and dissemination. Since the CULTURATI project is a RIA project, it involves technology development involving IoT and AI and testing on users at venue-based CCI pilot sites. Therefore, the Task Groups in Work Packages have a variety of roles defined in the Grant Agreement. However, the following are critical Task Groups in the CULTURATI project worth mentioning their parts in more detail;

- **Task 1.3. Ethics – Task Leader: BU, Partners Involved: BU (M1-M36) in WP1.** This task involves ensuring the legal, ethical, safe, and secure implementation of all work packages, including the pilot tests and research activities, planned to be carried out within the project, evaluating and clarifying any legal or ethical issues that may impact the project collecting regular feedback from all work package leaders to confirm that there are no legal or ethical issues at stake. Thus, the Task Group will be responsible for ethics and privacy, ensuring that the project's data collection and analysis activities adhere to ethical and confidentiality guidelines and communicating the project's findings in a way that respects the privacy and dignity of the individuals and communities involved.

- **Task 2.1. Requirements Specification and Technologies Selection – Task Leader: IOTIQ, Partners Involved: BU, SVO, IOTIQ, NIMBEO (M1-M3) in WP2.** This task is dedicated to better defining the context by interacting with the stakeholders and users to collect and document project requirements and technologies selection. The Task Group, in particular, is responsible for designing, developing, testing, and evaluating the technological systems required for CULTURATI. Therefore, the members include engineers, software developers, data analysts, and other technical experts. The group's responsibilities include developing requirements for the system, designing the system's architecture, selecting the appropriate hardware and software components, writing and testing the code, and performing system integration testing with Task 2.2 System Architecture Design.

- **Task 3.6. System Updates and Tuning – Task Leader: UC3M, Partners Involved: SVO, IOTIQ, NIMBEO, UC3M (M10-M15) in WP 3.** Based on the results of the operational tests and user feedback, updates and corrections will be performed on the system components. Therefore, the Task Group is responsible for evaluating the performance of the system throughout the project, identifying and resolving any issues that arise, and recommending improvements to the system. They will also manage the system's configuration and ensure that all changes are

properly documented and communicated to relevant stakeholders. The Task Group is critical in ensuring that the technological systems necessary for success are designed, developed, tested, and evaluated to meet the project's objectives and requirements.

- **Task 3.5. Pilot Testing, Collecting Feedback from Users and Expert Reviewers – Task Leader: BU, Partners Involved: BU, RMK, SVO, IOTIQ, NIMBEO, UC3M, AG (M10-M15) in WP3**. Pilot testing will involve IoT data collection and management from IoT devices and developing protocols for data cleaning, preprocessing, and storage. The Task Group will also be responsible for identifying and addressing data privacy, security, and quality issues. This task also involves identifying expert reviewers and inviting them to test the initial system, arranging and conducting research with users and experts willing to take part, providing feedback about their experiences with the help of the System Usability Scale, and data analysis. Data collection will take place in two waives; M12 and M15. In total, 1600 surveys and 80 interviews will be collected at two sites in Turkey. This Task Group will also be responsible for ensuring that the data is properly labeled and annotated to support AI model development and analysis.

- **Task 5.2. Model Repository UI – Task Leader: IOTIQ, Partners Involved: IOTIQ, NIMBEO, BU (M22-M24) in WP5.** Based on the previously established system architecture, a suitable solution for creating an AI model repository will be determined in this task. Then, the model repository will be created to store soon-to-have AI algorithms and models such as random forests, NLP, and deep neural networks, etc. Such a repository with a nice interface is required since the system administrator will be able to add new AI models, compare the differences between the existing ones on the current data, select and apply the most efficient ones based on the use case scenarios. Thus, this task involves AI Model Development and Optimization that use the data collected from IoT devices for visitor and capacity management. The Task Group will work on developing and testing different algorithms, optimizing model hyperparameters, and ensuring that the models are accurate, reliable, and scalable.

- **Task 5.5. Integration of the AI Toolboxes – Task Leader: IOTIQ, Partners Involved: BU, IOTIQ, NIMBEO (M31-M36) in WP5.** In this task, the AI components/toolboxes and other elements developed during the WP5 will be brought together and put into action. This integration covers learning, perception, reasoning, understanding and problem-solving steps of AI development. In this task, the outputs will be integrated and incorporated as part of the prototype as well. Using a modular approach during the components' development, these components will use communication protocols to communicate with each other

through a middleware. Thus, this task involves integration and deployment. The Task Group will be responsible for integrating the IoT devices and AI models into the platform of CULTURATI, and deploying the system to end-users. They will work on developing and testing integration protocols, ensuring that the system is compatible with different types of IoT devices and software environments, and ensuring that the system is easy to use and maintain.

- **Task 6.1 Dissemination, exploitation and communication (DEC) plan including stakeholder analysis – Task Leader: TTD, Partners Involved: All partners (M1-M8) in WP6.** The DEC plan is a practical, updated tool to help in implementation of designed DEC actions. It includes the means and channels, key messages and responsibilities as well as timetable of DEC actions for the whole project duration and time after the project. The DEC will encapsulate the visibility strategy for the project, ensuring conformity with the program visibility requirements in all project communications, outputs and deliverables, as well as project logo, color scheme and format for external project communications (e.g. press releases). It will develop informed social media, and media placement strategies to maximize the project's reach to more general audiences in addition to the cultural and creative sector stakeholders, policy makers, authorities, academia and other organizations. Informed by the stakeholder analysis, which will ensure users and target audiences across the sweep of the project are clearly identified, an appropriately fashioned social media strategy will be devised. Alongside this a media placement strategy will be devised, to recognize most suitable formats, timings, reach and demographics. The strategies will be presented and embedded at the year one consortium meeting. The DEC plan is built to be adaptive and updatable as informed by feedback and analysis of responses across the consortium and wider stakeholders/users of the research. In short, this Task Group will be responsible for disseminating the project's findings to a wider audience, including policymakers, industry practitioners, and the general public. Therefore, it includes and requires coordination of all partners. This Task Group will work on developing social media posts, reports, presentations, and other communication materials, as well as organizing workshops and other outreach events.

4.3.10 Pilot Sites

In CULTURATI, pilot sites are carefully selected to test and validate the effectiveness of a new technology or intervention in a real-world setting. The pilot sites include individual facilities and organizations and clusters of facilities or organizations that are representative of a larger population,

hence citizens for content creation. The responsibilities of the pilot sites include creating content for the CULTURATI platform, implementing the developed technology according to the project plan, collecting and providing data to the project team, and participating in project evaluation activities. The pilot sites will provide feedback to the project team on their experience with the CULTURATI technologies, including any challenges or issues that arise. They are also responsible for providing training and support to other facilities, organizations, and individuals that will adopt the CULTURATI technologies during the project and in the future. Therefore, the role of the pilot sites is critical to the project's success, as they provide valuable information and feedback to the project team on the feasibility and effectiveness of the CULTURATI technologies in a real-world setting. As a result, they are an integral part of their Work Packages to have close coordination and communication, as defined in Figure 2, Management Structure of CULTURATI.

4.4. Decision Making

A vote will be held during the General Assembly online or face-to-face for decisions concerning crucial matters for the project. The Consortium Agreement details voting rules, quorum, and veto rights. The General Assembly and the Executive Committee have the members listed above. They should be present or represented at any meeting or may appoint a substitute or a proxy to attend and vote at any meeting. **The quorum is valid only if two-thirds (2/3)** of its members are present or represented. **Decisions shall be taken by a majority of two-thirds (2/3)** of the votes cast. Porvoon Kaupunki, as an Affiliated Entity, does not have voting rights. However, it can participate in the General Assembly.

4.4.1 Meetings Management

All bodies of the consortium meet regularly to coordinate, discuss and assess the progress and exchange information. Meeting agendas, minutes, and attendance signatures are mandatory for all meetings. Templates for these documents are available in the Appendix of this handbook and on Moodle. The chair of the meeting will announce all meetings and sends an outlook appointment after the time and date is agreed with a Doodle pool.

Table 3. Meeting Schedule

Management Meetings	Purpose	Frequency
General Assembly	Discuss the work progress, possible changes to Annex 1 and 2, results, DEC, and IPR issues.	At least once a year. The first GA is held on 7 March 2023 with Kick-off Meeting.
Executive Committee	Discuss technical progress and management.	At least quarterly. The first will be held in April 2023.
WP and Task Groups	Discuss technical progress and management at WP and Task Group level.	At least two times a month. Weekly meetings are preferred. Personal meetings whenever necessary.
External Advisory Board	Advice technical, political, social, business, and marketing-related issues.	Officially invited to special meetings and sessions.
External Independent Advisor	Advice and guidance on ethical issues concerning AI	Every three months. The first meeting is held in 1M.

4.4.2 Meeting Minutes

As stated in the Consortium Agreement, regarding decision-making and meeting minutes, the following rules apply;

- The chairperson of a Consortium Body shall produce minutes of each meeting which shall be the formal record of all decisions taken. He/she shall send the draft minutes to all Members within 10 calendar days of the meeting.

- The minutes shall be considered accepted if, within 15 calendar days from receipt, no Member has sent an objection by written notice to the chairperson regarding the accuracy of the draft of the minutes by written notice.

- The chairperson shall send the accepted minutes to all the Parties and the Coordinator, who shall retain copies.

- When a decision has been taken on a new item added to the agenda before or during the meeting, a Party may veto such decision during the meeting or within 15 calendar days after receipt of the draft minutes of the meeting.

- A Party that is not appointed to participate in a particular Consortium Body may veto a decision within the same number of calendar days after receipt of the draft minutes of the meeting.

5. Project Planning

This section outlines how the project is planned by emphasizing the work packages, identifying project tasks, scheduling, and partners involved. This section describes the process for planning and managing project activities, including the identification of key milestones that will be used to track progress and ensure that the project stays on track. The Gantt chart of the project is also included in

this section as it is a graphical representation of the project schedule and provides a visual representation of the project timeline. This section is important for the project team to make sure that project activities are properly planned and managed, and that progress towards key deliverables is tracked and monitored throughout the project lifecycle.

5.1 Work Plan

The CULTURATI project will be carried out in three main stages in three years, as shown in the Pert Chart below.
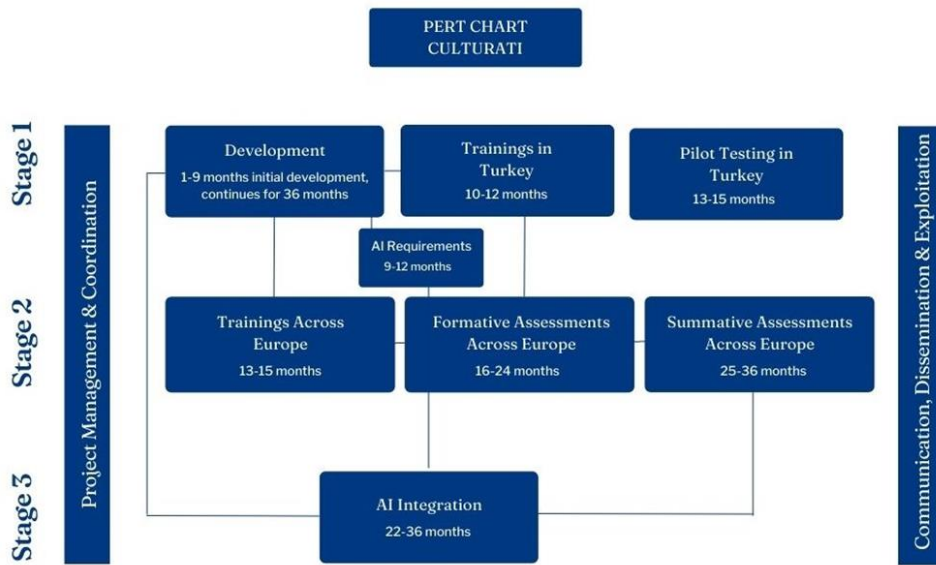
Figure 3. Pert Chart

- **Stage ONE Development of CULTURATI (M1-M15)** will focus on developing, evaluating, and testing main-stream technologies of the system, which will have two users; (1) content creators and (2) consumers of cultural heritage and arts (end-users). At this stage, the multiple components of the technology will be developed, tested, and evaluated. Thus, this stage will include all the user-centered design (UCD) phases and consider the user's requirements and objectives (WP2). At this stage, the technology of CULTURATI will be tested in two operational environments (indoor and outdoor) in Turkey (WP3) through custom usability tests (e.g. System Usability Scale – SUS) and expert reviews to evaluate its main functionalities. These tasks will be carried out in the first 15 months of the project. In particular, the initial system will be developed between M1-M9. System setup and installation will be carried out between M10-M12. Tests will start in M10 at two pilot sites. The two pilot sites include the Rahmi M. Koç

Museums (indoor) in Istanbul, and Ankara Citadel (outdoor) in Ankara, Turkey. The first version of the Prototype v. 1 will be delivered in M15 at the end of Stage ONE.

To accomplish Stage ONE, content creators of CULTURATI will be given training about using the system between M10-M12. These trainings will continue as they create content to support them. Trainings will include the technical elements of the system as well as marketing and segmentation to create the right content for the right target market.

- **Stage TWO Formative and Summative Evaluations of CULTURATI (M13-M36)** will focus on more rigorous testing than technology and get feedback from the users in the operational environments to further validate and demonstrate the capabilities and usability of the system. The system installation, updates, and tunning will be carried out between M13-M15. At this stage, we will make formative and summative evaluations involving end-users. While the formative evaluations will take place between M16-M24, summative assessments will occur between M25-M36. To this end, we will measure and explore CULTURATI's technologies on users' experience and impact at five pilot venues across Europe (WP4). In addition to the pilot sites in Turkey, we will test the CULTURATI technologies at the following pilot sites; Blenheim Palace in the UK, Porvoon Kaupunki in Finland, and Monti Dauni in Italy.

  Formative evaluation (M13-M24) aims to explore CULTURATI and its impact on the users' learning, satisfaction, engagement, and participation. Findings from this evaluation will be used to improve CULTURATI for the summative assessment. Formative assessment will occur in the project's second year between M16-M24. To this end, trainings about CULTURATI's technologies will be conducted over M13-M15 months across Europe.

  Summative evaluation (M25-M36) Findings from the formative evaluation stage will be used to inform the final design of CULTURATI. Thus, the summative evaluation will explore the user experience around CULTURATI's final technologies to demonstrate its capabilities. This evaluation will be done in the third year between M25-M36. The same procedures in the formative evaluation stage will be carried out.

In particular, Stage TWO aims to validate and demonstrate the capabilities of the prototype v.1 of CULTURATI around an interdisciplinary conceptual model. The findings from the formative analysis will inform the prototype v.2, which will be delivered in M24. The final Prototype will be

further tested, validated, and demonstrated between M25-3M36 and delivered in its final version in M36.

▪ **Stage THREE Integration of AI** will focus on integrating AI into CULTURATI to help CCIs and citizens produce creative content by utilizing the internal archives and data and then curating this content in a logical and organized way through games and routes. This stage will also include testing and validating it in one of the pilot sites, Blenheim Palace, because of the language barrier. However, experiments will be conducted in Turkish, Finnish, and Italian (WP5). Therefore, all research sites will test and validate AI integration into the curatorial software and optimization. This stage will start in the last quarter of the second year, though AI requirements will be determined and developed between M9-M12 of the project.

5.2 List of Work Packages

The project will be carried out in seven work packages, as shown in the table below. Work Packages are project subdivisions defining a set of activities or tasks needed to complete a specific deliverable. They provide a structured approach for breaking down a project into smaller, more manageable components, which helps to improve project planning, monitoring, and control.

Figure 4. Work Packages Summary Table

Work package No	Work Package Title	Lead Participant No	Lead Participant Short Name	Person-Months	Start Month	End month
1	Project Management and Coordination	1	BU	53,7	1	36
2	System Development and Evaluation	10	NIMBEO	80,9	1	36
3	System Testing and Verification	6	RMK	47,2	4	15
4	System Validation and Demonstration	1	BU	171,72	13	36
5	AI Integration	9	IOTIQ	60,6	9-12, 22	36
6	Communication, Dissemination and Exploitation	4	TTD	74	1	36
7	Ethics Requirements	1	BU		1	36
			Total person- months	488,12		

5.3 Work Package Descriptions and Their Deliverables

Work Package descriptions below include a clear and concise statement of the objectives, scope, and required resources for completing the package. The table below also specifies the expected outcomes or deliverables that will be produced at the completion of the work.

Table 4. Work Package Descriptions and Their Deliverables

Work package number	1		Lead beneficiary			BU	
Work package title	Project Management & Coordination						
Participant number	1	4	7	9	10	11	
Short name of participant	BU	TTD	SVO	IOTIQ	NIMBEO	UC3M	
Person months per participant:	47,4	2	1,5	1	1	0.8	
Start month	M1			End month	M36		

Objectives: (1) to coordinate, plan, monitor and manage the project, (2) to represent CULTURATI externally, (3) to ensure the required quality throughout the entire project duration, (3) to coordinate the fulfilment of the partners' obligations towards the EU from the legal, contractual, financial, and administrative standpoint, (4) to ensure effective communication within the consortium and with the EU, (5) to measure and document impact.

Description of work

Task 1.1. Project Management and Coordination - Task Leader: BU, Partners Involved: BU (M1-M36): The project coordinator is responsible for managing administrative, legal, financial, communication, and organizational issues to meet the project's objectives on time and within budget. In particular, the project coordinator is responsible for (1) planning and organizing meetings within the consortium and following up decisions taken by the consortium, (2) compiling the minutes of the meetings, (3) preparing report templates and writing reports including financial matters, (4) distributing EU funds according to Grant Agreement, (5) gathering financial reports from the consortium members and monitoring the budget, (6) ensuring the submission of the deliverables, periodic and final reports on time, (7) keeping all project-related contracts, (8) cooperating with the IT partners in the development of the prototype, (9) ensuring effective communication within the consortium with the help of an internal digital environment through Moodle (BU), (10) maintaining liaison with the European Commission, (11) form and administer contributions from the international Advisory Board.

Task 1.2. Risk Management – Task Leader: BU, Partners Involve: BU, SVO, IOTIQ, NIMBEO, UC3M (M1-M36): This task involves (1) implementing and updating the risk management, mitigation actions, and contingency planning to follow the project strategy, activities, outcomes, and budget, (2) determining and implementing mitigation measures to reduce or eliminate long-term risks.

Task 1.3. Ethics – Task Leader: BU, Partners Involved: BU (M1-M36): This task involves (1) ensuring the legal, ethical, safe, and secure implementation of all work packages, including the pilot tests and research activities, planned to be carried out within the project, (2) evaluating and clarifying any legal or ethical issues that may impact the project (3) collecting regular feedback from all work package leaders to confirm that there are no legal or ethical issues at stake.

Task 1.4. Data Management – Task Leader: BU, Partners Involved: BU, SVO, IOTIQ, NIMBEO, UC3M (M1-M36): This task involves (1) coordinating the preparation of the Data Management Plan by using the DMP template provided by the EC, (2) ensuring the research data is collected, kept, and shared with FAIR principle in mind; hence the data is findable, accessible, interoperable, and re-usable considering the balance between openness and protection of sensitive data.

Task 1.5. Training for Trainers – Task Leader: BU, Partners Involved: BU, IOTIQ, NIMBEO, UC3M (M7-M10): This task involves (1) preparing training manuals and materials for system users, including audio-visuals, (2) delivering training workshops to the trainers who will train the users at the national level, (3) providing support to the trainers during national training workshops.

Task 1.6. Scientific Coordination – Task Leader: BU, Partners Involved: BU (M1-M36): This task involves (1) ensuring consistent coordination of the different research teams in the consortium, (2) planning, assessing, and evaluating the overall performance of the project and scientific publications produced out of it, (3) organizing and coordinating different research teams to produce publications targeted for high-impact factor journals on time.

Task 1.7. Dissemination and Impact Maximization – Task Leader: BU, Partners Involved: BU, TTD (M1-M36): This task involves (1) ensuring consistent coordination between the partners regarding communication, dissemination, and exploitation activities at the national and international level with TTD, (2) assessing and evaluating the overall performance of the activities to maximize impact with the Advisory Board.

Deliverables

D1.1 Project Handbook (M2): Roadmap for project management and coordination, including planning,

communication, and implementation to meet the project's objectives on time and within budget

D1.2 Quality and Risk Management Report (M3): Plan for Quality Assurance and Risk Assessment including annual project risk assessments and relevant quality conforming processes

D1.3 Ethics Assessment Report (M3): Plan for various ethical issues including research practices to ensure that all are in line with the European Code of Conduct for Research Integrity based upon the following principles: reliability, honesty, respect and accountability

D1.4 Data Management Plan 1 (M3): Report concerning what data the project will generate, made accessible for verification and re-use and how data will be protected. During the project, it will be continuously updated.

D1.5 Data Management Plan 2 (M25). Report concerning what data the project will generate, made accessible for verification and re-use and how data will be protected. This plan is continuously updated during the project.

D1.6 Training Handbook and Audio-visuals (M12): Written and audio-visuals to train the trainers.

D1.7 Impact Report 1 (M24): Report to document the impact maximization efforts and activities with TTD and the Advisory Board

D1.8 Impact Report 2 (M36): Report to document the impact maximization efforts and activities with TTD and the Advisory Board

Work package number	2		Lead beneficiary			NIMBEO	
Work package title	System Development and Evaluation						
Participant number	1	7	9	10	11		
Short name of participant	BU	SVO	IOTIQ	NIMBEO	UC3M		
Person months per participant:	15	1,5	25	26	13,4		
Start month	M1			End Month	M36		

Objectives: (1) to identify, develop and evaluate main-stream technologies of CULTURATI (2) to ensure the required quality measurement, (3) to ensure data management and protection, (4) to prepare the user manuals.

Description of work

This package has the objective of identifying, evaluating and developing the main-stream technologies of CULTURATI which will include the following developments: (1) Backend Software (online global platform), (2) Mobile Apps for users (content creators and end-users), (3) Web platform for the online users. The implementation will occur iteratively during the project to address the needs arising from users and other WPs. This methodology will allow us to start with a simple implementation of a small set of the software requirements and then continue evolving step by step with new sets of requirements and enhancing the system with the learning from the previous phases and include the mentioned needs that may appear during the development of CULTURATI. WP2 will also cover the evaluation of the specifications defined in the requirements and the architecture to provide a prototype solution. The initial system will be developed between M1-M9 and tests will start in M10 (see WP3 below).

Task 2.1. Requirements Specification and Technologies Selection – Task Leader: IOTIQ, Partners Involved: BU, SVO, IOTIQ, NIMBEO (M1-M3): This task is dedicated to better defining the context by interacting with the stakeholders and users to collect and document project requirements and technologies selection.

Task 2.2. System Architecture Design - Task Leader: IOTIQ, Partners Involved: BU, SVO, IOTIQ, NIMBEO (M1-M6): This task is dedicated to forming the overall architectural concept of the system. The architecture will describe in detail the modules of the system, their interfaces, and the data flow among them. The architecture with the components and the interaction between them will be based on the user and system requirements defined. To represent and describe the architecture the Layered Software Architecture pattern will be applied using three tiers (Presentation, Application, Data) and four layers (Presentation, Business Logic, Data Access, Data Store). This representation is commonly known, well-structured and ensures simplicity, maintainability and test-ability of the components. The results of this task will be the architecture and functional specification

Task 2.3. Development of Server-side components - Task Leader: NIMBEO, Partners Involved: BU, SVO, IOTIQ, NIMBEO, UC3M (M7-M36): The prototype of the system will include the server-side, web, and mobile client components. The relationship between the components will be identified and where the master data will be stored will be decided based on the requirements of the planned system. A well-defined design and implementation process will be followed to ensure the production of a high-quality system that meets the needs of end-users by tracking identified requirements. Interfaces and data flow mechanisms between the components including sensors, cameras, platforms, external information systems, and software components

will also be specified in this task.

Task 2.4. Data Lake Design and Creation - Task Leader: IOTIQ, Partners Involved: SVO, IOTIQ, NIMBEO, UC3M (M7-M36): The objective of this task is the development and implementation of the module for centralized and organized data storage in a heterogeneous, visible, and secure data warehouse. The data lake must allow the acquisition and storage of large amounts of data from different sources, offer the ability to quickly and easily search for data and provide the possibility of using them for optimal analytical performance. All this with efficient and effective access and security management. During the development of this task, the transformation of the data in its original format to more appropriate formats (e.g., Avro, Parquet) will be studied for optimal storage and processing. The user permissions and privileges using a role-based security model will be defined. The users and groups will be analysed to manage the permissions in a secure and efficient way.

Task 2.5. Integration to Third Party Systems – Task Leader: UC3M, Partners Involved: IOTIQ, NIMBEO, UC3M (M13-M15): This task is dedicated to defining the role of existing external data sources as part of the system. The data from these sources will be used as an input to user interface components.

Task 2.6. UX (Web and Mobile) Implementation, real user tests, and User Guidelines Preparation -Task Leader: NIMBEO, Partners Involved: BU, SVO, IOTIQ, NIMBEO (M7-M36): This task is dedicated to the detailed design, implementation, and test of the UX. This task will be used to increase visiting/tour experience of the visitors by providing a non-complex interface and guidance in the system and application. By providing an advanced UX implementation, it will be easier for users to grasp the area of use of the system. User tests will ensure the functionality of the system for both managers and visitors. Testing is planned to be a 3-step-process: starting with an individual algorithm or component test, followed by the integration test between components and within the overall system, and finally within the domain/site-specific application environment. This task will be dedicated to creating test scenarios focusing on the more technical requirements defined previously. Apart from functional tests, performance tests can be planned. Test results will immediately be passed back to the tasks originating the components involved in the current tests enabling further improvements of components and overall system. Lastly, a comprehensive and accurate user guideline that clarifies best practice principles will be written. The guideline will explore and explain the application design from the aspect of visitors' and managers' perceptions and cognition. Assuming that the user has no prior experience or knowledge of the system, instructions will be presented as step-by-step procedures and map all the aspects of both web and mobile application in a concise, unambiguous, and clear way. Visual steppingstones and explanations for symbols and icons will also be provided.

Deliverables

D2.1 System Design and Specification (M4): This deliverable is intended to be the reference document for the development of the system of CULTURATI. It centralizes the requirement13 that this module will satisfy and the decision processes that have led to these requirements. To remain useful, it is meant to be a live document, firstly released early in the project as a draft, and updated over the project's course.

D2.2 System Architecture Design and Specification Report (M7): Specification of a modular reference architecture, interfaces for the modules, and the data flow between them.

D2.3 System Components Design and Specification Report (M7): Specification of the system components like server, web, mobile client. The document will also describe the interfaces between components and overall design.

D2.4 Data Source Identification, Data Requirements and Data Lake Design and Specification Report (M13): Specification of the system's data sources, as well as the requirements for data collection and storage.

D2.5 Third Party Systems Specification Report (M16): Specification of third-party systems that our software is integrated with.

D2.6 UX, Real User Tests, and User Guidelines Specification Report (M16): Specification of overall UX design of the system, user tests and user guidelines.

D2.7 Implementation of the Service Platform and Delivery (Prototype v.1) (M16): Minimum viable product for the Service Platform.

D2.8 Improved Version of the Service Platform (Prototype v.2) (M24): Improved version of the Service Platform with enhancements based on testing and system validation.

D2.9 Final Implementation of the Service Platform (Final Prototype) (M36): This deliverable is the final version of CULTURATI.

Work package number	3	Lead beneficiary			RMK		
Work package title	System Testing and Verification						
Participant number	1	6	7	9	10	11	12

Short name of participant	BU	RMK	SVO	IOTIQ	NIMBEO	UC3M	AG
Person months per participant:	2	15	1	10	1,2	3	15
Start month	M4		**End month**		M15		

Objectives: (1) to test and verify the technological outcomes of CULTURATI in two environments as a pre-validation and pre-demonstration effort, (2) to test and evaluate the multiple components operating together in two operational environments in Turkey through custom tests and expert reviews to evaluate its main functionalities, to find and fix defects, (3) to conduct training and workshops for the system users, (4) to create and coordinate content creation.

Description of work

This package has the main objective of testing and verifying the functionality, usability, software quality, and security of CULTURATI in two operational environments. To this end, trainings will be conducted and content will be created. User tests will be conducted. The findings will inform the initial design of the prototype.

Task 3.1. Forming and Coordinating the National Consortium/Network – Task Leader: BU, Partners Involved: BU, RMK, AG (M4-M6): This task requires close coordination between pilot sites and research university (BU) to make sure they are well informed about their responsibilities during and after the project. This task involves identifying the main stakeholders and target groups to form a network in the pilot country.

Task 3.2. System Setup and Installation – Task Leader: IOTIQ, Partners Involved: BU, RMK, SVO, IOTIQ, NIMBEO, UC3M, AG (M10-M12): This task involves close coordination with the pilot sites, ensuring that the system is correctly installed and functional with site-specific content and settings

Task 3.3. Preliminary User Trainings – Task Leader: RMK, Partners Involved: BU, RMK, SVO, IOTIQ, NIMBEO, UC3M, AG (M10-M12): This task involves (1) providing training to the trainers and users about the system and its features to create content, (2) collecting and evaluating feedback about the trainings, system usage, performance, suggestions and recommendations.

Task 3.4. Content Creation – Task Leader: AG, Partners Involved: BU, RMK, AG (M10-M12): This task involves creating content for the system. Each site is responsible to create 1000 content on the system initially between M10-M12. During the project, they will continue to create another 1000. BU will assist the sites during the process. While RMK will be responsible for creating content for the museum, AG will be responsible for communication and coordinating CCIs, creative professionals, SMEs, and citizens to create content for Ankara Citadel. To this end, AG will identify and select 20 individuals. These individuals will join the trainings for content creation.

Task 3.5. Pilot Testing, Collecting Feedback from Users and Expert Reviewers – Task Leader: BU, Partners Involved: BU, RMK, SVO, IOTIQ, NIMBEO, UC3M, AG (M10-M15): This task involves (1) identifying expert reviewers and inviting them to test the initial system, (2) arranging and conducting research with users and experts who are willing to take part and provide feedback about their experiences with the help of the System Usability Scale, (3) data analysis. Data collection will take place in two waives; M12 and M15. In total, 1600 surveys and 80 interviews will be collected at two sites.

Task 3.6. System Updates and Tuning – Task Leader: UC3M, Partners Involved: SVO, IOTIQ, NIMBEO, UC3M (M10-M15): Based on the results of the operational tests, feedback from the users, updates and corrections will be performed on the components of the system.

Deliverables

D3.1 National Consortium/Network Report – Turkey (M7): Report concerning the main stakeholders and target groups to form a network to communicate and disseminate about CULTURATI.

D3.2 Installation Report (M13): Report concerning the settings used and issues encountered during the site-specific system installation. For each setting, the rationale will be reported, and for each issue, the impact and suggestion will be provided. Immediate actions will be taken in case of high-impact issues.

D3.3 Training Report - Turkey (M15): Report concerning the training and system usage including number of attendants and their feedback.

D3.4 Content Report 1 (M15): Report regarding the content created in different categories and levels with their intended target groups. 2000 content in total between 10M and 12M by RMK and AG (KPI).

D3.5 User Testing Report (M15): Report presenting data and feedback collected from the users in two waves in 12M and 15M; 1600 surveys and 80 interviews (KPI).

D3.6 System Verification and Prototyping v.1 (M15): Report concerning the installation, tuning, and enhancement activities carried out. With this report, the first version of the prototype will be delivered.

Work package number	4	Lead beneficiary	BU
Work package title	System Validation and Demonstration		

Participant number	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
Short name of participant	BU	HHU	HHU-PK	TTD	OBU	RMK	SVO
	UNIFG	IOTIQ	NIMBEO	UC3M	AG	MSCA	BP
Person months per participant	20	20,04	9	2	20,28	27,4	2
	20	2	2	2	28	8,8	8,2
Start month	M13		End month		M36		

Objectives: (1) to validate and demonstrate the technological outcomes of CULTURATI in operational environments on the users (content creators and end-users) by assessing their experience and satisfaction in five operational environments across Europe, (2) to provide training to the content creators across Europe, (3) to finalize the conceptual model and develop the instrument to evaluate experiences and beneficial outcomes of the end-users, (4) to pilot test the survey instrument, (5) to collect and analyse data, writing up and present findings for dissemination, (6) to encourage CCIs and citizens to create content for CULTURATI and disseminate through various events, (7) to use social media to communicate and disseminate CULTURATI to reach a broader audience.

Description of work

This package has the objective of further testing, validating and demonstrating the technological outcomes of CULTURATI in five operational environments on the users to assess their experiences and satisfaction to improve the initial prototype across Europe. This WP will involve more rigorous testing than technology with formative and summative evaluations involving users. It particularly aims to validate and demonstrate the capabilities of the prototype v.1 of CULTURATI around a conceptual interdisciplinary model. While formative evaluations will take place between 16M and 24M, summative evaluations will occur between 25M and 36M. The findings from the formative analysis will inform the prototype v.2 which will be tested, validated and demonstrated between 25M and 36M. To this end, we will collect 6000 questionnaires and 300 interviews in three waives between months 16-24 (KPI) and 8000 questionnaires and 400 interviews in four waives between months 25-26 (KPI) at five pilot sites.

Task 4.1. Forming and Coordinating the National Consortium/Network – Task Leader: BU, Partners Involved: BU, HHU, HHU-PK, TTD, OBU, UNIFG, MSCA, BP (M13-M15): This task requires close coordination between pilot sites and research universities to make sure they are well informed about their responsibilities during and after the project. This task involves identifying the main stakeholders and target groups to form a network in the pilot sites in Italy, Finland and the UK.

Task 4.2. Conducting Trainings – Task Leader: BU, Partners Involved: BU, HHU, HHU-PK, OBU, RMK, SVO, UNIFG, IOTIQ, NIMBEO, UC3M, AG, MSCA, BP (M13-M15): This task involves (1) providing training to the users to create content, (2) collecting and evaluating feedback about the trainings.

Task 4.3. Content Creation – Task Leader: BP, Partners Involved: HHU-PK, MSCA, BP (M13-M18): This task involves creating content for the system. Each site is responsible to create 1000 content on the system initially between M13-M15. During the project, they will continue to create another 1000. While BP will be responsible for creating content for the palace, HHU-PK and MSCA will be responsible for communication and coordinating CCIs, creative professionals, SMEs, and citizens to create content for their regions. To this end, they will identify and select 20 individuals. These individuals will join the trainings for content creation.

Task 4.4. Finalizing the Conceptual Model and the Survey Instruments – Task Leader: OBU, Partners Involved: BU, HHU, OBU, UNIFG (M13-M15): This task is about finalizing literature review and developing the conceptual model to finalize the survey instrument.

Task 4.5. Collecting Data – Task Leader: HHU, Partners Involved: BU, HHU, HHU-PK, OBU, RMK, SVO, UNIFG, AG, MSCA, BP (M16-M35): This task involves (1) arranging and collecting questionnaires and conducting interviews with the users about their experiences and beneficial outcomes, (2) preparing data and interview transcripts for data analysis. Pilot tests (for research instrument) will be conducted by collecting 500 questionnaires and 50 interviews at all pilot sites in M16 (KPI). Data collection will be conducted in three waives in M18, M21, M24 (formative assessment), M26, M29, M32 and M35 (summative assessment). We will collect 14000 questionnaires and conduct 700 interviews (KPI).

Task 4.6. Data Analysis and Writing Up – Task Leader: BU, Partners Involved: BU, HHU, OBU, UNIFG, UC3M (M16-M36): This task involves (1) conducting data analysis, (2) writing up the findings for open-science peer-reviewed journals, presentations at conferences, and as guest speakers for communication and dissemination.

Task 4.7. System Installation, Updates and Tuning – Task Leader: UC3M, Partners Involved: BU, SVO, IOTIQ, NIMBEO, UC3M, HHU-PK, AG, MSCA, BP (M13-M36): Based on the results of the operational tests, feedback

from the users and visitors, updates and corrections will be performed on the components of the system. This is a continuous task. However, after the formative assessments, prototype v.2 will be developed (M24).

Deliverables

D4.1 National Consortium and Network Report – Europe (M17): Report concerning the main stakeholders and target groups to form a network to communicate and disseminate about CULTURATI in Italy, Finland and the UK. It includes coordination meetings conducted with the consortium members and various stakeholders.

D4.2 Training Report – Europe (M18): Report concerning the trainings given with their feedback.

D4.3 Content Report 2 (M24): Report regarding the content created in different categories and levels with their intended target groups. 5000 content in total between 12M and 15M by RMK, AG, HHU-PK, MSCA, and BP. Later, another 3000 by HHU-PK, MSCA and BP between 16-18 (KPI).

D4.4 Research Report 1 (M24): Report concerning research activities carried out.

D4.5 Research Report 2 (M36): Report concerning research activities carried out.

D4.6 Activity Report 1 (M24): Report concerning the activities carried out with financing.

D4.7 Activity Report 2 (M36): Report concerning the activities carried out with financing.

D4.8 Midway Dissemination Report (M24): This report will be prepared by all partners concerning their communication and dissemination efforts including social media posts.

D4.9 Dissemination Report (M36): This report will be prepared by all partners concerning their communication and dissemination efforts including social media posts.

D4.10 System Verification and Prototyping v.2 (M24): Report concerning the installation, tuning, and enhancement activities carried out. With this report, the second version of the prototype will be delivered.

Work package number	5		Lead beneficiary			IOTIQ	
Work package title	AI Integration						
Participant number	1	7	8	9	10		
Short name of participant	BU	SVO	IOTIQ	NIMBEO	UC3M		
Person months per participant	15	1	20	10	14,6		
Start month	M9		End month			M36	

Objectives: (1) identify, test, and evaluate the project's core AI technologies and integrate into CULTURATI, (2) to provide final prototype and integrated methodologies that will be applicable to the data from the test sites, (3) to improve modelling tools by incorporating AI, (4) to test, validate and demonstrate main functionalities of AI on the users in one of the research sites; Blenheim Palace, (5) to make experiments in Finnish, Turkish and Italian in other sites.

Description of work

This package has the objective of integrating AI into CULTURATI to create and curate content and enhance visitor satisfaction. This WP also includes validation and demonstration.

Task 5.1. Data preparation - Task Leader: UC3M, Partners Involved: BU, SVO, IOTIQ, NIMBEO (M9-M12): This task is dedicated to developing procedures to normalize, transform and enhance the data obtained from content editing, games, and tours that will be used to train the AI models in both the Transformative and Recommendation AI Toolboxes.

Data preparation and pre-processing are the most important tasks of data science. This task consists of three sub-tasks in general: data collection, cleaning, and feature detection. The data for the CHG transformation as well for the Questionary module (to automatically create questions from content) will be obtained by the manual creation of these data by managers. The route recommendations and *hiStoryPath* module will use the data from the visitors, their evaluations of the cultural entities and their behavioural actions such as the time they spent at each location.

To achieve accurate and robust results, domain knowledge is required which will be obtained through the previous WPs.

Task 5.2. Model Repository UI – Task Leader: IOTIQ, Partners Involved: IOTIQ, NIMBEO, BU (M22-M24): Based on the previously established system architecture, a suitable solution for creating an AI model repository is determined in this task. Then, the model repository will be created to store soon-to-have AI algorithms and models such as random forests, NLP, and deep neural networks, etc. Such a repository with a nice interface is required since the system administrator will be able to add new AI models, compare the differences between the existing ones on the current data, select and apply the most efficient ones based on the use case scenarios.

Task 5.3. Transformative AI Toolbox – Task Leader: BU, Partners Involved: BU, IOTIQ, NIMBEO (M25-M30): This task focuses on the design and development of the Transformative AI Toolbox. Based on the requirements

obtained from WP2, and the data gathered, NLP, Image/Video Processing, Cultural Heritage Graph Creator and Questionnaire algorithms and models will be generated and packed under these modules. All the AI models will be saved into the AI Model Repository developed in Task 5.2.

Task 5.4. Recommendation AI Toolbox – Task Leader: BU, Partners Involved: BU, IOTIQ, NIMBEO (M28-M33): This task focuses on the design and development of the Recommendation AI Toolbox. Based on the requirements obtained from WP2, and the data gathered, classification and recommendation algorithms and modules will be designed and developed to create hiStoryPath and User modules. All the AI models will be saved into the AI Model Repository developed in Task 5.2.

Task 5.5 Integration of the AI Toolboxes – Task Leader: IOTIQ, Partners Involved: BU, IOTIQ, NIMBEO (M31-M36): In this task, the AI components/toolboxes and other elements which have been developed in the course of this WP6 will be brought together and put into action. This integration covers learning, perception, reasoning, understanding and problem-solving steps of AI development. In this task, the outputs will be integrated and incorporated as part of the prototype as well. Using a modular approach during the components' development, these components will use communication protocols to communicate with each other through a middleware.

Deliverables

D5.1 Model Repository UI (Software) (M25): This software deliverable will be a repository where various AI models can be stored and chosen from by system administrators.

D5.2 Transformative AI Toolbox (Software) (M36): This is the initial version of the Transformative AI Toolbox used to create CHGs and extract questions from the content.

D5.3 Recommendation AI Toolbox (Software) (M36): This is the initial version of the Recommendation AI Toolbox used to create personalized routes for visitors and safe cultural site and usage management. In addition, it will be able to process user feedbacks and comments to understand the appreciation of the visitors on the recommendations.

D5.4 Evaluation of AI Algorithms (M36): This deliverable is a report about the results obtained from the application of the AI algorithms developed.

D5.5 Final Prototype (M36): Final prototype will be demonstrated in a final event in the UK hosted by the Blenheim Palace.

Work package number	6		Lead beneficiary			TTD	
Work package title	Communication, Dissemination and Exploitation						
Participant number	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
Short name of participant	BU	HHU	HHU-PK	TTD	OBU	RMK	SVO
	UNIFG	IOTIQ	NIMBEO	UC3M	AG	MSCA	BP
Person months per participant	20	5	2	18	6	2	2
	4	2	3	4	2	2	2
Start month	M1		End month		M36		

Objectives: The overall objective of WP6 is to ensure the effective and impactful transfer and exploitation of knowledge and research generated within WPs 1-5, and to make sure that stakeholders and users are familiar with the issues of quality, visitor experience and visitor management, and their importance to the competitiveness and resilience of the cultural sector at local, national and international levels. Specific emphasis will be placed on building engagement with the sector (CCI professionals), institutions (educational & governmental), business (including SMEs), policy makers, local communities, and broader public target audiences, which will be identified through a robust stakeholder analysis in the early stages of the project. Exploitation measures will promote and support the rolling out and adoption of the tested prototype technology, and achieving the best use of research results for decision-making, upskilling and education in local contexts and at the national and EU-level.

The specific objectives are; (1) to make sure that dissemination, exploitation and communication activities are timely, attractive and tailor-made to specific audiences, (2) to support building an inclusive cultural-educational ecosystem by raising awareness and engaging with the users and key stakeholders, (3), to promote adoption of CULTURATI by building engagement and participation amongst users and stakeholders and by raising awareness of CULTURATI research, (4) identifying and activating decision-making and exploitation routes for the solutions generated by CULTURATI research.

Description of work

The starting point of exploitation and dissemination is close collaboration with stakeholders in the countries of the participating beneficiaries. WP6 will further disseminate and communicate the results to wider regions and

audiences. All beneficiaries participating in CULTURATI are involved with DEC activities, and this will ensure wide geographic reach.

Task 6.1 Dissemination, exploitation, and communication (DEC) plan including stakeholder analysis – Task Leader TTD, Partners involved: All partners (M1-M8): *Subtask 6.1.1 Stakeholder analysis*. An understanding of the stakeholder landscape and relationships currently exists in pockets of knowledge spread around the project partners. This task gathers and systematically assesses and synthetizes awareness of existing stakeholder groups, identifies further stakeholders and analyses the relationships between them. The tailored analysis of stakeholders across the diverse geographical, sectoral and institutional settings will build channels for sharing and utilizing this knowledge, and make it the property of the wider project. *Subtask 6.1.2 Dissemination, exploitation and communication (DEC) plan.* The DEC plan is a practical, updated tool to help in implementation of designed DEC actions. It includes the means and channels, key messages and responsibilities as well as timetable of DEC actions for the whole project duration and time after the project. The DEC will encapsulate the visibility strategy for the project, ensuring conformity with the program visibility requirements in all project communications, outputs and deliverables, as well as project logo, color scheme and format for external project communications (e.g. press releases). It will develop informed social media, and media placement strategies to maximize the project's reach to more general audiences in addition to the cultural and creative sector stakeholders, policy makers, authorities, academia and other organizations. Informed by the stakeholder analysis, which will ensure users and target audiences across the sweep of the project are clearly identified, an appropriately fashioned social media strategy will be devised. Alongside this a media placement strategy will be devised, to recognize most suitable formats, timings, reach and demographics. The strategies will be presented and embedded at the year 1 consortium meeting. The DEC plan is built to be adaptive and updatable as informed by feedback and analysis of responses across the consortium and wider stakeholders/users of the research.

Task 6.2. Implementation of targeted communication, dissemination and awareness-raising strategies of CULTURATI prototype development and research – Task Leader TTD, Partners involved: All partners (M1-M36):

This task focusses on spreading information and discussions about the project activities. The effectiveness of the DEC will be monitored by a variety of means, including pre- defined feedback forms (printed & online), and gathering and analysis of metrics, to bring quantified measures for monitoring progress and reach of the project. These will come through a range of actions as outlined in 2.2.

Task 6.3 Implementation of engagement strategies with key stakeholder groups – Task Leader TTD, Partners involved: All partners (M1-M36): In partnership with partners active in Work Packages 2, 3, 4 and 5, (1) organize seminars and webinars for key stakeholder groups in each of the partner countries, (2) develop and manage a social media dissemination and communication strategy to engage wider stakeholder groups, (3) organize and publicize the final demonstration as a launch event for the dissemination and commercial exploitation of the prototype (see in more detail in 2.1.4)

Deliverables

D6.1 Dissemination, Exploitation and Communication Plan and Strategy (M8): The plan with stakeholder analysis and social media/media placement strategies.

D6.2 Project Website (M3): The project website will be prepared and kept online starting from M3. It will contain the developments, progress, public reports, links to public data etc.

D6.3 National Events Report 1 (M12): This report will be prepared in collaboration with partners in WPs 2, 3, 4, and 5.

D6.4 National Events Report 2 (M24): This report will be prepared in collaboration with partners in WPs 2, 3, 4, and 5.

D6.5 National Events Report 3 (M36): This report will be prepared in collaboration with partners in WPs 2, 3, 4, and 5.

D6.6 International Conference Report (M36): This report will be prepared in collaboration with project partners.

D6.7 Summary Dissemination Report (M36): Summary of the activities, e.g., monthly blogs, 3 x 4 newsletters, three explainer videos, and others.

D6.8 Policy Brief 1 (M15): Three summary briefs will be prepared during the three stages of the project for providing evidence-based policy advice to link policy initiatives.

D6.9 PolicyBrief 2 (M23): Three summary briefs will be prepared during the three stages of the project for providing evidence-based policy advice to link policy initiatives.

D6.10 Policy Brief 3 (M36): Three summary briefs will be prepared during the three stages of the project for

providing evidence-based policy advice to link policy initiatives.

5.4 Deliverables

In project management, a deliverable is a tangible or intangible item or outcome that is produced or provided as a result of completing a specific task or set of tasks. Deliverables can be products, services, reports, documents, software code, or any other measurable result that contributes to achieving a project goal or objective. Deliverables are typically defined and agreed upon at the beginning of a project and are used to track progress, ensure quality, and verify that the project is meeting its objectives. The table below identifies the type of each deliverable with their dissemination level. Accordingly,

- Report (R): A written document that provides information about a specific topic, often to inform or persuade a particular audience.
- Data Management Plan (DMP): A document that outlines how data will be collected, organized, stored, shared, and preserved during a research project.
- Dissemination, Exploitation, and Communication (DEC): A document that outlines dissemination, exploitation, and communication activities in the project. Thus, dissemination is about project results, findings, or outcomes to a broader audience beyond the project team, such as stakeholders, policymakers, or the general public. Dissemination can take many forms, such as reports, presentations, workshops, or online platforms. Exploitation focuses on the utilization and commercialization of project results or intellectual property. This can include patents, licenses, or spin-off companies. On the other hand, communication involves exchanging information and ideas among project team members or with external stakeholders. This can include meetings, email correspondence, or online collaboration tools.
- Ethics: This category specifically refers to deliverables related to the ethical considerations of a project, such as ethics reviews, compliance reports, or guidelines for ethical conduct during the project.
- Other: This category can include any other type of deliverable that is not covered by the other categories, such as software code, physical products, or prototypes.

Because of Open Science, most of the deliverables of CULTURATI are public (PU). The dissemination level is determined based on the sensitivity and confidentiality of the project results, and is agreed upon by the project partners at the beginning of the project. Accordingly, Ethics Requirements are defined as sensitive (SEN) by the EC. Therefore, they must not be shared.

Table 5. List of Deliverables

Deliverable (number)	Deliverable name	Work package number	Short name of the lead participant	Type	Dissemination level	Delivery date (in months)
D1.1	Project Handbook	WP1	BU	R	PU	M2
D1.2	Quality and Risk Management Report	WP1	BU	R	PU	M3
D1.3	Ethics Assessment Report	WP1	BU	R	PU	M3
D1.4	Data Management Plan 1	WP1	BU	DMP	PU	M3
D1.5	Data Management Plan 2	WP1	BU	DMP	PU	M25
D1.6	Training Handbook and Audio- Visuals	WP1	BU	R	PU	M13
D1.7	Impact Report 1	WP1	BU	R	PU	M24
D1.8	Impact Report 2	WP1	BU	R	PU	M36
D2.1	System Design and Specification	WP2	IOTIQ	R	PU	M4
D2.2	System Architecture Design and Specification	W32	IOTIQ	R	PU	M7
D2.3	System Components Design and Specification	WP2	NIMBEO	R	PU	M7
D2.4	Data Source Identification, Data Requirements and Data Lake Design and Specification	WP2	IOTIQ	R	PU	M13
D2.5	Third Party Systems Specification	WP2	UC3M	R	PU	M16
D2.6	UX, Real User Tests, and User Guidelines Specification Report	WP2	NIMBEO	R	PU	M16
D2.7	Implementation of the Service Platform and Delivery (Prototype v.1)	WP2	NIMBEO	OTHER	PU	M16
D2.8	Improved Version of the Service Platform (Prototype v.2)	WP2	NIMBEO	OTHER	PU	M24
D2.9	Final Implementation of the Service Platform (Final Prototype)	WP2	IOTIQ	OTHER	PU	M36
D3.1	National Consortium/Network Report – Turkey	WP3	BU	R	PU	M7
D3.2	Installation Report	WP3	IOTIQ	R	PU	M13
D3.3	Training Report – Turkey	WP3	BU	R	PU	M15
D3.4	Content Report 1	WP3	AG	R	PU	M15
D3.5	User Testing Report	WP3	BU	R	PU	M15
D3.6	System Verification and Prototype v.1	WP3	IOTIQ	OTHER	PU	M15
D4.1	National Consortium/Network Report – Europe	WP4	BU	R	PU	M17
D4.2	Training Report – Turkey	WP4	BU	R	PU	M18
D4.3	Content Report 2	WP4	BU	R	PU	M24
D4.4	Research Report 1	WP4	OBU	R	PU	M24
D4.5	Research Report 2	WP4	OBU	R	PU	M36
D4.6	Activity Report 1	WP4	BU	R	PU	M24
D4.7	Activity Report 2	WP4	BU	R	PU	M36
D4.8	Midway Dissemination Report	WP4	TTD	R	PU	M24
D4.9	Dissemination Report	WP4	TTD	R	PU	M36
D4.10	System Verification & Prototyping v.2	WP4	UC3M	R	PU	M24
D5.1	Model Repository UI	WP5	IOTIQ	OTHER	PU	M25
D5.2	Transformative AI Toolbox	WP5	BU	OTHER	PU	M36
D5.3	Recommendation AI Toolbox	WP5	BU	OTHER	PU	M36

D5.4	Evaluation of AI Algorithms	WP5	IOTIQ	R	PU	M36
D5.5	Final Prototype	WP5	IOTIQ	OTHER	PU	M36
D6.1	Dissemination, Exploitation, Communication Plan and Strategy	WP6	TTD	R	PU	M8
D6.2	Project Website	WP6	TTD	DEC	PU	M2
D6.3	National Events Report 1	WP6	TTD	R	PU	M12
D6.4	National Events Report 2	WP6	TTD	R	PU	M24
D6.5	National Events Report 3	WP6	TTD	R	PU	M36
D6.6	International Conference Report	WP6	TTD	R	PU	M36
D6.7	Summary Dissemination Report	WP6	TTD	R	PU	M36
D6.8	Policy Brief 1	WP6	BU	R	PU	M15
D6.9	Policy Brief 2	WP6	BU	R	PU	M23
D6.10	Policy Brief 3	WP6	BU	R	PU	M36
D7.1	OEI – Requirement No. 1	WP7	BU	ETHICS	SEN	M1
D7.2	OEI – Requirement No. 2	WP7	BU	ETHICS	SEN	M6
D7.3	OEI – Requirement No. 3	WP7	BU	ETHICS	SEN	M12
D7.4	OEI – Requirement No. 4	WP7	BU	ETHICS	SEN	M24
D7.5	OEI – Requirement No. 5	WP7	BU	ETHICS	SEN	M36

5.5 Milestones

Milestones are key events or stages in a project that are used to track progress and measure success. They represent important achievements or deliverables that indicate that a project has reached a significant point in its development. Milestones are typically identified and agreed upon at the beginning of a project, and are used to monitor project performance, identify potential risks or issues, and ensure that the project is on track to meet its objectives. They provide a framework for managing project timelines, budgets, and resources, and help to ensure that all stakeholders are aligned and informed about project progress.

Table 6. List of Milestones

Milestone number	Milestone name	Related work package(s)	Due date (in month)	Means of verification
MS1	Data Management and Protection	WP1	3	Data Management Plan will be submitted in M3 and will be handled by a dedicated member during and beyond the project to protect the data.
MS2	Implementation of the Service Platform	WP2	12	Pilot testing and system updates will be conducted to successfully implement the platform.
MS3	Content on the platform – Turkey	WP3	15	For the system to run and execute its main functions and to deliver Prototype v.1., training and updates will be provided to create content.
MS4	Prototype v.1	WP3	15	Pilot tests will be conducted to deliver a successful prototype v.1

MS5	Content on the platform – All pilot locations	WP4	24	Training and updates will be provided to have content on the system.
MS6	Prototype v.2	WP4	24	Tests in operational environments will be conducted to deliver a successful Prototype v.2
MS7	Final Prototype	WP5	36	To meet the project's objectives, final prototype will be validated in operational environments.
MS8	DEC Plan	WP6	8	To communicate, disseminate and exploit project's results during the project and beyond to meet the project's objectives.

5.6. Gantt Chart of CULTURATI

The Gantt Chart in the figure below include all project tasks, their duration, and their dependencies, accompanied by specific dates and deadlines for completion. A Gantt chart is a visual tool used in project management to display the timeline of a project and the tasks that need to be completed. It is designed to help project managers and team members track progress, manage timelines, and coordinate tasks.

GANTT CHART												
Year	2023				2024				2025			
Quarters	1	2	3	4	1	2	3	4	1	2	3	4
WP1 Project Management & Coordination												
Task 1.1 Project Management & Coordination												
Task 1.2. Risk Management												
Task 1.3. Ethics												
Task 1.4. Data Management												
Task 1.5. Prepare and Conduct Trainings												
Task 1.6. Scientific Coordination												
Task 1.7. Dissemination & Impact Maximization												
WP2 System Development & Evaluation												
Task 2.1. Requirements Specification and Technologies Selection												
Task 2.2. System Architecture												
Task 2.3. Development of Server-side Components												
Task 2.4. Data Lake Design and Creation												
Task 2.5. Integration to Third Party Systems												
Task 2.6. UX Implementation, User Tests & User Guidelines Preparation												
WP3 System Testing & Verification												

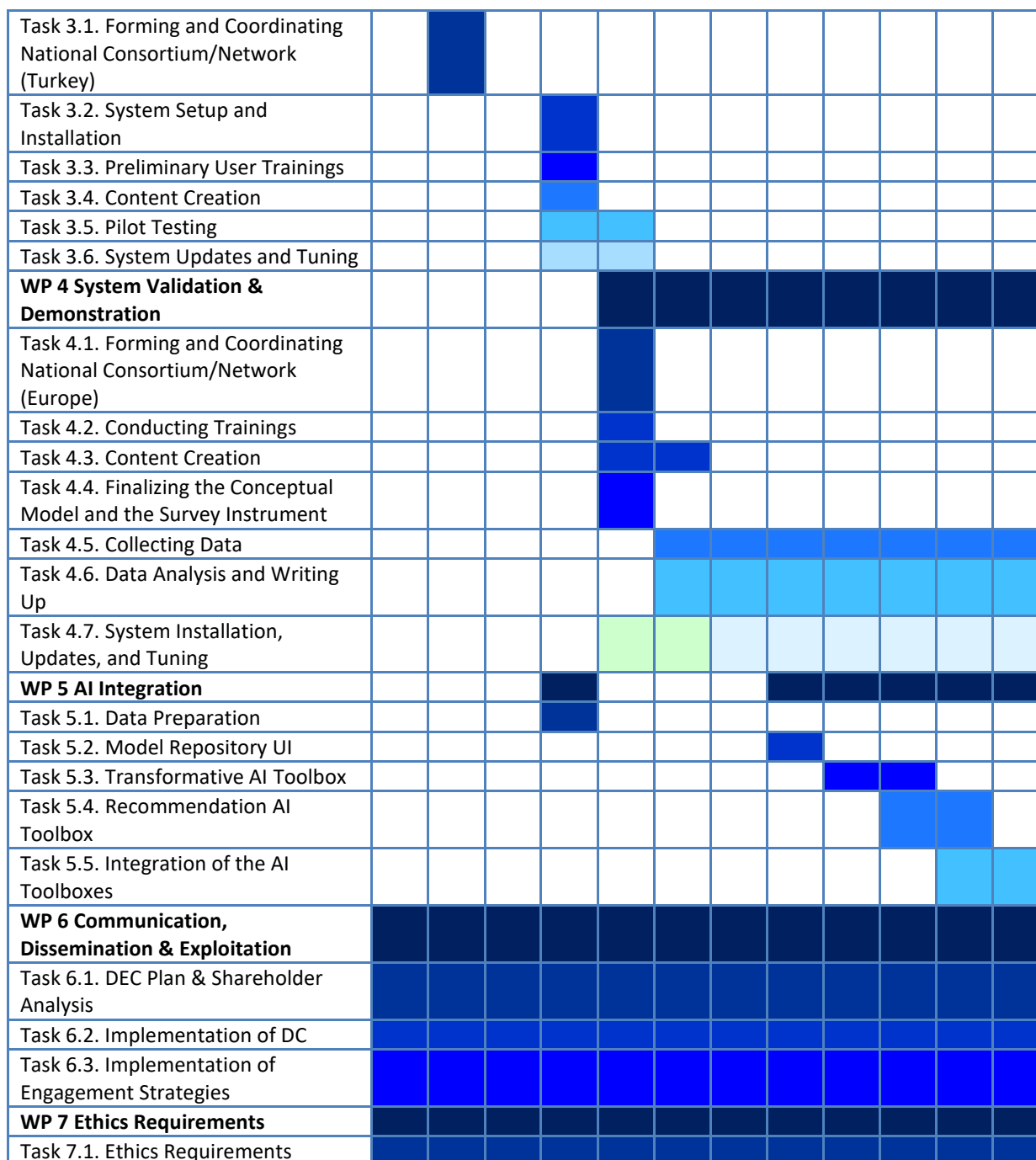| Task	1	2	3	4	5	6	7	8	9	10	11	12
Task 3.1. Forming and Coordinating National Consortium/Network (Turkey)		▣										
Task 3.2. System Setup and Installation				▣								
Task 3.3. Preliminary User Trainings				▣								
Task 3.4. Content Creation				▣								
Task 3.5. Pilot Testing				▣	▣							
Task 3.6. System Updates and Tuning				▣	▣							
WP 4 System Validation & Demonstration					▣	▣	▣	▣	▣	▣	▣	▣
Task 4.1. Forming and Coordinating National Consortium/Network (Europe)					▣							
Task 4.2. Conducting Trainings					▣							
Task 4.3. Content Creation					▣	▣						
Task 4.4. Finalizing the Conceptual Model and the Survey Instrument					▣							
Task 4.5. Collecting Data						▣	▣	▣	▣	▣	▣	▣
Task 4.6. Data Analysis and Writing Up						▣	▣	▣	▣	▣	▣	▣
Task 4.7. System Installation, Updates, and Tuning				▣	▣	▣	▣	▣	▣	▣	▣	▣
WP 5 AI Integration				▣				▣	▣	▣	▣	▣
Task 5.1. Data Preparation				▣								
Task 5.2. Model Repository UI								▣				
Task 5.3. Transformative AI Toolbox									▣	▣		
Task 5.4. Recommendation AI Toolbox										▣	▣	
Task 5.5. Integration of the AI Toolboxes											▣	▣
WP 6 Communication, Dissemination & Exploitation	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣
Task 6.1. DEC Plan & Shareholder Analysis	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣
Task 6.2. Implementation of DC	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣
Task 6.3. Implementation of Engagement Strategies	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣
WP 7 Ethics Requirements	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣
Task 7.1. Ethics Requirements	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣	▣

Figure 5. Gantt Chart of CULTURATI

6. Resource Management

Resource management is a critical component of project management that involves the planning, allocating, and optimizing of resources needed to complete a project. This includes managing the availability and utilization of resources such as people.

Effective resource management requires identifying and planning for the resources needed for each project task, estimating the required amount of resources and time for each task, and assigning

resources to each task based on availability, skill level, and workload. Resource management helps ensure the project is completed on time, within budget, and with the available resources. It also enables identifying potential resource constraints or bottlenecks that may impact project delivery and developing contingency plans to mitigate these risks.

Table 7. List of Staff Effort

	WP1	WP2	WP3	WP4	WP5	WP6	Total Person-Months per Participant
1/BU	47,4	15	2	20	15	20	119,4
2/HHU				20,04		5	25,04
3/HHU (RK)				9		2	11
4/TTD	2			2		18	22
5/OBU				20,28		6	26,28
6/RMK			15	27,4		2	44,4
7/SVO	1,5	1,5	1	2	1	2	9
8/UNIFG				20		4	24
9/IOTIQ	1	25	10	2	20	2	60
10/NIMBEO	1	26	1,2	2	10	3	43,2
11/UC3M	0,8	13,4	3	2	14,6	4	37,8
12/AG			15	28		2	45
13/MSCA				8,8		2	10,8
14/BP				8,2		2	10,2
Total Person Months	**53,7**	**80,9**	**47,2**	**171,72**	**60,6**	**74**	**488,12**

7. Communication Management

Communication management is an essential component of project management that involves planning, implementing, monitoring, and controlling all communication related to a project. Effective communication management ensures that all stakeholders, including team members and other project partners, are informed and engaged throughout the project lifecycle.

Effective communication management requires identifying each stakeholder group's communication needs and developing a communication plan that outlines the type, frequency, and method of communication for each stakeholder group. Effective communication management also establishes clear communication channels and protocols, and stakeholders know the project objectives, timelines, risks, and issues.

Communication management also involves addressing concerns and issues and providing regular progress updates. Effective communication management can help to build trust and collaboration among stakeholders, minimize misunderstandings and conflicts, and ensure that the project is aligned with the goals and expectations of all stakeholders. Accordingly, the following section outlines the type, frequency, and method of communication in CULTURATI. In addition, it establishes clear communication channels and protocols for effective communication management.

7.1 Internal Communication

The consortium's internal communication strategy includes the following four methods of communication; Moodle document-sharing platform with restricted access, emails, meetings (online included), and reports. Combining these communication tools enhance productivity, streamline work processes, and improve collaboration among the consortium members.

7.1.1 Moodle document-sharing platform

For internal communication in the CULTURATI project, we use Moodle of Bilkent University to enhance collaboration and productivity within the consortium. Moodle is a web-based platform that offers a variety of communication tools, including forums, chat rooms, and messaging. These features enable project members to communicate and share information with each other in real-time, regardless of their location. Moreover, Moodle allows for the creation of private groups, which can facilitate communication within sub-teams or departments. This can help to ensure that project information is shared only with the relevant stakeholders, reducing the risk of misunderstandings or miscommunications. Effective internal communication is critical for the success of any project, and Moodle provides a centralized platform that streamlines communication and improves collaboration within the consortium and task groups in particular.

Moodle is the central repository that stores all the documents of the CULTURATI project, including the meeting minutes, deliverables, document templates, and legal documents such as the Grant Agreement and Consortium Agreement.

Project partners can create an account with their emails and log in to Moodle via the following link https://gen3moodle.bilkent.edu.tr/login/index.php

For convenience, access to Moodle is also available through the website of CULTURATI at http://www.culturati.eu from the main menu item **Intranet** at the top.

For those users who are not familiar with Moodle, tutorials are available at the following link:
http://bets.bilkent.edu.tr/guidelines

7.1.2 Emails

Emails are a convenient and efficient way to send messages, documents, and files to individuals or groups within seconds, regardless of location. Therefore, daily communication will be based on emails and WhatsApp Groups for urgent matters.

A contact e-mailing list has been prepared and shared with the consortium members in M1. The list is available on Moodle and kept up to date.

7.1.3 Meetings and Meeting Minutes

Meetings, both in person and virtually, allow the consortium members to exchange ideas, collaborate, and discuss important matters. Management Meetings and their frequencies are covered under 4.4.1 Meetings Management of this document.

For WP2, the Work Package Leaders' assignment of tasks and other roles for individual members took place in M1 through online weekly meetings. The first face-to-face meeting was held in M2 on 7-8 March 2023 in Ankara, Turkey, because of the earthquake in Turkey. The meetings included the Kick-off Meeting, General Assembly, and the first National Event to launch the CULTURATI Project as part of the dissemination and communication activities. After each meeting, meeting minutes are prepared and shared with all members of the Consortium within 10 calender days on Moodle. The meeting minutes template is available on Moodle. Rules about decision-making and keeping meeting minute records are explained under 4.4.2 Meeting Minutes of this document.

7.1.4 Reports

There are reporting obligations to the European Commission. However, there are other internal reports to coordinate and manage the project. The type of reports and their schedules are covered under 7.3 Reporting of this document.

7.2 Documentation

7.2.1 File Storage

All documents and data are stored on Moodle. All participants have authorization permission to access the platform after creating an account with their emails. In addition, all deliverables of the

project are stored on APERTA (please see 7.4.4 Open Science Practices). The project webpage provides links to the URL of the documents.

7.2.2 Labeling of Documents

The following labels for documents will be used during the project.

Table 8. Labeling of Documents

Type	Label	Example
Emails	CULTURATI + subject	CULTURATI Kick-off-Meeting Agenda
Documents	CULTURATI_name of document_DDMMYY	CULTURATI_meeting minutes template_280223
Deliverables	CULTURATI_Deliverable DX.X_Deliverable Name_version	CULTURATI_Deliverable D1.1_Project Handbook_v2

7.3 Reporting

7.3.1 Reporting Obligations

Reporting is an essential aspect of project management that enables stakeholders to stay informed about the project's progress, identify potential issues, and make informed decisions. It serves the purpose of documenting project status, communicating with stakeholders, and providing valuable insights for future planning and decision-making. A well-executed reporting process can enhance project transparency, facilitate collaboration, and increase the chances of project success. Accordingly, during the project lifecycle of CULTURATI, two types of reports are scheduled;

- **CULTURATI Internal Reports**: Report prepared by each partner to the coordinator and the Executive Committee about the work carried out; includes a technical and financial part to ensure alignment of all tasks and resources. This report is part of Quality Management.
- **EC Periodic Reports**: Technical and financial reports to the EC by each partner, payment of interim and final payment after approval.

Reporting to the EC comprises technical and financial reporting. Two Periodic Reports are scheduled for the CULTURATI project as an obligation as defined in the Grant Agreement in M15 and M36. As the coordinator must compile all partners' technical and financial reports, each partner **must** provide the required information promptly (please see 7.3.2 Reporting Schedule).

7.3.2 Reporting Schedule

The EC defined two periodic periods for CULTURATI. The first covers M1-M15, and the second covers M16-36. To ensure the timely submission of the reports to the EC, all partners must respect the following dates;

Table 9. Reporting Due Dates

Report	Month from	Month to	Due Date to send to the Coordinator	Completed and Submitted to EC
Internal Report 1	1	6	31.07.2023	30.06.2024
Internal Report 2	7	12	31.01.2024	30.06.2024
Interim Report 3	19	24	31.01.2025	31.03.2026
Interim Report 4	25	30	31.07.2025	31.03.2026
Periodic Report 1	1	15	30.04.2024	30.06.2024
Periodic Report 2	16	36	31.01.2026	31.03.2026

7.3.3 Internal Reports

Reports are an effective means of communication that can convey complex information clearly and concisely. A report typically overviews a specific topic or issue, including relevant data, analysis, and recommendations. By using reports, we present information in an organized and structured way, helping to ensure that the concerned parties receive the intended message.

Accordingly, the CULTURATI project will have four internal reports to manage and coordinate work. Each parner will prepare internal project reports, typically including information about the project's progress, status, risks, and issues. Accordingly, the following key components will be covered in the internal reports of CULTURATI;

- Project Status: This section should provide an update on the project's progress, including milestones achieved, tasks completed, and upcoming activities.
- Key Performance Indicators (KPIs): This section should include metrics that measure the project's performance against its objectives, such as budget, schedule, and quality.
- Risks and Issues: This section should highlight any potential risks and issues that may impact the project's success and any actions taken to mitigate them.
- Resource Allocation: This section should include information about the project's resource allocation, including budget, staff, and other resources.
- Changes and Variations: This section should highlight any changes or variations to the project plan, including scope changes, budget variations, and schedule delays.

▪ Next Steps: This section should outline the next steps for the project, including upcoming activities, milestones, and deliverables.

In summary, the internal reports will provide a clear and concise summary of the project's progress and status, highlighting any key issues and risks and outlining the next steps for the project team. In this sense, internal reports are essential to our **Quality Management** practices. In addition, they will feed into the periodic reports to the EC. Therefore, they must be prepared with care. The template for Internal Reports is available in the Appendix of this docuement and the Moodle.

7.3.4 Periodic Reports (EC)

At the end of each project period identified in Table 9 above, we are obliged to submit a periodic report to the EC. The report comprises technical and financial information. The coordinator must comply and submit them **within the 60 days following the end of each reporting period**.

The **technical (includes parts Part A and Part B,** as explained below**) and financial reports** submitted to the EC are critical. They aim to ensure that project progress and resources align with the planned project progress as described in the Grant Agreement Description of Action (Annex 1) and the **Project Planning** section of this document. Accordingly, each partner's cost claims must align with the tasks and work in the specified period. To prepare the reports, the coordinator will compile and control the financial reports and delivery of results, including each partner's deliverables, reports, and milestones. EC Period Reports have two parts; Part A includes online forms, whereas Part B comprises the narrative part.

The deliverables, milestones, risks, and other data have their own due dates (please see 5. Project Planning) and must be submitted through **Continous Reporting in the EU online portal (SyGMa)**. For the EC Period Report Part A, all data available in SyGMa will be compiled as one pdf. Accordingly, **Part A of the technical Period Report (online forms)** will have the following sections;

▪ Publishable summary
▪ Overview of progress toward the objectives of the action (deliverables, milestones, risks, innovation)
▪ Dissemination and exploitation activities
▪ Answers to a questionnaire about (1) action implementation, (2) economic and societal impact

Part B of the technical Periodic Report (narrative part) will have the following sections;

- Objectives
- Work carried out on the WP level
- Impact
- Exploitation activities
- Data Management Plan (updates)
- Deviations from the planned work
- Use of resources

To prepare these reports, the WP Leaders must compile reports on the progress of their WPs and send them to the coordinator on time (please see Table 9 Reporting Due Dates). The coordinator will consolidate the information and send the complete periodic report to the Executive Committee for review. The approved version of the report (Part B) will be uploaded to the EU SyGMa System as a pdf file by the coordinator.

On the other hand, the **financial part of the Periodic Report** contains the following;

- Individual financial statement for each partner (please see the Grant Agreement, Annex 4)
- Explanation of the use of resources
- A periodic summary financial statement, including the request for interim payment (automatically generated by SyGMa).

The **Financial Signatory** of each partner can complete and submit the financial statements. The coordinator and the project manager will have a final check on these statements before submitting them to the EC. For more information about these reports and how to submit them, the following page of the Online Manual may be visited

https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pageId=1867970

7.3.5 Final Report (EC)

Final Report is the report for the last reporting period to close the grant. The Periodic Reporting Module (and periodic reports) are also used for the final report. The Final Report comprises the "final technical report" and the "final financial report". It must be submitted **within 60 calendar days following the end of the last reporting period,** like the Periodic Reports.

7.3.6 Ad Hoc Reports

An ad hoc report is a type of report that is created on an as-needed basis, usually to address a specific information need or request. Unlike regular reports that are generated at scheduled intervals, such as weekly or monthly, ad hoc reports are created on a one-time or irregular basis to address a specific question or issue. Ad hoc reports are often created using ad hoc reporting tools that allow users to extract, filter, and analyze data from various sources to create a customized report. In this sense, the first report is prepared by the coordinator for the technical team members for software development; the Technical Guide for Developers v.2 was shared with the technical team members in M1 on 18 February 2023. The document is available on Moodle.

7.3.7 Continuous Reporting (SyGMa)

SyGMa provides a continuous reporting function, as introduced in the Kick-off Meeting on 7 March 2023. Once you log into the system, please click "manage project" to see Continous Reporting. For more information about Continous Reporting and how to use it, please visit the following page Of the Online Manual.

https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pageId=1867968

All deliverables, milestones, risks, and other data are submitted through Continous Reporting during the project lifecycle.

7.3.8 Project Reviews by the EC

As defined in the Grant Agreement, the duration of the CULTURATI project is 36 months and divided into the reviewing periods shown in the table below. The granting authority will conduct these reviews on the proper implementation of the project and compliance with the obligations under the Grant Agreement.

Table 10. Project Reviews

Review No	Timing (month)	Location	Partners involved
1	18	TBC	All
2	36	TBC	All

7.4 External Communication

External communication falls under the scope of WP6 Communication, Dissemination, and Exploitation. The DEC strategy plan will be delivered in M8. However, the following rules and procedures apply to our external communication management practices.

7.4.1 Website

The CULTURATI project website is available at **www.culturati.eu**

The website of CULTURATI is an essential tool for external and internal communication. Therefore, it is created in M1. The principal language is English. However, we will have the website in different languages in the future to reach a broader audience. With a well-designed and informative website, we aim to provide stakeholders, potential audiences, and the general public with an overview of the project's objectives, activities, and progress. It also serves as a platform to showcase project deliverables, outputs, and events. We also aim to provide an opportunity to engage with the audiences through interactive features such as discussion forums and surveys. To ensure the website effectively communicates the project's mission and goals, it is user-friendly, visually appealing, and regularly updated with new information. Additionally, we aim to optimize for search engines to increase visibility and attract more visitors. In short, we are using the project's website as a powerful tool for external communication, providing a platform for engagement, information sharing, and promoting the project's impact. The website also provides a link for Moodle for internal communication.

7.4.2 Logo

The logo of the CULTURATI project is the following one, according to the decision taken by the General Assembly on 7 March 2023. It has several versions in different formats (.jpg, .png) and colors for different backgrounds. They are available on Moodle.

7.4.3 Visibility — European flag and funding statement

All CULTURATI external communication materials must contain the following information. As stated in the Grant Agreement, "Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate):

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text. Apart from the emblem, no other visual identity or logo may be used to highlight the EU support. When displayed in association with other logos (e.g. of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos. For the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to

exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means" (Grant Agreement Project 101094428 — CULTURATI, pg. 35-36).

In addition, as stated in the Grant Agreement, any communication or dissemination activity related to the action must indicate the following disclaimer;

> *"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them."*

The following webpage of the Online Manual under the Funding and Tender Opportunities of the European Commission provides the link for the required EU flags for downloading;

https://webgate.ec.europa.eu/funding-tenders-
opportunities/pages/viewpage.action?pageId=1867972

Moreover, as stated on the following webpage https://rea.ec.europa.eu/communicating-about-
your-eu-funded-project_en, "Since 2021, all recipients of EU funds have the legal obligation to explicitly acknowledge that their action has received EU funding. This requirement is to ensure visibility and transparency. It applies to all EU funded programmes, including the Research Fund for Coal and Steel and the Promotion of agricultural products programme. For projects funded under Horizon Europe, this requirement is specified under Article 17 of the model grant agreement" (European Commission, Communicating about EU funded Project, 2023). Accordingly, the following statement must be used in all external communication materials;

"This project has received funding from the European Union's Horizon Europe RIA programme under grant agreement No 101094428"

The statement above is visible on the website of the CULTURATI project.

7.4.4 Open Science Practices

As pointed out in the Grant Agreement, as an integral part of our proposed methodology, we will implement open science practices in various ways to make our research outputs transparent, available, accessible, broad, and sustainable. To this end, we provide open access to our research

outputs. The Scientific and Technological Research Council of Türkiye (TÜBİTAK) supports open science. In March 2019, the Board of Directors accepted the open science policy in line with the Green Road Open Access requirements. The policy concerns providing continuous open access to scientific publications and research data to increase the visibility and impact of scientific publications (TÜBİTAK, 2021). Therefore, its online platform APERTA allows researchers to keep and make their publications, data, software, models, algorithms, and workflows openly accessible (TÜBİTAK, 2022). Currently, we are using APERTA to provide stable, long-term public access to our research outputs, including our deliverables. Therefore, as we produce our deliverables, we deposit them in APERTA. Such repositories will be an integral part of our **Research Data Management** which will be covered in D1.4 Data Management Plan 1 and D1.5 Data Management Plan 2.

We also provide open access through the project's website **www.culturati.eu**. The deliverables will also be available through the website of the project.

8. Conflict Management and Escalation

Conflict management and escalation are important aspects of project management, as conflicts can arise in any project due to differing opinions, goals, or priorities among stakeholders. Conflict management involves identifying, addressing, and resolving conflicts among project stakeholders promptly and effectively. This can involve active listening, negotiation, compromise, and problem-solving skills.

If conflicts cannot be resolved through conflict management, escalation may be necessary. Escalation involves elevating the conflict to a higher authority or seeking outside help to resolve the issue. This can include bringing in a neutral third party, such as a mediator, to facilitate resolution or involving senior management to help resolve the issue.

The CULTURATI project is very well designed and defined and has been approved by the consortium members. Therefore, we do not foresee misunderstandings or conflicts between consortium members. However, in case of a conflict, the following conflict resolution procedure should be followed on the basis of mutual respect and optimal solution for the project to keep the project on track.

The following steps should be followed when addressing conflicts;
- The stakeholders involved should attempt to come to a resolution internally.

- When a solution can not be agreed upon internally, the issue should be escalated to the relevant Task Leader if the conflict is at the task level or to the appropriate Work Package Leader if the dispute concerns the entire work package.
- If a solution can not be agreed upon, the issue should be escalated to the Project Manager for mediation.
- Any conflict above this level that cannot be solved amicably between the Project Manager, Work Package Leader, Task Leader and other Project Team Members will be brought to the Executive Committee and/or General Assembly.

Following the steps above can help to minimize the negative impact of conflicts on the project and ensure that the project stays on track. By identifying and addressing conflicts early on and using the conflict resolution strategies above, we can minimize delays, reduce costs, and build positive relationships within the project members.

9. Change Management

Change management is an important process in project management that involves identifying, analyzing, and implementing changes to a project. Change management aims to minimize the negative impact of change and ensure that changes are implemented in a controlled and systematic way to achieve project success. Change management concerns the modifications on the agreed-upon project baselines approved by the consortium members as part of the Grant Agreement.

To simply the change management and control process, the following steps should be followed;

- Identification of change: The first step in change management is identifying the need for change. This can include changes in project scope, timelines, budgets, or deliverables.
- Analysis of change: Once a change has been identified, it must be analyzed to determine the potential impact on the project. This involves assessing the cost, time, and resource requirements of the change and evaluating its impact on project objectives, risks, and stakeholders. The Task Leaders are responsible for deciding on any changes with no impact on scope, cost, or schedule and do not pose any threat to the work package or task. Changes with marginal impact on scope, cost or schedule must be escalated to the relevant Work Package Leader and/or Project Manager. The Executive Committee will decide on any changes resulting in significant modifications to scope, cost, or schedule and additional project risk. If necessary, the proposed changes will be taken to the General Assembly. All approved changes must be recorded.

- Planning for change: After analyzing the change, a plan must be developed to implement the change. This involves identifying the necessary resources, setting a timeline, and communicating the change to stakeholders. At this level, depending on the change and its impacts on project objectives, cost, or schedule, the approval of the relevant Work Package Leader and/or Project Manager, Executive Committee and/or the General Assembly. All planned changes concerning the Grant Agreement Part A and Part B, must be reported to the EC, as they require an Amendment.

- Implementation of change: If the EC approves the proposed change, the final step in change management is implementing the change. This involves executing the plan, monitoring progress, and addressing any issues or concerns that arise during the change process.

Effective change management can help minimize the negative impact of change on a project and ensure that changes are controlled.

10. Legal Documents

10.1 Grant Agreement

The European Commission Grant Agreement for CULTURATI has the number 101094428. It has been amended because of the change regarding the Affiliated Entity in our project. The EC and the Coordinator only sign the Amended Grant Agreements. All Grant Agreement documents of CULTURATI are available on Moodle.

The Grant Agreement is composed of the following parts;

- Grant Agreement Core – include two parts; preamble and the terms and conditions.
  - ❖ Preamble - The preamble of an agreement is a statement that appears at the beginning of a legal document which provides an introduction and sets the tone and context for the rest of the document. It typically includes general information about the parties involved in the agreement, the purpose of the agreement, and any background or history that is relevant to the agreement.
  - ❖ Terms and conditions - Terms and conditions are the set of rules and guidelines for the agreement. They outline the terms of the agreement between the provider and the user, and specify the rights and obligations of each party. It comprises the legal articles for the implementation of our grant.
- Annex 1 – Description of the action. It includes two parts, Part A and Part B.
  - ❖ Part A involves WPs, Deliverables, Milestones, Risks, etc.).

❖ Part B involves the narrative description of our project.

- Annex 2 - Estimated budget for the action

- Annex 2a – Additional information on unit costs and contributions. Important when you are preparing your financial reports.

- Annex 3 – Accession forms. These are the forms with each partner's signature.

- Annex 4 – Model for financial statements. You will prepare your financial reports based on this template.

- Annex 5 – Specific rules. This part includes rules about confidentiality and security, ethics, values, IPR, communication, dissemination, open science, and visibility and other specific rules for carrying out the action.

10.2 Consortium Agreement

The CULTURATI Consortium agreement was negotiated and signed by all partners. It regulates the following;

- Management aspects, bodies, and voting rules of the consortium

- Terms of access, ownership and the use of IP generated in the project

- Ownership of results

- Confidentiality of information

The Consortium Agreement came into force with the start of the project on 01.02.2023. It specifies binding commitments amongst all partners in addition to the Grant Agreement.

The Consortium Agreement of CULTURATI is available on Moodle.

11. Supporting Documents

Annotated Model Grant Agreement (AMGA): guide explaining all articles of the Grant Agreement, providing examples and sample calculations. Available at

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/aga_en.pdf

Horizon Europe Online Manual: user guide for EU funding and managing projects in Horizon Europe. You can get all information about grant management, including keeping records, reports, etc. The Online Manual also includes "HOW TO" guidelines to help with SyGMa.

https://webgate.ec.europa.eu/funding-tenders-opportunities/display/OM/Online+Manual

Horizon Europe Reference Documents: To find templates and guidelines. Available at

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/reference-documents;programCode=HORIZON

Conclusion

In conclusion, this project handbook is a critical document that sets out the project's objectives and implementation plan, emphasizing the quality and effectiveness of the work packages and the plans to exploit results. By creating this handbook at the beginning of the project, the team can ensure that all stakeholders have a clear understanding of the project's goals, timelines, and expected outcomes. The handbook will serve as a reference guide for the team throughout the project's lifecycle, helping to ensure that activities remain on track and objectives are met. By prioritizing quality and effectiveness in the work packages and outlining clear plans to exploit results, the project is well-positioned to make a meaningful impact in its field. In summary, this project handbook is an essential tool for ensuring the project's success, and we are confident that it will provide valuable guidance for the team and stakeholders involved.

References

European Union (2021). PM² Project Management Methodology Guide 3.0.1. Brussels │ Luxembourg.

European Commission (2023). Communicating about EU funded Project. Available at https://rea.ec.europa.eu/communicating-about-your-eu-funded-project_en

Appendix: Templates

The following templates have been created and are available on Moodle.

- Deliverables (Word)
- Meeting minutes (Word)
- Attendance list (Word)
- Internal Report (Word)

Deliverable X.X Name

Deliverable type	
Dissemination level	
Due date (month)	
Delivery submission date	
Work package number	
Lead beneficiary	

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Document Information

Project number	101094428	Acronym	CULTURATI
Project name	Customized Games and Routes For Cultural Heritage and Arts		
Call	HORIZON-CL2-2022-HERITAGE-01		
Topic	HORIZON-CL2-2022-HERITAGE-01-02		
Type of action	HORIZON-RIA		
Project starting date	1 February 2023	Project duration	36 months
Project URL	http://www.culturati.eu		
Document URL			

Deliverable number			
Deliverable name			
Work package number			
Work package name			
Date of delivery	Contractual		Actual
Version			
Lead beneficiary			
Responsible author(s)			

Short Description	

History of Changes			
Date	Version	Author	Remarks

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Executive Summary

Introduction

Objective(s) of this document should be described here

Heading A

Heading B

Conclusion

References

MINUTES

XXX Meeting

Location:

Date:

Time:

Attendees

Present:

Absent:

Agenda 1 -

Action (You may indicate Action item, Owner(s), Deadline, Status)

Agenda 2 -

Action (You may indicate Action item, Owner(s), Deadline, Status)

End of the meeting: time

Attendance

XXX Meeting

Location:

Date:

Time:

Attendees and Signatures

Internal Report No X

Due date and month	
Report submission date	
Beneficiary	

Document Information

Project number	101094428	Acronym	CULTURATI
Project name	Customized Games and Routes For Cultural Heritage and Arts		
Call	HORIZON-CL2-2022-HERITAGE-01		
Topic	HORIZON-CL2-2022-HERITAGE-01-02		
Type of action	HORIZON-RIA		
Project starting date	1 February 2023	Project duration	36 months
Project URL	http://www.culturati.eu		
Document URL			

Report number	
Report name	
Work package number	
Work package name	
Date of delivery	Contractual		Actual	
Version	
Beneficiary	
Responsible author(s)	
Reviewer(s)	

Short Description	

History of Changes			
Date	Version	Author	Remarks

Table of Contents

Executive Summary

Introduction

Objective(s) of this document should be described here

Project Status

This section should provide an update on the project's progress, including milestones achieved, tasks completed, and upcoming activities.

Key Performance Indicators (KPIs)

This section should include metrics that measure the project's performance against its objectives, such as budget, schedule, and quality.

Risks and Issues

This section should highlight any potential risks and issues that may impact the project's success and any actions taken to mitigate them.

Resource Allocation

This section should include information about the project's resource allocation, including budget, staff, and other resources.

Changes and Variations

This section should highlight any changes or variations to the project plan, including scope changes, budget variations, and schedule delays.

Next Steps

This section should outline the next steps for the project, including upcoming activities, milestones, and deliverables.

Conclusion

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References