

fRamework for safE, opEn, collaboratiVe And incLUsive digitisAtion and managemenT of cultural heritagE

Grant Agreement No 101132389

DELIVERABLE 4.8:

Definition and planning of pilots.R2

Work Package 4

LEAD BENEFICIARY:

FRAUNHOFER FOKUS

Delivery Date: 31.05.2026

Document Sheet

Project acronym	REEVALUATE
Project full title	Framework for safe, open, collaborative and inclusive digitization and management of cultural heritage
Programme	Horizon Europe
Topic	HORIZON-CL2-2023-HERITAGE-01-03
Type of Action	HORIZON-Research and Innovation Actions
Grant Agreement	101132389
Start day	1 January 2024
Duration	36 months

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Document Information

Deliverable number	D4.1
Deliverable name	Definition and planning of pilots - Release 2
Lead beneficiary	Fraunhofer FOKUS
WP	4
Dissemination Level	Public (PU)
Type	Report
Reviewers (Organization)	CERTH, FromScratch
Delivery date	31.05.2026
Main author(s)	Fraunhofer FOKUS
Contributor(s)	CERTH, KULEUVEN, EFHA, SMB, MoMU, OLYMPIC, ARTHUR, AQUILEIA, GVAM

Document history

Version	Date	Changes	Reviewer/Contributor
1	04.03.2025	Initial Version, based on previous version	Fraunhofer FOKUS
2	06.05.2026	Adding to Pilot 2	SPK, Olympic
3	May 2026	Work on individual document copies for the pilots	All pilot partners
4	22.05.2026`	Integration of individual versions in common document	Fraunhofer FOKUS
5	27.05.2026	Internal review ready version	All pilot partners
6	05.06.2026	Review comments from CERTH integrated	CERTH, Fraunhofer FOKUS
7	08.06.2026	Review comments from FromScratch integrated	FromScratch, Fraunhofer FOKUS

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Abbreviations

Abbreviations	Full name
AI	Artificial Intelligence
API	Application Programming Interface
CH	Cultural Heritage
CHI	Cultural Heritage Institution
DB	Database
DLT	Distributed Ledger Technology
EAB	External Advisory Board
ECCCH	European Collaborative Cloud for Cultural Heritage
F2F	Face-to-Face
GA	General Assembly (GA)
GUI	Graphical User Interface
KAOS	Knowledge Acquisition in automated specification (Keep All Objectives Satisfied) goal modeling method
KPI	Key Performance Indicator
UI	User Interface
UML	Unified Modeling Language
WP	Work Packages
W3C	World Wide Web Consortium

1 Publishable summary

This document describes the updated plans for the REEVALUATE pilots, as revised after the first pilot phase.

REEVALUATE plans three pilots covering these areas:

- Fashion
- Olympic Games and Music
- Historic Site of Aquileia

The pilots themselves are not the primary purpose of the project.

The goal of conducting the pilots is to test, evaluate and validate the enablers developed in the project in order to verify their usability under realistic conditions.

In order to achieve this, the document not only describes the pilots and specifies the pilot planning, preparation, production and execution. It also describes which enablers are utilized for each pilot and provided KPIs for determining the efficiency of the enablers and the measurements and methodology to obtain these key performance indicators.

To ensure successful execution of the pilots, the document also lists possible risks that might affect the successful execution of the pilots. Furthermore, key stakeholders for all pilots are identified and described.

2 Introduction

This document provides the second iteration of the pilot plans for the REEVALUATE project.

The initial planning of project pilots was the first output of task 4.1. Based on the results and experiences from the first piloting phase, the plans have been updated and refined. The result of this activity is this document, D4.8.

The initial deliverable was submitted by M22 (October 2025) and served as a blueprint for performing the first pilot phase. This deliverable has now been updated and will be submitted in M29 (May 2026), to provide refinements and additional plans for the second pilot phase in project months 30-33.

The pilots will be executed as part of the activities in WP4, specifically in Task 4.5, with the subsequent assessment and evaluation in Task 4.6.

Section 3 provides a short overview of the planned pilots (with in-depth descriptions of the pilots being given in sections 5, 6 and 7).

As the primary purpose of the pilots within the scope of the project is the validation of the enablers in a realistic user case, section4provides a short overview of the enablers and their use in the pilots.

Following that, a description of each individual pilot is provided, structured as this:

- Introduction: Describes the themes covering by the pilot and the core partners involved.
- Pilot description: Gives an in-depth description of the planned pilot activities, detailing:

    - Pilot Scenario: The description of the pilot elements and their presentation to the pilot users.
    - Pilot site: For physical presentations, the description of the pilot environment and how the pilots will be embedded in that environment. For online presentations, the content and context surrounding the pilot presentation.
    - Pilot personnel: An overview of the people involved with installing and presenting the pilot, as well as those collecting data for subsequent evaluation, covering people directly involved in REEVALUATE and those outside the project.
    - Pilot methodology: This section describes the methods and activities used for measuring the KPIs.
    - Ethical and legal requirements: List any such requirements that need to be observed during the execution of the pilot.
- Timeline: Describes the planned timeline for the pilot, consisting of:
    - Preparation: Timeline for setting up the pilot, including preparation of assets and installation of the pilots on site.
    - Execution: Describe the dates when the pilot will be actively running and measured.
    - Evaluation: Provides the timeline for evaluating the data collected during the pilot and evaluating the KPIs
- Assets used: Lists and describes the assets provided for the pilot.
- Enabler used: Describes which enablers are used by the pilot and in which way.
- Stakeholders: Provides a description of all stakeholders relevant for the pilot.
    - Forms and documents: If the pilots require a specific document to be accepted by any stakeholder involved, whether filled or signed as a physical document or click-accepted in case of an online document, the relevant document will be provided in this section.
- KPIs: Covers anything related to the KPIs for this pilot, detailing:
    - List of KPIs: Gives a description of all KPIs and the KPI values indication success.
    - Materials for determining KPIs: Describes how the data needed for validating the KPIs will be obtained.
- Risks: Outlines risks that might inhibit a pilot activity or the ability to extract meaningful data for KPI evaluation; the section also provides mitigation measures for those risks.

2.1 Deliverable Goals

The purpose of this deliverable is to provide and describe the plan for the second phase of pilots within the REEVALUATE project. It is a follow-up of the earlier D4.1 deliverable and provides information for the second phase of pilots, adding updates and refinements to the earlier document where needed.

The pilots will be executed in Task T4.5, led by EFHA, and evaluated in Task 4.6, led by GVAM.

This deliverable is a crucial element of the success of WP4, as it contains the planning for the execution and subsequent evaluation of the pilots, which is the basis for the evaluation of the enablers developed within REEVALUATE.

2.2 Relation with other deliverables

As the purpose of the pilots within the project is, ultimately, the validation of the REEVALUATE enablers, the planning activities for the pilots is based on all deliverables provided by the two WPs

dedicated to enabler development, namely WP2 and WP3. It also utilizes information from D1.3 to ensure that the pilot activities align with the user needs and usage scenarios.

This updated version of D4.1 takes any updated versions of WP2 and WP3 documents regarding enablers into account, as well as the experiences from the fist pilot phase conducted in WP4.

2.3 Notes on the Approach

As all pilots are done with specific partners from the cultural heritage domain. The pilots cover different manners of presentation, including an online activity, a traditional museum exhibit and a, mostly, self-guided tour through a historic location.

The first pilot is fashion related and involves, as content providers and CH partners, primarily MoMU and EFHA, working together with FibreMood. The pilot covers exclusively virtual assets in an online presentation. While activities within the pilot may involve and encourage the creation of physical fashion items by users, those items will not be provided as part of the project,

The second pilot, covering the music in conjunction with the Olympic Games, involves the Olympic Museum and SMB. This pilot is presented as a physical presentation in a museum context, namely the Olympic Museum in Thessaloniki.

The third pilot, involving the Fondazione Aquileia as the CH partner, will present digital artefacts in a physical environment, enhancing the experience of visitors to the historic location with supplemental information.

As all pilots are mostly disjunct in relation to scope and CH partners, this document presents each pilot individually but follows an identical structure for their descriptions in order to provide consistency of the pilot plans.

2.4 Changes from initial version

The largest and most significant change is the detailed description of the "Fashion Time Machine" mobile game part of the first pilot. Due to the bankruptcy of a former member of the REEVALUATE consortium, the technical development of the necessary application, tools and assets had been delayed. While an existing member in the consortium (FFP) has agreed to take over the required activities, work for other tasks and pilots have been prioritized in order to reduce the negative impact of the loss of one of the consortium members and to avoid additional delays on those activities.

The "Fashion Time Machine" has not been piloted during the first pilot phase. During the execution of the first pilot phase, plans for providing the application for the second pilot phase have been discussed and a pilot plan for the "Fashion Time Machine" has been developed, which is described in this deliverable.

For the other pilots, including the part of the first pilot that is executed in cooperation with FibreMood, the changes are mostly incremental and consists of refinements of the pilot plans, based on the experiences from the first pilot phase.

Plans for the second pilot concentrate on FFP producing a single proof-of-concept advertising film that demonstrates how digitized assets from the REEVALUATE marketplace can be selected and integrated into an audiovisual narrative. The film is developed with reference to the Olympic Museum's planned immersive exhibition and its five thematic rooms, which provide the real-world context for the

demonstration. The Olympic exhibition will explore the relationship between the Olympic Games and music, from antiquity to the present day, through five thematic units. Based on the experiences from the first pilot phase, a larger number of enablers than originally planned will be evaluated. Additionally, new potential users and stakeholders were identified and will be addressed in the second pilot phase.

For the third pilot, the second pilot phase will cover a wider range of artefacts from the collections of the National Archaeological Museum of Aquileia and will also address a wider target audience, including different target groups. During the second phase activities, students from the University of Udine and Padua will also be involved, primarily providing context for artefacts as part of one of the Contextualisation Campaigns planned. Additional enablers, not covered in the first pilot phase, such as the Context Validator Enabler and the AI Image-Based Enabler, will be tested. A virtual tour of the House of Titus Macro will be completed in time for the second pilot phase, allowing the enablers to be evaluated within a richer and more diverse participatory and narrative framework.

3 Pilots Overview

The piloting phase covers three pilots from different domains, utilizing different ways of presenting digital and physical content to the general public. The purpose of this wide-spread approach is to cover a comprehensive range of different activities in order to validate the enablers in multiple, non-overlapping realistic use-cases.

3.1 Pilot 1 Overview - Fashion

The first pilot activity involves a collaboration between EFHA, the MoMu - Fashion Museum Antwerp, and the Belgian company FibreMood.

The pilot will begin with the digitization of various fashion heritage artefacts from the MoMu, garments, patterns and 3D-models. These digitized artefacts will undergo contextualization process involving validation by different stakeholders (general public (re-users), experts from the cultural heritage sectors and SMEs, embodying the creative industry.

The pilot itself consists of two different showcases.

The first showcase is a mobile game titled "Fashion Time Machine" In this game, players can design and customize virtual outfits using elements from the digitized artefacts. The game will feature different levels based on various fashion eras and allow players to share their designs on social media and compete with others. The AI-driven Creative Reuse Enabler will assist players in creating new designs. Educational elements, such as information about the historical significance of each artefact, will also be included in the game.

The second showcase will allow users to create their own physical garments, based on sewing patterns derived from items from the museum’s collection. This allows users to create their own personalized version of that garment. The showcase will be piloted in cooperation with FibreMood and extends on an earlier collaboration with that company in the domain of fashion making as a social media based and supported activity.

3.2 Pilot 2 Overview - Olympic Games and Music

The second pilot is a collaborative initiative between the Olympic Museum of Thessaloniki, the Ethnological Museum of Berlin, and FFP Productions of Austria. Its objective is to validate the REEVALUATE enablers in a real museum setting: FFP produces a proof-of-concept advertising film reusing digitized cultural-heritage assets, hosted within the Olympic Museum's planned immersive exhibition "The Olympic Experience" at its premises in Thessaloniki. The exhibition explores the multifaceted relationship between the Olympic Games and music, spanning from antiquity to contemporary times. It is structured around five thematic units, combining artefacts from both the Olympic Museum and the Ethnological Museum's collection. The exhibition aims to offer visitors a holistic and unique Olympic experience.

FFP will incorporate materials from this partnership, highlighting the potential of digitized heritage material in contemporary advertising practices, focusing on leveraging digitized cultural heritage (CH) artefacts for creative and sustainable advertising within the Creative Industries and Advertising sectors. Building on this material, FFP will produce an advertising film inspired by the five thematic units already developed by the museums and the selected digitized artefacts.

Building on the proof-of-concept film, FFP will investigate how the same material be brought into a more immersive form using 3D and projection-based media. The Olympic Museum is planning an immersive exhibition in which such content presented to the public through video projections and projected media installations at the Museum.

The pilot includes a series of interconnected activities, such as storytelling development, historical research, the compilation of an asset list for digitization, and the execution of the digitization process itself. The selected material encompasses historical photographs, musical pieces, and artefacts reflecting both diverse global cultures and the history of the Olympic Games. Additional activities involve metadata review and enrichment, as well as the production of a video, utilizing the digitized artefacts to support the overall narrative.

FFP's contribution is a proof-of-concept advertising film showing how digitised cultural heritage can be reused in advertising, presented within the Olympic Museum's showcase of Olympic history in combination with SPK's audio files. As a stakeholder representing the creative industries, FFP demonstrates the potential of digitized cultural heritage in contemporary creative industries and advertising practices. The film leverages digitized material drawn directly from the marketplace, while testing the enablers, to highlight innovative and sustainable uses of cultural-heritage assets.

3.3 Pilot 3 Overview – Historic Site of Aquileia

The third pilot focusses on artefacts and sites from the ancient city of Aquileia.

This city has a rich history, continuously inhabited since 180 BC. Following digitization of sites and artefacts, information will contribute to creating a virtual tour centered around Titus Macer’s Domus, an archaeological site, designed to enhance awareness among locals and tourists about this significant site in northern Italy.

This tour will include immersive experiences through tablets or VR viewers, provide on-site QR codes for accessing additional online content, as well as interactive touch screens, top primarily support self-guided tours through Aquileia. The tour will also be available as a purely virtual online tour for users outside of Aquileia.

4 Overview of Enablers

This first section of this chapter provides the value propositions of the involved enablers and a short description for each enabler. In the second section a mapping between enablers and pilots is provided, as well as the testing plan.

4.1 Value Propositions

4.1.1 Collaboration Enabler

The Collaboration Enabler consists of two core systems: a multimodal information retrieval system and a multimodal matchmaking system. The information retrieval system ensures that users can discover relevant artefacts through active queries, while the matchmaking system connects the user with interested artefacts automatically. Together, they empower CHIs and third-party users to discover, relate, and reuse digitized CH artefacts in a collaborative environment. The marketplace interface provides two separate entry points: Search and Recommend.

4.1.1.1 Collaboration Enabler (Information Retrieval System)

The multimodal information retrieval system enables users to efficiently discover digitized artefacts across multiple institutions. Built on top of the KG that includes the artefacts metadata from each pilot, the system offers unified access to artefacts across pilots. It serves as an intuitive entry point for both CHIs and creators to explore and retrieve digital artefacts relevant to their needs.

Input. When a user selects Search, the information retrieval system is triggered, allowing the user to enter three input modes: (1) **Text queries**, where users can describe what they are looking for in natural language (e.g., “a 19th-century silk gown with floral embroidery”); (2) **Image queries**, where users can upload an image to find visually similar artefacts (e.g., uploading a photo of a vase to retrieve comparable ceramic works); (3) **Text and Image queries**, where users can refine an image-based query with additional textual description (e.g., “similar to this dress but with red colour”).

Output. The system then returns a **set of artefacts** that best match the query, presenting them with descriptive metadata, provenance, and reuse information.

4.1.1.2 Collaboration Enabler (Matchmaking System)

The matchmaking system automatically generates personalized recommendations for artefacts without requiring additional input from the user. Built on top of the KG that includes the artefacts metadata from each pilot and the profile of each user, the system further facilitates collaboration between users and institutions.

Input and output. When a user selects Recommend, the matchmaking system is activated automatically; no additional input is required once the user has completed their registration. Based on user profiles and historical interactions, and outputs personalised recommendations of relevant artefacts. For example, a registered fashion designer who has explored MoMu’s garment collection may receive recommendations for new textile artefacts or other designers working with similar materials.

4.1.2 Contextualization Enabler (Text-based AI-driven)

The Text-based AI-driven Contextualisation Enabler automatically transforms textual descriptions and metadata of CH artefacts into statements in the KG annotated using the CACAO ontology. Its main

purpose is to enrich artefacts with contextual knowledge to integrate them into the REEVALUATE Knowledge Base.

Input and output. Given plain text descriptions or metadata of CH artefacts, the enabler automatically extracts structured information from them and converts them into statements in the KG. The statements are then integrated into the REEVALUATE Knowledge Base.

By converting plain text into KG, the enabler improves the semantic completeness and interoperability of the digitized artefacts. This enables more accurate linking, retrieval, and reuse of artefacts across the REEVALUATE framework and supports other enablers that rely on contextualised information.

A curator may contribute contextual information in free-text form. The enabler converts them into statements and stores them as part of the REEVALUATE Knowledge Base, enriching the corresponding artefacts with semantic context.

4.1.3 Human Driven Contextualization Enabler

The Human Driven Contextualization enabler is a tool for curators to collect context (images, texts, URLs, etc) about a CH artefact from the collection so its context info can be completed, enhanced or disrupted using the general public or other experts' contributions

Curators or Public Services responsible usually look for public participation in the curating process as an engagement strategy. Sometimes the goal is just to get a different view or an expert look about the CH artefacts and a specific topic. For example, how Gioconda can be contextualized in the fashion field or gender aspects. Through the Human Driven Contextualization enabler, curators can design and launch campaigns to a group (experts, working team, other curators, social group or general public) to ask them to contribute in a fully online (anonymous or not) process, uploading images, texts, URL references, etc. to be attached to the CH Artifact so its context information is enriched in general or regarding a specific topic.

4.1.4 Contextualization Enabler (Image-based AI-driven)

The Image-based AI-driven Contextualisation Enabler automatically analyses visual representations of Cultural Heritage (CH) artefacts to extract semantic information and enrich their contextual description within the REEVALUATE Knowledge Base. Its main purpose is to leverage visual similarity to identify related artworks and transfer contextual properties such as material, artistic genre, and art movement.

Input and output. Given a digital image of a CH artefact, the enabler processes it through a computer vision model that extracts a vector representation (embedding) capturing its visual and stylistic characteristics. This representation is then used to perform a similarity search within the REEVALUATE Knowledge Base, identifying artworks that share comparable visual or stylistic traits. Once the most similar artefacts are retrieved, the enabler automatically transfers relevant and transferable properties—such as material, genre, and artistic movement—to the input artefact, enriching its metadata and contextual information.

By grounding visual similarity in a structured knowledge framework, the enabler bridges the gap between visual perception and semantic understanding. The resulting enriched representation enhances the discoverability, linking, and reuse of cultural artefacts across the REEVALUATE platform,

supporting other enablers and services that depend on contextualised and semantically annotated information.

In addition, the Image-based Enabler enables curators to contribute by validating or refining the suggested contextual properties.

4.1.5 Contextualization Enabler (Audio-based AI-driven)

The Audio-based AI-driven Contextualisation Enabler performs a function similar to the Image-Based AI-driven Contextualization Enabler but is based on the analysis of digitized audio representations of Cultural Heritage (CH) artefacts to extract semantic information and enrich their contextual description within the REEVALUATE Knowledge Base. Its main purpose is to leverage audio similarity to identify related artworks and transfer contextual properties such as instrument, artistic genre, and music style.

4.1.6 AI-Driven Creative Reuse Enabler

The AI-driven Creative Reuse Enabler allows users to generate new images, inspired by existing cultural heritage artefacts. Using advanced image generation models, it helps artists, educators, as well as wider public explore new ways of reinterpreting digitised heritage artefacts.

The enabler accepts as input either a short text prompt written in natural language (e.g., “create a yellow coat inspired by 19th-century dresses”) or a combination of a prompt and a selected artefact image. Using a customised diffusion model trained on cultural heritage data, it produces high-quality synthetic images that reflect the user’s creative intent. The system can insert artefacts into new visual contexts or generate stylistic variations of them, enabling users to experiment with different concepts and aesthetics.

Delivered as a service through an API, the enabler can be seamlessly accessed by the REEVALUATE Marketplace and other platform components, supporting the responsible and innovative reuse of cultural heritage content.

4.1.7 Marketplace

Marketplace provides a digital environment where cultural heritage institutions can showcase their digitised artefacts and connect with creators, educators, and organisations interested in reusing them. It promotes collaboration and creative engagement by making heritage collections easily discoverable and reusable within a trusted environment.

The enabler allows institutions to upload artefacts, describe their context, and define reuse conditions such as licensing terms or availability. Users can explore the marketplace through intelligent search and recommendation features powered by the Collaboration Enabler, discovering artefacts that match their interests.

It also includes built-in tools for messaging, negotiation, and licence management, ensuring that communication between CH institutions and users is transparent and legally compliant. Integrated with other enablers like Context Validation, and IPR Management Enabler, Marketplace serves as the main gateway for the responsible and sustainable reuse of cultural heritage across the platform.

It should be noted that some enablers, like the Context Validation Enabler and the DLT based IPR Management Enabler are not accessed directly by the pilots. They are used through the functionality exposed by the Marketplace.

4.1.7.1 Context Validation Enabler

The Context Validation enabler is a set of tools that allows CHIs to ensure that their property is not misused by producers of new digital content. The newly created media is uploaded through a simple UI by either the owner of the original artefact or the producer of the derivative and depending on the available modalities multiple checks are performed to detect wanted or unwanted contexts. The digital artefacts that can be checked are media files and can be images, videos or audio files. There are a number of fixed context detectors for specific cases like nudity, violence and crimes but at the same time the user can request the validation of arbitrary contexts through a text description. The response of the system is a true/false value for each context representing if the context is present in the media file and is presented with checkmarks.

4.1.7.2 DLT based IPR Management Enabler

This is the implementation of a blockchain-based solution for digital cultural heritage (CH) asset management and intellectual property rights (IPR) governance within the REEVALUATE project. It focuses on smart contract mechanisms, NFT-based artefact tokenization, and seamless integrations, to enhance ownership tracking, licensing, and secure access management for digitized CH assets. Leveraging Hyperledger Fabric, it introduces innovative solutions such as NFT smart contracts for digitized cultural heritage artefacts, ensuring authenticity, provenance tracking, and secure licensing; smart contracts for ownership and access control, automating IPR enforcement, licensing agreements, and secure asset transfers.

4.2 Pilots and Enablers

4.2.1 Mapping of Pilots and Enablers

Table 1: Pilots x Enablers (what the enablers can do for the pilots)

Enabler	Pilot 1 – Fashion & Gaming	Pilot 2 – Olympic Games & Music	Pilot 3 – Aquileia Historic Site
Public Sensing Prioritization	n/a	Interactive social media campaigns for artefact selection. For pilot 2 Olympic and SPK will test the enabler.	School & community engagement for asset selection
Contextualisation Enabler (TEXT, AI-driven)	Enriches MoMu fashion artefacts with contextual descriptions extracted from curatorial notes and external text sources, and (optionally) merges this information into the REEVALUATE knowledge base.	Adds contextual information to Olympic and music-related artefacts based on provided text and optionally merges this information into the REEVALUATE knowledge base. For pilot 2 SPK tests the enabler.	Extracts structured contextual knowledge from text provided by curators or members of the public, and (optionally) merges this information into the REEVALUATE knowledge base
AI Contextualisation Enabler (Image based)	Uses visual similarity to identify related garments across the MoMu collection, enriching fashion artefacts with information such as material, contextual properties.	Pilot 2 could use this one too: Adds contextual information to Olympic and music-related artefacts based on provided images and optionally merges this information into the REEVALUATE knowledge base. For pilot 2 SPK tests the enabler.	Analyses visual features of archaeological artefacts and monuments to find similar items within the Knowledge Base, enriching them with contextual properties such as typology, material, and historical period.
Collaboration Enabler (Information Retrieval System)	Supports text-, image-, and text-image search to discover and explore digitised fashion artefacts across the MoMu collection.	Supports text-, image-, and text-image search to discover and explore Olympic and music-related artefacts. [Olympic, SPK, others]	Supports text-, image-, and text-image search to discover and explore digitised archaeological artefacts and contexts within the Aquileia virtual tour.
Collaboration Enabler (Matchmaking System)	Recommends fashion garments from the MoMu collection to users based on their profile interests and previous interactions.	Recommends Olympic and music-related artefacts to users. [Olympic, SPK, others]	Recommends archaeologically related artefacts to users.

Human Driven contextualization enabler	Organize campaigns to request more info (including references) about an artefact; to add extra context for the curators, when using the marketplace enabler	Used to organize campaigns in order to request and gather input from CHI's experts (internal), thereby enriching the knowledge base regarding the artefacts. Organize campaigns to request more information (including references) about an artefact to create more contextual information for the knowledge base/marketplace enabler (curators, other users of marketplace) [Olympic, SPK]	Organize campaigns to request more info or references about an artefact to be triggered and shown at the 3D virtual visit.
AI-Driven Creative Reuse Enabler	In the context of the game, the enabler allows players to combine and further develop existing digitised clothing items and accessories to create new, unique outfits, and clothing designs using generative AI.	The enabler is used and tested by FFP in the making of the film created in Pilot 2 and afterwards for others to reuse the assets.	n/a
Marketplace	The Marketplace allows cultural heritage institutions to upload and share digitised artefacts with their audiences, making them available for discovery and ethical creative reuse. It relies on the Collaboration Enabler to power intelligent search and matchmaking, helping end-users easily find and download artefacts that match their interests and needs.	The Marketplace allows cultural heritage institutions to upload and share digitised artefacts with their audiences, making them available for discovery and ethical creative reuse. It relies on the Collaboration Enabler to power intelligent search and matchmaking, helping end-users easily find and download artefacts that match their interests and needs.	n/a

4.2.2 Integrated Testing Plan

The testing plan as presented in Table 1. Table 2 covers the enablers which are tested directly by the pilots. Enablers tested indirectly via the Marketplace are not covered here.

Table 2: Testing plan Collaboration Enabler (Information Retrieval System)

Pilot	Users (type & expected)	Artefacts (type & number)	Expected Outcomes	Methodology/KPIs
Pilot 1 – Fashion & Gaming	3 people from MoMu	5 digitised garments + integrated Wikidata CH artefacts	Through the structured questionnaire, users will confirm (i) the system's use for multimodal search (usability), (ii) relevance of retrieved fashion artefacts to text and image queries (relevance), (iii) efficiency in finding design-relevant items (efficiency)	Feedback and satisfaction surveys from participants and stakeholders involved in the pilot.
Pilot 2 – Olympic Games & Music	3 people from Olympic; 2 people from SPK	Olympic: The digitised Olympic artefacts + integrated Wikidata CH artefacts; SPK: 20 music artefacts	Through the structured questionnaire, users will confirm (i) the system's use for multimodal search (usability), (ii) relevance of retrieved Olympic and music artefacts to text and image queries (relevance), (iii) efficiency in finding items (efficiency)	Feedback and satisfaction surveys from participants and stakeholders involved in the pilot
Pilot 3 – Aquileia Historic Site	3 people from Aquileia	5 digitised artefacts	Through the structured questionnaire, users will confirm (i) the system's ease of use for multimodal search (usability), (ii) relevance and contextual accuracy of retrieved archaeological items (relevance), (iii) efficiency in finding items (efficiency)	Feedback and satisfaction surveys from participants and stakeholders involved in the pilot

Table 3: Testing plan Collaboration Enabler (Matchmaking System)

Pilot	Users (type & expected)	Artefacts (type & number)	Expected Outcomes	Methodology/KPIs
Pilot 1 – Fashion & Gaming	3 people from MoMu	5 digitised garments + integrated Wikidata CH artefacts	Through the structured questionnaire	Feedback and satisfaction surveys from participants and stakeholders involved in the pilot
Pilot 2 – Olympic	2 people from Olympic; 2	The digitised olympic artefacts + integrated	Identify items that do indeed constitute a match	Feedback and satisfaction surveys from participants

Games & Music	people from SPK	Wikidata CH artefacts; 20 musical artefacts		and stakeholders involved in the pilot ? How many collaborations have been established
Pilot 3 – Aquileia Historic Site	3 people from Aquileia	5 digitised artefacts + integrated Wikidata CH artefacts	Through the structured questionnaire	Feedback and satisfaction surveys from participants and stakeholders involved in the pilot ? How many collaborations have been established

Table 4: Testing plan Contextualisation Enabler (Text, Audio, Image, AI-driven)

Pilot	**Users (type & expected)**	**Artefacts (type & number)**	**Expected Outcomes**	**Methodology/KPIs**
Pilot 1 – Fashion & Gaming	Curators/experts and/or members of the public (i.e., makers of the pattern pilot)	All digital artefacts included in the pilot	Based on contextual information in plain-text format, provided by a curator or members of the public, for each digital artefact, the context enabler will transform and integrate this information in the knowledge base	Number of "contextualised" digital artefacts. Number of "contextualised" digital artefacts with properly stored context in the knowledge base.
Pilot 2 – Olympic Games & Music	Curators and/or members of the public.	The digital artefacts included in the pilot	Based on contextual information in plain-text format, provided by a curator or members of the public, for each digital artefact, the context enabler will transform and integrate this information in the knowledge base	25 contextualised" digital artefacts. 25 contextualised" digital artefacts with properly stored context in the knowledge base.
Pilot 3 – Aquileia Historic Site	Curators and/or members of the public.	All digital artefacts included in the pilot	Based on contextual information in plain-text format, provided by a curator or members of the public, for each digital artefact, the context enabler will transform and integrate this information in the knowledge base public, for each digital artefact	Number of "contextualised" digital artefacts. Number of "contextualised" digital artefacts with properly stored context in the knowledge base.

Table 5: Testing plan Human Driven Contextualisation Enabler

Pilot	Users (type & expected)	Artefacts (type & number)	Expected Outcomes	Methodology/KPIs
Pilot 1 – Fashion & Gaming	Curators/experts and/or members of the public (i.e., makers of the pattern pilot)	All digital artefacts included in the pilot	The context enabler will provide context via contributions from curators & CHI experts and the general public (maker community). Contributions will be collected about CH artefacts with the aim of getting different looks and aspects.	Number of "contextualised" digital artefacts. Number of "contextualised" digital artefacts with properly stored context in the knowledge base.
Pilot 2 – Olympic Games & Music	Curators and members of the public.	The digital Olympic artefacts ´+ 20 music artefacts	The enabler will provide: Context contribution via general public and experts will be collected about CH artefacts with the aim of getting different look and aspects.	25 digitised artefacts stored in the repository and made accessible to the wider public
Pilot 3 – Aquileia Historic Site	Archaeologists (2) and University Professors (3). Total: 5 experts	5 artefacts: – Stone Weight – Well-head – Oven – Sestertius – Mosaic	The Human Driven Contextualisation Enabler will provide context. The expected outcome is to enhance and expand the information linked to the 5 artefacts, by collecting historical and technical expertise.	Number of digitised artefacts stored in the repository and made accessible to the wider public (20 digitalised artefacts + 1 archaeological area).

5 Pilot 1 - Fashion

5.1 Introduction

The REEVALUATE-Grant Agreement (GA) describes Pilot 1 as: Fashion Time Machine: Reusing Digitized CH Artefacts to Create a Fashion-Themed Mobile Game and Personalized Garment.
Based on the detail provided in the GA, the core tasks of the pilot are:

- ***Digitizing*** *several fashion heritage artefacts (garments) from the MoMu - Fashion Museum Antwerp*
- ***Contextualizing*** *these artefacts by collaborative process, using the REEVALUATE* ***Contextualization Enabler****.*
- *Initially the artefacts were supposed to be made* ***available to NURO****, to develop a fashion-themed game, interfacing* ***with the AI-driven Creative Reuse Enabler.*** *Due to the bankruptcy of Nuro, this activity will be taken over by CERTH and FFP, with pilot planning described in this second version of the deliverable.*
- *MoMu will also make the digitized artefacts available to* ***FibreMood*** *to* ***personalize a pattern*** *so that unique garments can be created for private collections, which also can be* ***shared with its users with the metadata*** *recorded for each item.*

- *In both cases, the collaboration between the MoMu – Fashion Museum, CERTH and FFP (replacing NURO) and FibreMood will be mediated through the **Collaboration Enabler.** This not only will enable the registration of the digitized CH objects their efficient search and retrieval, but also the establishment of the **copyright agreements** utilizing the smart contract capabilities of the **DLT based asset tokenization & IPR management enabler**.*
- *Following up on the earlier activities, **the Context Validation Enabler** will be used to check and validate that the digitized artefacts have not been misused or used out of context.*

The objective of the Fashion and Game Demonstrator is to thoroughly validate the comprehensive REEVALUATE-framework in the management of CH artefacts relating to the Fashion and Game industries. Both sectors will use the same digitised artefacts from MoMu, developing a separate pragmatic, real-world use case for each, namely a game and a personalised pattern. To ensure clarity, these two use cases will be referred to as: 'Game Pilot' and 'Pattern Pilot'. When referencing to the overarching demonstrator, these will be referred to the 'Fashion Time Machine' or 'Pilot 1' or 'Fashion and Game Demonstrator'.

Five partners will be involved in Pilot 1:

- MoMu (Pilot lead, content provider);
- FFP developer Game pilot;
- CERTH developer Game pilot;
- FibreMood (subcontracted partner (private company), Pattern pilot);
- EFHA (task leader 'pilot execution', network partner).

5.2 Pilot description

Although the Grant Agreement provides a detailed description of Pilot 1, covering its development, implementation, and the testing of various enablers, there remains considerable room for interpretation. Further clarification is needed regarding the practical implementation of Pilot 1, the methods for assessing the effectiveness and relevance of the REEVALUATE framework, and the organisation of stakeholder feedback across a broad spectrum.

The execution of Pilot 1 and the implementation of the REEVALUATE framework are structured in two phases (iterations). The first iteration took place between Month 23 and Month 26 (November 2025 – February 2026). During this phase it was envisioned that two prototypes will be developed:

- A functional prototype of the **Fashion** (Game Pilot – delayed due to NURO's bankruptcy)
- A published, personalised **sewing pattern** (Pattern Pilot – a prototype developed in the shape of the 'Mildred' pattern, cf. infra).

Both prototypes are based on digital assets provided by MoMu, the pilot lead. These initial versions enabled the first interactions with stakeholders identified in the Stakeholder Map (cf. infra) and support the planning and technical integration with the various enablers of the REEVALUATE framework.

The primary objective of Iteration 1 was to define and test:

- Digitisation workflows;
- User engagement strategies;
- Technical integration with REEVALUATE enablers.

These activities provided the groundwork for a smooth and effective execution of the second iteration. The second iteration is scheduled between Month 30 and Month 34 (June 2026 – October 2026). This

phase will build upon the outcomes of Iteration 1, scaling up the workflows and integrations for broader validation and impact.

The description of Pilot 1 will be organised into three distinct chapters, each outlining the complementary activities of the key partners involved in the creation of the **Fashion Time Machine**:

- Selection, Digitization and Content Provision (Led by MoMu);
- Gamificatione Pilot Description (Led by FFP/CERTH);
- Pattern Pilot Description (Led by FibreMood).

5.2.1 Content Selection, Digitization and Content Provision (MoMu)

5.2.1.1 MoMu's Collection: Starting Point of Pilot 1

The starting point of Pilot 1 is the museum collection of MoMu, and its expertise as a heritage institution. MoMu contributes both the physical artefacts to be digitized, and the knowledge necessary to contextualize their cultural and historical significance. In addition, MoMu provides guidance on the appropriate use and interpretation of the artefacts.

The pilot will use MoMu's **study collection**—a hands-on collection – separate from the museum collection - designed to support educational and research activities. MoMu recognizes that direct engagement with materials and techniques offers valuable learning opportunities. The study collection comprises over 2,000 items, including historical costumes, contemporary fashion pieces, accessories, textiles, samples, and fragments. It is intended to help visitors learn about fashion by allowing close examination of the objects. The study collection is available for:

- Scientific research;
- Educational use;
- Creative inspiration.

It can be accessed physically in MoMu's reading room and is also available online via the open-source content management system **Omeka-S**:
https://heron.libis.be/momu/s/studiecollectie/page/welcome.

The majority of items in the collection may be handled and reused and are shared under an open license (**CC BY**). Additionally, 2D garment patterns are currently available for approximately 100 objects[1]. MoMu has in-house capacity to produce new patterns, supported by a part-time pattern maker employed by the museum.

5.2.1.2 MoMu's Object Selection and Thematic Framing for Pilot 1

As part of Pilot 1, MoMu identifies artefacts that are most suitable for reuse and provides expert guidance on how these items can be effectively contextualised and presented. MoMu actively participates in the collaborative contextualisation process, working with citizens and stakeholders to explore meaningful ways in which the digitised artefacts can be used to support cultural innovation and progression.

A unifying theme has been selected to guide both the Game and Pattern use cases: **"The wardrobe of a woman in five different periods/settings"** This overarching concept supports coherent storytelling across both pilots. In the Game Pilot, it enables the creation of a consistent avatar dressed in five distinct historical or thematic contexts. For the Pattern Pilot, the theme aligns with Fibre Mood's editorial focus, as the majority of patterns featured in its publications are designed for women. The

[1] Ca. 100 patterns are available and validated by MoMu's pattern maker, in October 2025, 56 of them were digitised and uploaded on the Study Collection website https://heron.libis.be/momu/s/studiecollectie/page/welcome (under 'pattern-a-thon' section). May 2026, there were 79 patterns available.

theme also allows for the exploration of diverse periods, settings, techniques, garment types, materials, and fabrics. Given the richness of MoMu's study collection, many objects could potentially fit within the concept of "a woman's wardrobe across different periods/settings."
To refine the selection, MoMu collaborated with FibreMood, CERTH and FFP to apply a set of criteria, including:

- Availability of digital assets (e.g., photographs, detail shots, patterns, texture data);
- Physical condition and accessibility of the object;
- Quality and completeness of metadata;
- Complexity of the garment's pattern;
- Materials and techniques used;
- Year of creation;
- Licensing and intellectual property considerations;
- Storytelling potential;
- Relevance and appeal for both the Game and Pattern pilots;

The selection process is iterative and consists of two distinct phases:

- **Longlist Phase:** MoMu staff compiled a preliminary list of approximately 70–80 objects from the study collection, based on the criteria above. This dynamic subset is published online: https://heron.libis.be/momu/s/studiecollectie/page/REEVALUATE. The list is dynamic (work-in-progress) and was reviewed and discussed with the other pilot partners, who were also invited to suggest additions or removals.
- **Shortlist Phase:** A refined shortlist was created, consisting of objects with the highest potential for the pilot's selection. This shortlist was defined by MoMu in close collaboration with FP/CERTH and FibreMood, and with input from EFHA where relevant. 5 objects will be selected from this shortlist and will feature in the Game and Fashion Pilot.

For the first iteration, MoMu selected a representative object from the "Roaring Twenties": a 1920s silk evening dress featuring a relatively simple cutting pattern and distinctive sequin embroidery[2]. This object evokes the spirit of the Jazz Age and was worn during festive occasions, offering rich storytelling opportunities. It symbolises both the freedom of women in the 1920s, while also reflecting the decadence of the era, thus providing a narrative bridge to the Great Depression and its impact on fashion.
Given the age of the object (approximately 100 years old), and the absence of identifiable copyright holders, it is considered low-risk for open reuse. The object has been properly documented and digitally photographed and is now available for use as a prototype in Iteration 1.

Online record: http://data.momu.be/ark:34546/mn0318

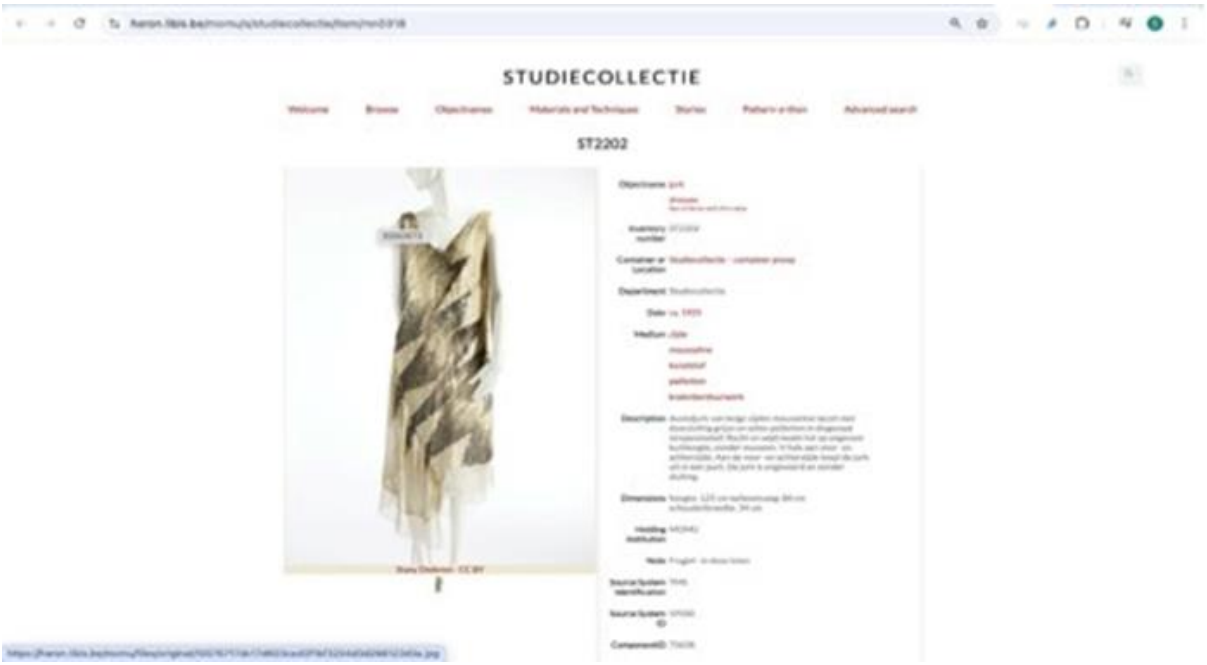


Figure 1: Webpage from MoMu's study collection of ST2202

During the second iteration, four additional objects will be selected and processed using the same digitisation workflow as the prototype ST2202. These objects will be[3]:

- ST503 (http://data.momu.be/ark:34546/mcc2mf);
- ST81114AB (http://data.momu.be/ark:34546/m2rbtz)
- ST81116 (http://data.momu.be/ark:34546/mt76pz)
- ST80998 (http://data.momu.be/ark:34546/mp5hw9)

5.2.1.3 MoMu's Digitization & content provision workflow

Once an object has been selected for inclusion in Pilot 1, MoMu undertakes a series of additional steps to generate supplementary digital resources and prepare the content for use by the pilot developers and partners. These actions are outlined in the following subsections, with further explanation provided where relevant.

5.2.1.3.1 Overall condition assessment of the artefact

This step involves evaluating the current physical condition of the selected artefact, identifying any damage, signs of deterioration, and the materials used. Such assessments are typically carried out by conservators or interdisciplinary teams. In this case, the condition assessment was performed by MoMu's in-house pattern maker, with support from the museum's conservator.

[3] Slight changes to the shortlisted objects may still occur.



Figure 2: Assessing the condition of ST2202

5.2.1.3.2 Analysis of the constructive elements

This step involves analysing the artefact from a structural and constructional perspective, with the aim of facilitating the pattern drafting process. The analysis focuses on understanding how the garment was assembled, including its components, seams, and construction techniques. This task was carried out by MoMu's in-house pattern maker.

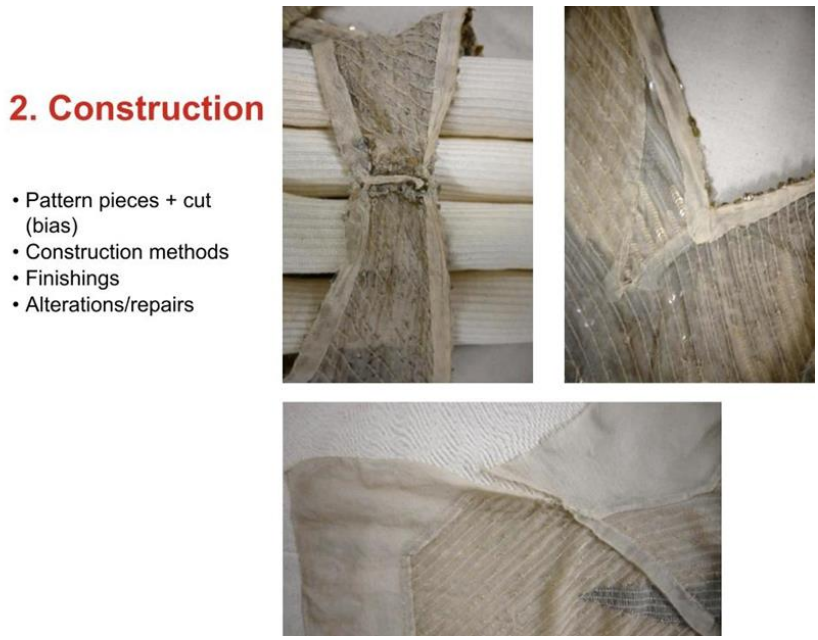


Figure 3: Analysing the construction of ST2202

5.2.1.3.3 Measuring, drafting and validating the 2D-pattern with a 3D model

This is a technically complex process, carried out by MoMu's in-house pattern maker. It involves an iterative workflow of measuring the physical garment, drafting the pattern, inserting it into a 3D design environment (in this case, **CLO3D**), and continuously refining and validating the output.

CLO3D (https://www.clo3d.com/en/) is a professional 3D fashion design software that enables users to create digital garments and accessories, visualise them in a realistic 3D environment on virtual avatars, and simulate fabric behaviour such as drape and fit. The software streamlines the design process, reduces reliance on physical samples, and helps save time, cost, and material waste. It supports pattern creation, texture generation, fabric simulation, and digital collaboration.
Although CLO3D is not open source and uses proprietary file formats, it supports export to various open and proprietary formats. MoMu holds a valid license for CLO3D, which is widely regarded as the industry standard. The museum's staff is experienced with the software, and its compatibility with open formats facilitates collaboration with NURO and FibreMood. CLO3D also offers plug-ins for integration with different gaming engines, making it suitable for the Game Pilot.
The slides below illustrate the process of drafting the pattern and inserting it into CLO3D for validation. As a by-product of this process, CLO3D generates a 3D model that serves as a reference for verifying the accuracy of the 2D pattern. This model is developed in stages:

- The first version is a generic 3D mock-up, or *toile*, representing an early prototype of the garment made from basic materials, used to test and refine the design.
- The second version incorporates richer texture information, simulating realistic fabric properties such as weight, stiffness, transparency, and reflectivity.

Users can select textures from CLO3D's built-in library or upload custom texture maps to enhance realism.



Figure 4: Measuring ST2202

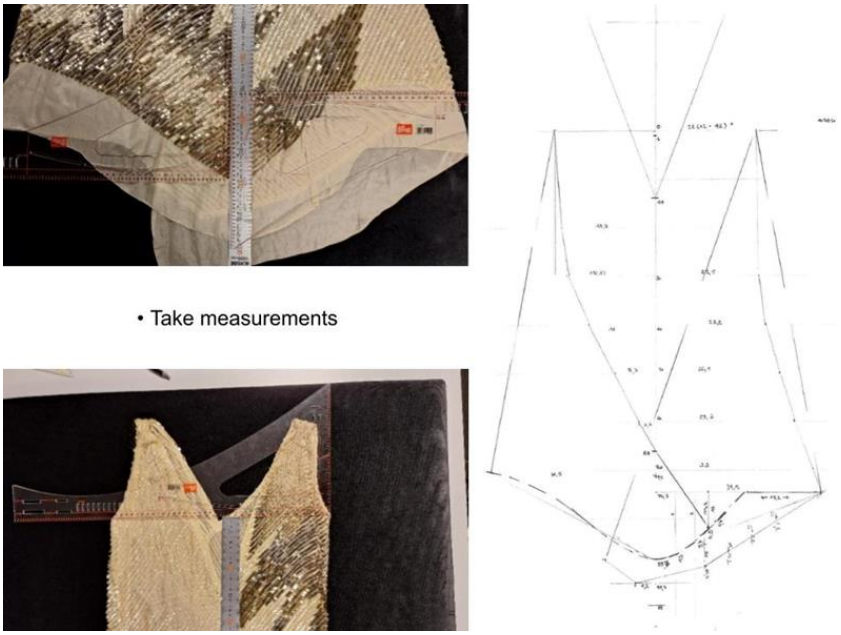


Figure 5: Drafting the Pattern of ST2202



Figure 6: Validating the 2D Pattern in CLO3D

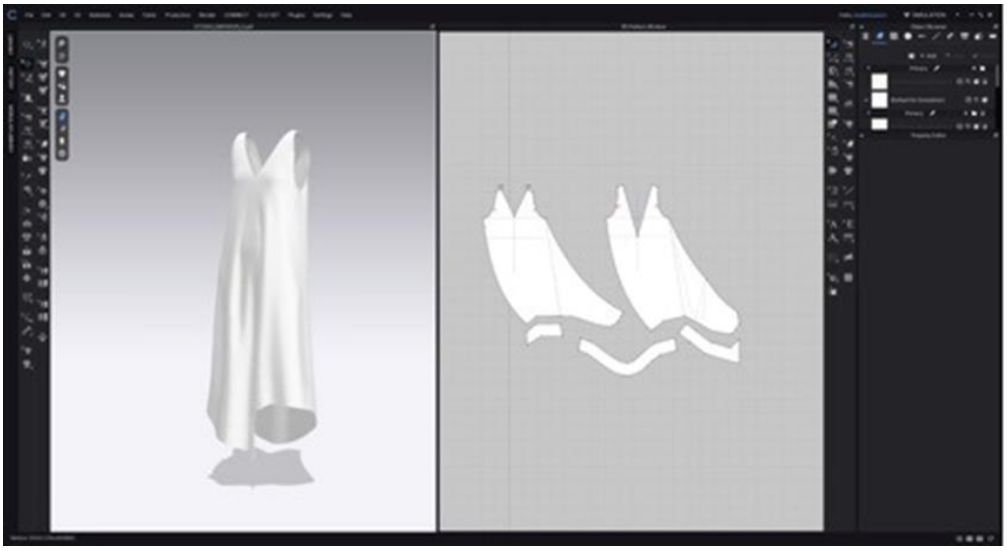


Figure 7: Creating a 3D model in CLO3D (toile)



Figure 8: A Textured 3D Model in CLO3D

5.2.1.3.4 Publishing the pattern as PDF/SVG

Once the 2D pattern has been validated using the 3D model and approved by MoMu's pattern maker, a publishable version of the pattern is generated in both **PDF** and **SVG** formats. For accessibility and usability, the **PDF format** is primarily used for publication and printing.

As illustrated below, the PDF includes:

- Metadata referencing the original object;
- A legend and measurement indicators;
- The complete pattern with relevant annotations.

The **SVG file** is not the main publication format and is preserved in MoMu's digital asset management system. It is not always published on the website and is retained for future use, such as further design development or technical processing. This dual-format approach ensures both broad accessibility and long-term flexibility for reuse and collaboration.

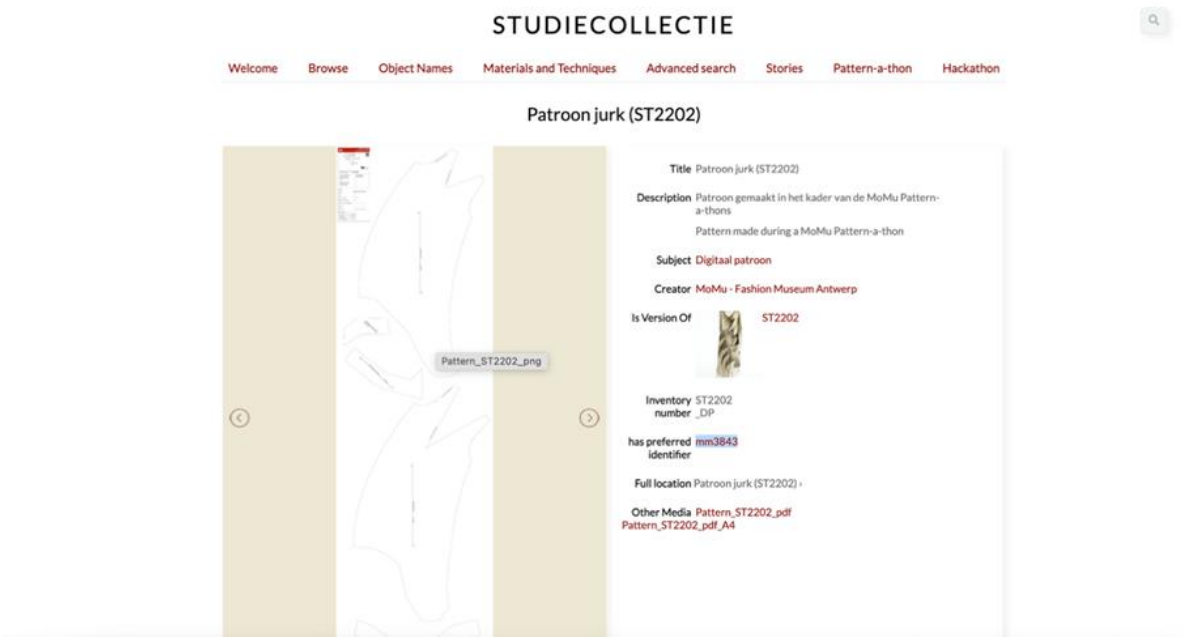


Figure 9: Published 2D pattern as pdf for ST2202

5.2.1.3.5 Reviewing the Metadata and Creating a Storyline

For this prototype, a museum curator / registrar reviewed all existing documentation and metadata associated with the selected museum object. The information was verified for accuracy and completeness. In addition to this review, the curator enriched the object record by adding a **storytelling element**, designed to make the artefact more accessible and engaging for a wider audience. This narrative was incorporated into the 'context' property of the object webpage[4].

5.2.1.3.6 Uploading in the REEVALUATE-Repository

During the initial pilot stage (1st iteration), the integration process was manual and expert-driven. The project team used API calls to upload artefacts directly to the REEVALUATE repository. Concurrently, the associated metadata is transferred separately to a Knowledge Graph (KG) expert, who manually transformed it into the CACAO ontology format. This CACAO-compliant metadata was then ingested into the REEVALUATE knowledge base. This two-part process requires technical specialists with expertise in both the repository API and the CACAO ontology.

In contrast, the final stage fully automates and unifies this workflow for privileged users, e.g., curators, via the marketplace. A dedicated interface will connect the storage API and a metadata template, allowing users to submit artefacts and their descriptions in a single action. To accomplish this, a translation layer will map user input from the simplified template directly into the formal CACAO structure required by the knowledge base. This automated pipeline removes the need for manual intervention from the technical experts' side and allows closer control over the artefacts from the curators' side.

5.2.2 Gaming Pilot

Following the bankruptcy of the original Game Pilot developer, NURO, in Q2 2025, the responsibilities for the Gaming Pilot have been formally reassigned to CERTH and FFP. Building on the conceptual groundwork laid by NURO and on the digital assets provided by MoMu, CERTH and FFP have since

[4] http://data.momu.be/ark:34546/mn0318

developed a working first-iteration prototype: an interactive 3D Unity-based museum installation centred on the digitised garment ST2202, in which visitors select an avatar, dress it with the digitised artefact, and animate it on a virtual fashion-photoshoot stage through real-time AI motion capture. The sections that follow describe the current state of the Gaming Pilot as implemented by CERTH and FFP, superseding the earlier NURO concept that appeared in version 1 of this deliverable. Further refinements and the second-iteration pilot plan are reflected in this deliverable.

5.2.2.1 REEVALUATE Fashion Museum Installation — Concept Vision

REEVALUATE delivers an interactive 3D museum installation that lets visitors engage with digitised historical garments from MoMu's study collection in a way that goes beyond static display. Standing in front of the installation, a visitor selects a virtual avatar, dresses it with a digitised museum garment, and steps onto a virtual fashion-photoshoot stage. From that point on, the visitor's own body becomes the puppeteer: a camera captures their movements and the avatar mirrors them in real time, allowing the visitor to embody the garment, walk it, pose it, and effectively "try on" a piece of fashion heritage without ever touching the original artefact.

The installation has been conceived as a dual-purpose system. As a public-facing museum experience, it offers a novel, embodied form of engagement with cultural heritage that complements traditional curatorial display. As a research platform, it provides the technical foundation for academic work on AI-driven cultural heritage interaction, with all components designed to be reproducible and extensible to additional garments and use cases.



Figure 10: Female avatar dressed in ST2202 on the photoshoot stage.

Technology Stack

The installation is built on a real-time 3D rendering layer integrated with an AI-driven motion-capture layer:

Rendering engine. The application runs on Unity LTS using the Universal Render Pipeline (URP), providing the cinematic look required for the photoshoot-stage aesthetic while remaining performant on standard exhibition hardware.

Avatar system. Avatars are built on the UMA (Unity Multipurpose Avatar) framework, which supports runtime mesh generation, slot-based wardrobe composition, and dynamic bone rigging. UMA was selected because it allows the same avatar rig to wear different digitised garments without bespoke skinning work per artefact.

Garment digitisation and rigging pipeline. Historical artefacts digitised by MoMu in CLO3D arrive as 3D meshes carrying their original simulation rig. At CERTH, each garment is processed in Blender, where it undergoes mesh cleanup (topology, UVs, normals) and critically is re-rigged onto the UMA skeleton: bones bound, vertex weights painted, and bind pose aligned so that the garment deforms correctly with the avatar's body when animated or driven by motion capture. The rigged garment is exported as FBX and ingested into Unity, where it is wrapped as a UMA wardrobe slot with an associated recipe and overlay textures, making it interchangeable across avatars at runtime.



Figure 11: ST2202 garment re-rigged onto the UMA skeleton in Blender.

AI motion-capture stack. A Python-side tracker runs a pose-estimation model (UPose, built on MediaPipe) on the camera stream, extracting a skeleton of body keypoints at real-time frame rates. The keypoints are transmitted to the Unity application via a UDP socket on localhost. Inside Unity, a custom pose-driver component developed at CERTH (UMAPoseDriver) maps the incoming keypoints onto the UMA bone hierarchy frame by frame.

Cinematic presentation layer. The photoshoot-stage scene uses a runway-style lighting rig and a URP post-processing volume (bloom, tonemapping, colour grading, vignette) to give the visitor's avatar a polished, editorial appearance suited to the fashion-museum context.

Key Features

Avatar selection from a curated set of UMA-based characters.

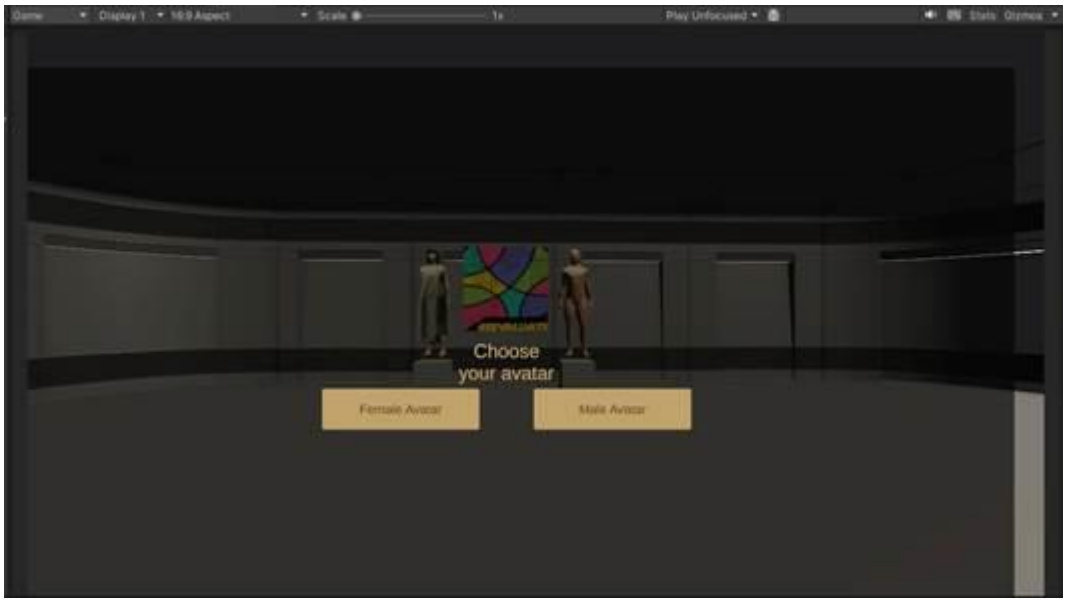


Figure 12: The avatar-selection screen.

Garment selection from the digitised MoMu collection, with the avatar re-dressed at runtime.

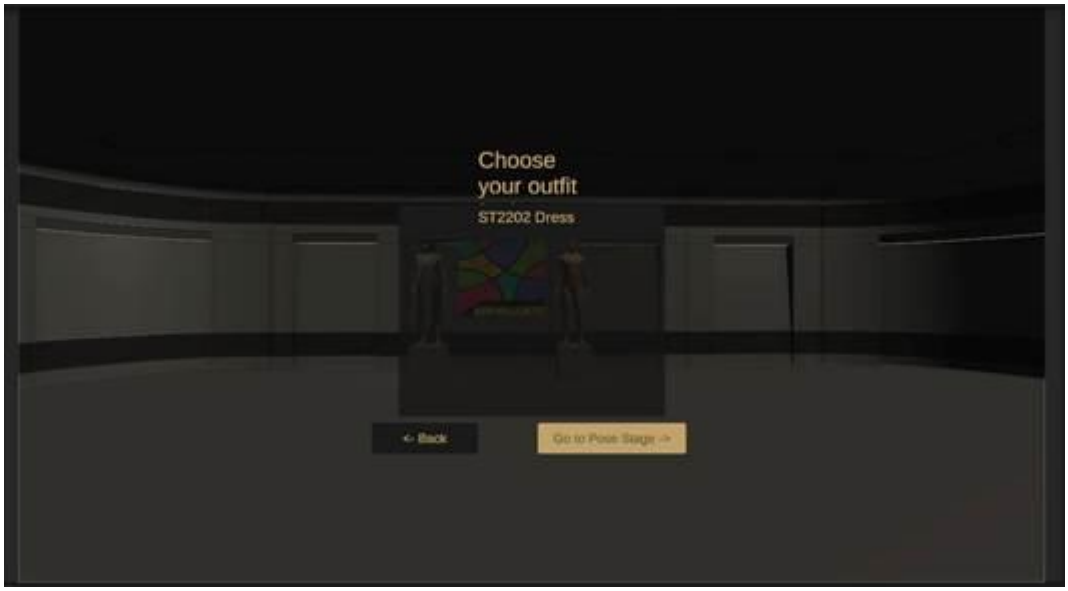


Figure 13: The outfit-selection screen, showing the ST2202 Dress.

Photoshoot-stage scene with cinematic lighting, post-processing, and curated camera angles.

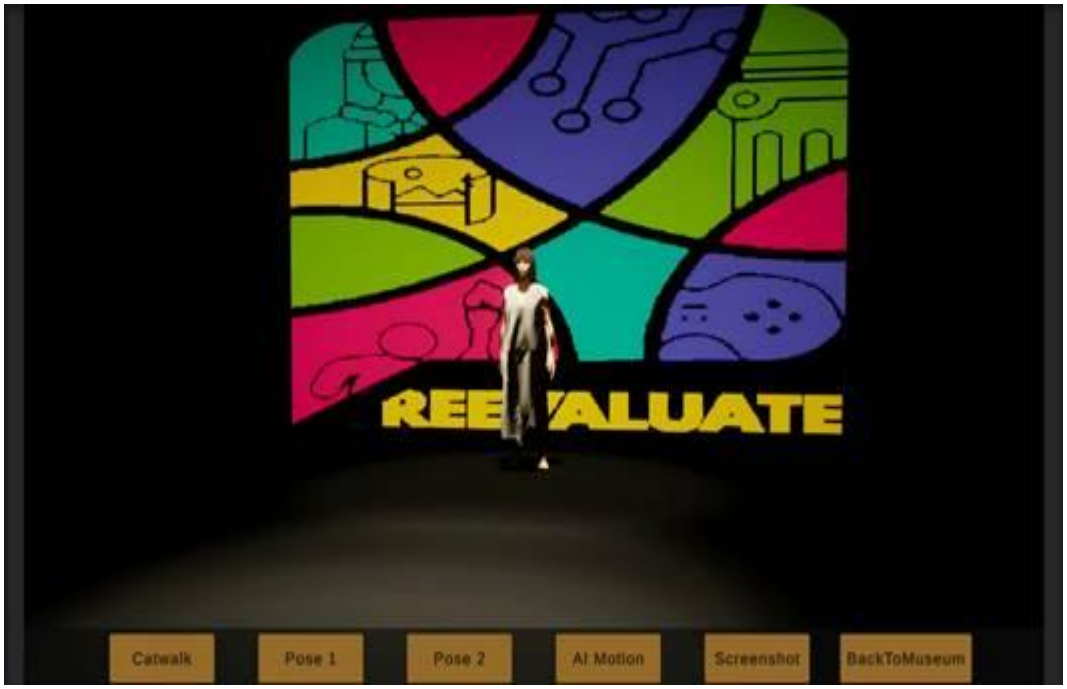


Figure 14: The photoshoot stage with cinematic lighting and UI controls.

Real-time motion mirroring: the visitor's pose, captured by a camera, drives the avatar's full body in real time.

Mixamo-sourced animations triggered via on-screen buttons (idle, walk, pose presets) as a complement to live motion capture.

A screenshot feature that lets visitors capture their styled avatar on the stage as a take-home artefact of their visit.

Contextual layers around each garment (historical period, construction, provenance, MoMu storyline) integrated into the user interface.

System Architecture (High Level)

The system is organised as two cooperating processes running on the same machine. A Python process owns the camera, runs pose estimation, and streams compact skeleton frames over UDP. The Unity process listens for those frames, applies them through the CERTH-developed pose-driver onto the active UMA avatar, and renders the scene with all its cinematic dressing. This architecture keeps the AI pipeline and the rendering pipeline decoupled: the pose-estimation model can be swapped or upgraded without changes to the Unity application, and the Unity application can fall back to canned animations if the tracker is unavailable.

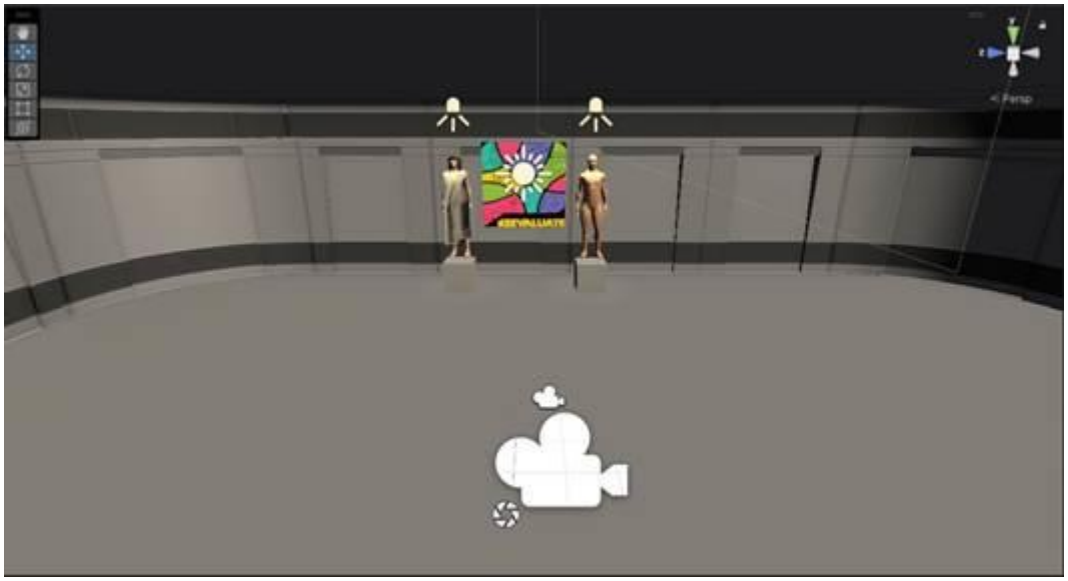


Figure 15: The museum scene in the Unity Editor.

FUTURE EXTENSIONS

The next development cycle will focus on extending the integration pipeline established for ST2202 to additional MoMu artefacts using Blender to re-rig each new garment onto the UMA skeleton before adding it to the installation and on continued refinement of the AI motion-capture component to improve its robustness and accuracy inside the museum installation.

5.2.3 Pattern Pilot by Fibre Mood

Fibre Mood is a Belgian-based company specialising in contemporary sewing patterns and DIY fashion. As a subcontracted partner in Pilot 1, Fibre Mood contributes its expertise in pattern development and user engagement within the sewing community. The company supports users in creating unique, personalised garments. For the Pattern Pilot, Fibre Mood integrates digitised heritage artefacts from MoMu into its platform, offering users access to historical designs enriched with contextual metadata. This approach not only promotes creative reuse but also fosters cultural awareness by linking modern sewing practices with fashion heritage.

5.2.3.1 PATTERN PILOT: MoMu – Fibre Mood Collaboration

As part of the Pattern Pilot, five women's garments from MoMu's collection will be transformed into sewing patterns, enabling makers to create personalised versions of each piece. This process involves a series of specialised tasks, including selecting suitable garments, adapting historical patterns to contemporary sizes and user needs, developing instructions and work descriptions, recommending modern materials, producing replicas, organizing photo shoots, publishing the patterns, and engaging with relevant user communities. These activities require expertise and a professional network beyond the museum's internal capacity. To address this, MoMu established a formal collaboration with **Fibre Mood**, a subcontracted partner with proven experience in pattern development and community engagement.

The following section is an extract from the MoMu-Fibre Mood collaboration agreement[5]. It outlines Fibre Mood's responsibilities within the scope of the REEVALUATE project, ensuring the successful execution of the Pattern Pilot through a structured and expert-led approach.

> *(…) a project will be developed for five museum objects. Specifically, FIBRE MOOD will use this selection to develop five DIY kits for a community of creators, whereby a personalised version of a museum object will be created. The previous collaboration between MoMu and FIBRE MOOD[6]serves as a model for the output that FIBRE MOOD will generate[7]. These five packages will include at least the following components:*
>
> - *a paper/digital pattern (graded from XS to XXXL or sizes 32 to 60) with stitching and cutting lines, based on the museum object (in a "print-friendly" format, for printing in A0 and A4 format);*
> - *size charts;*
> - *work descriptions in English, French, German and Dutch;*
> - *(suggested) list of materials/accessories/tools needed to complete the pattern (possibly with specifications for lining, finishing, etc.);*
> - *instructional videos;*
> - *photo shoot with a model wearing the completed "project", possibly also including illustrative images of the project.*
> - *social media channels for sharing the pattern + results by the FIBRE MOOD community*
> - *these kits also contain references to the metadata/digital content created for each item by MoMu, so that users interested in adopting the pattern or design can also understand the history or story and context of the original artefact.*
>
> *These five DIY packages will be published on the FIBRE MOOD website and/or in the FIBRE MOOD magazine. FIBRE MOOD is also supporting the project by helping to communicate these five projects and is inviting its community of makers to get started with the content developed for the REEVALUATE project.*

Following sections illustrate the actions taken by Fibre Mood to implement the Pattern pilot.

5.2.3.2 Pattern Pilot; Object Selection

The description of the Pattern Pilot builds upon the finalized project based on object ST2202 (cf. supra) Selection of artefacts by Fibre Mood is done in close collaboration with MoMu.

5.2.3.3 Pattern Pilot: Analysis

As part of the Pattern Pilot, Fibre Mood undertakes a detailed visual and structural analysis of the selected museum object. This process involves examining the garment's construction, identifying significant design features, and recognising distinctive tailoring techniques. The analysis is carried out by Fibre Mood's Creative Director, who documents the process through extensive notes and photographs. She is also responsible for drafting the adapted pattern and producing a contemporary replica of the garment with her team (cf. Pilot Team Chapter for more background). This adaptation

[5] MoMu and Fibre Mood made a collaboration agreement for the REEVALUATE project: Approved by the Comity of Directors of AG Culturele Instellingen / Erfgoed on 8th of May 2025 (2025_DCERFGOED_00089).
[6] *Based on museum object ST2144: http://data.momu.be/ark:34546/m3bk83*
[7] *cf. https://www.fibremood.com/nl/product/1102-24501-lucy-jacket-pod#/*

must be suitable for Fibre Mood's community of makers, who work with accessible materials and techniques. Given that the original object is a couture piece from the 1920s—likely requiring many of hours of skilled labour (because of the elaborate embroidery) and expensive materials—a direct replica is not feasible.
While the outcome is an adaptation of the original, it is essential that the most defining characteristics, techniques, and stylistic elements of the original artefact are preserved and thoughtfully integrated into a contemporary design.

To support this process, the MoMu team provides enhanced metadata, contextual narratives, high-quality photographs, condition assessments, construction analyses, and a validated 2D pattern and 3D model. MoMu also assists with the physical handling of the artefact and supports the documentation of its distinctive features.

5.2.3.4 Pattern Pilot: Drafting a Pattern and Creating a Replica

The next action taken by Fibre Mood is the creation of the new 'inspired by' pattern. Under the lead of the Creative Director, a team of three people will further develop the pattern and validate it through and actualised prototype/replica. Once completed, the pattern will receive a name; for example, the pattern of ST2202 was named 'Mildred'. As is customary for Fibre Mood magazine patterns, women's names are used for womenswear designs, and men's names for menswear.



Figure 16: Origina l Object ST2202 + replica of Mildred created by the Creative Director of Fibre Mood



Figure 17: Replica 'Mildred' + paper pattern (created by Fibre Mood) on display in the MoMu shop.

5.2.3.5 Publication(s) of the Pattern Pilot

As foreseen in the collaboration agreement between MoMu and Fibre Mood, the Pattern Pilot is published in the magazine and/or the website of Fibre Mood. The publication consists of the following elements:

- a paper/digital pattern (graded from XS to XXXL or size 32 to 60) with stitching and cutting lines, based on the museum object (in a "print-friendly" format, for printing in A0 and A4 format);
- size charts;
- work descriptions in English, French, German and Dutch;
- a (suggested) list of materials, accessories and tools needed to complete the pattern (possibly with specifications for lining, finishing, etc.);
- instructional videos;
- photo shoot with a model wearing the completed "project", possibly also including illustrative images of the project.

The sections below illustrate the publication process. Successive screenshots were taken of the Lucy jacket's publication, on a dedicated Fibre Mood-webpage. As pictured, the webpage can be browsed in four languages and features a replica of the Lucy jacket, worn by a fashion model. The pattern can be bought in different sizes and can be downloaded with different features. The webpage also has a number of tabs that include additional resources and information:

- description of the historical object with an adapted version of the metadata and storytelling of the historical object;
- work instructions;
- suggestion for materials;
- size charts;
- video instructions.

A number of icons and tabs on the webpage invite makers and magazine to comment and review the pattern and share their creations. This will be further elaborated below. The pattern's degree of complexity is also shown on the webpage.

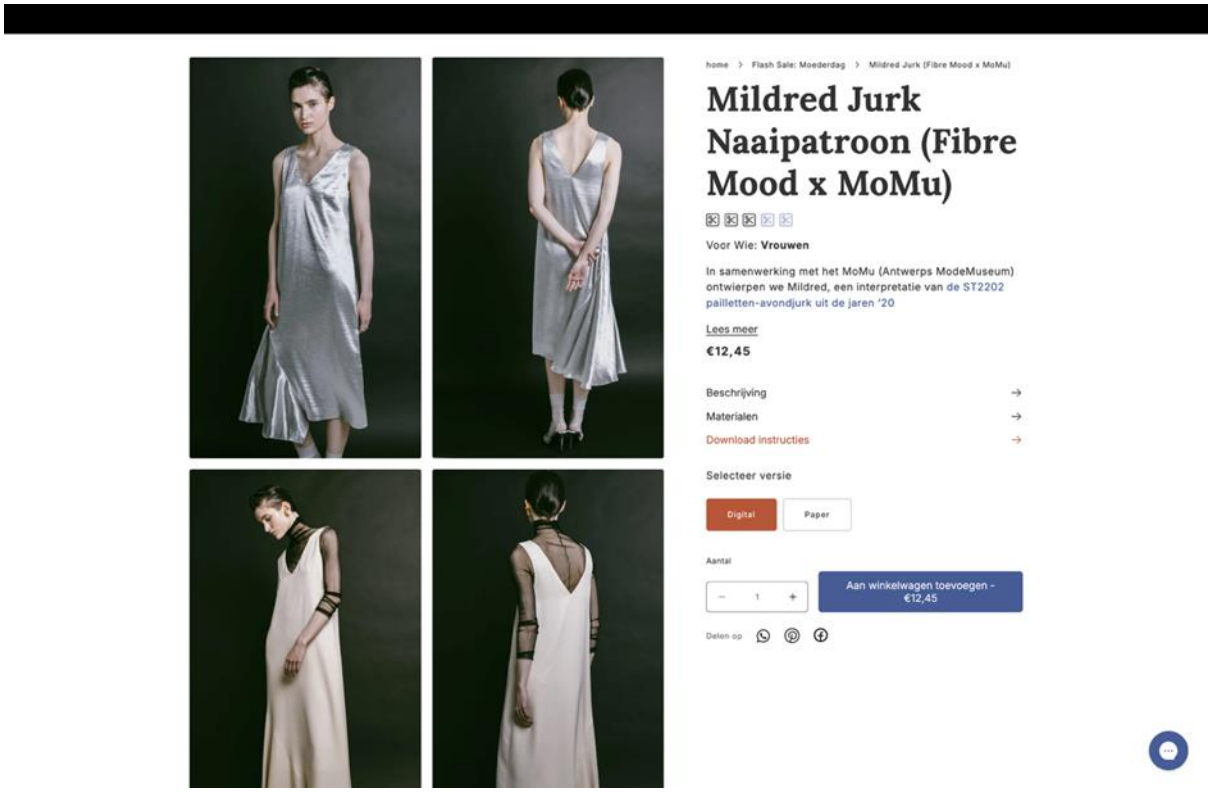


Figure 18: „Mildred", published on Fibre Mood website

Mildred was only published online. Referring to an earlier collaboration (see also D4.1), The 'Lucy jacket' was published in the physical magazine, as can be seen in the following image:

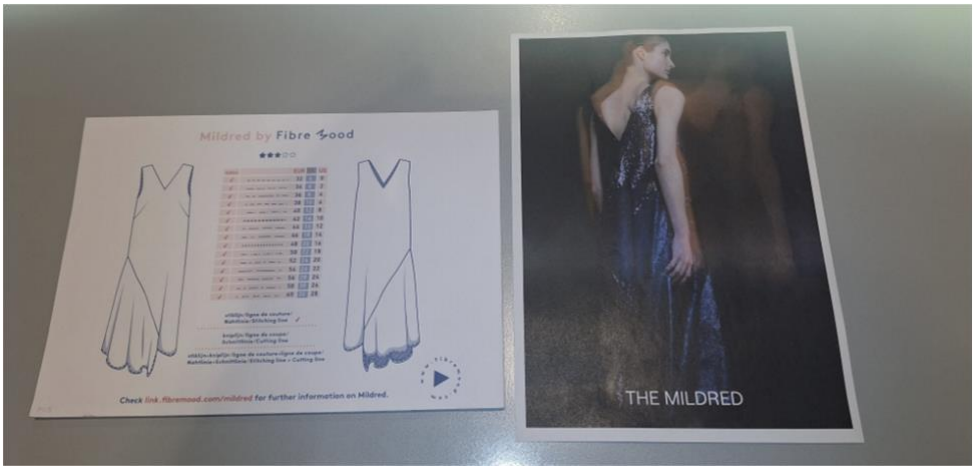


Figure 19: Photo of 'The Mildred' pattern, as published by Fibre Mood

As pictured in Figure 21, in addition to its online and magazine publication, the **Mildred pattern** was made available as a physical pattern through the **MoMu museum shop**. Visitors could purchase the pattern, which was displayed next to Fibre Mood's replica of ST2202. This approach provided museumgoers with a tangible entry point into the Pattern Pilot, allowing them to engage with the project by starting their own sewing process based on the historical garment.

5.2.3.6 Sewing 'Mildred' and Keeping Track of the Use of the Pattern Pilot

Fibre Mood's active online community and publication channels offer an ideal environment for testing the REEVALUATE framework in real-world, user-driven design scenarios. This final section focuses on the actual creation of the Lucy jacket by end users. Most makers complete their sewing projects at home, making it difficult to track usage beyond the number of pattern downloads.

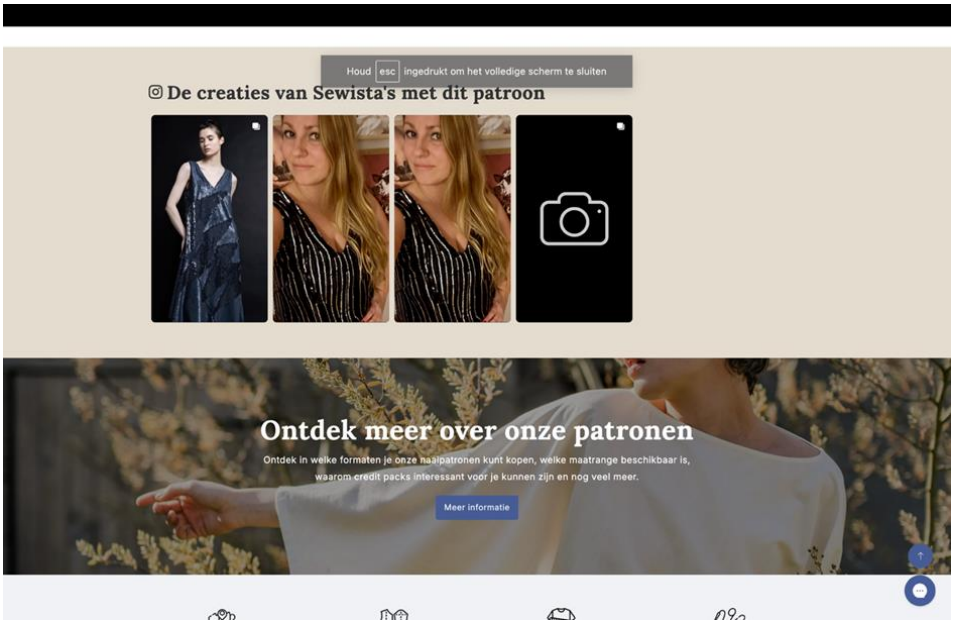


Figure 20: Mildred on FIbre Mood webpage - Community Tab

However, Fibre Mood's integrated social media ecosystem provides valuable indicators of engagement and impact. Metrics such as the number of views on instructional YouTube videos, the volume of Instagram shares within the Fibre Mood community, and user comments or reviews on the

pattern webpage offer qualitative and quantitative insights into the success and reach of the Pattern Pilot. These community-driven interactions serve as informal validation of the pilot's effectiveness and help assess how well the digitised heritage artefact has been reinterpreted and reused in a contemporary context. These indicators are tracked via KPI '**Social media engagements to the pilot'** and will be reported as such.

As an extension of the Pattern Pilot, MoMu will organise up to three workshops in which the selected museum pattern is once again transformed into a physical garment, effectively closing the loop from physical to digital and back to physical. Under the guidance of an experienced tailor, a workshop will host 6 to 8 participants who will create a personalised version of the selected museum object. The workshop will span one to two days, depending on the complexity of the design and pattern.

This format was previously tested with the Lucy jacket, and participant feedback was overwhelmingly positive. These workshops not only foster hands-on engagement with fashion heritage but also serve as valuable opportunities for 're-use/sewer'-stakeholder to test the different enablers and collect their valuable feedback regarding the REEVALUATE-framework.



Figure 21: Images from a MoMu Workshop dedicated to creating the Lucy Jacket (photo by Jeroen Broeckx)

Pilot 1 will be primarily hosted at the premises of **MoMu – Fashion Museum Antwerp**, located in the city centre of Antwerp, Belgium. The museum offers over 2,000 m² of exhibition infrastructure, and includes an auditorium, offices, ateliers, workshop rooms, a café, and a museum shop.

For the purposes of the pilot, the **reading room** of MoMu's library will serve as the central hub. This space houses the museum's study collection and is where most digitisation and content provision activities take place. It is also the workplace of MoMu's in-house pattern maker and a key location for stakeholder engagement, particularly with those targeted by the REEVALUATE framework.



Figure 22: MoMu's Reading Room (photo by Matthias De Boeck)

Additional museum spaces involved in Pilot 1 include:

- The **museum shop**, which will serve as a distribution channel for the Pattern Pilot;
- The **educational workshop**, which may be used to host hands-on pattern reuse workshops.

These physical locations support the full lifecycle of the pilot—from heritage object selection and digitisation to public engagement and creative reuse.

5.2.4 Pilot personnel

The execution of Pilot 1 involves staff from multiple partner organisations. In line with privacy and generalisation principles, individuals are referred to by their functional roles rather than by name.

From MoMu – Fashion Museum Antwerp:

- **Project Coordinator – Dries Van Noten Study Center**: responsible for project management and contributing to deliverables.
- **Pattern Maker**: role detailed in section 5.2.2.
- **Researcher/Registrar**: involved in metadata review and contextualization (see section 4.2.2.3.5).
- **Conservation Specialist**: primarily engaged in condition assessment (see section 5.2.2.3.1).
- **Education Staff**: supporting workshop facilitation and stakeholder engagement (see section 5.2.4.6).
- **Shop & Merchandise Manager**: responsible for pattern distribution through the museum shop (see section 5.2.4.5).

From Fibre Mood:

- **Creative Director**: lead for pattern development and design adaptation (see section 5.2.4).
- **Pattern Development Team** (3 members, including the Creative Director): responsible for pattern drafting, replica creation, editorial content (Dutch), and redaction.
- **Freelance Translation Bureau**: translating content into English, German, and French.
- **Graphic Team** (2 members): responsible for illustrations, technical drawings, and layout.
- **Art Director**: overseeing visual and editorial coherence.

- **Freelance Grading Bureau**: handling pattern grading across sizes.
- **Freelance Photographer, Stylist, Make-up Artist, and Model**: involved in the photoshoot for the final garment presentation.

From EFHA:

- **Pilot manager:** responsible for coordinating EFHA activities in the pilot and contributing to deliverables and monitoring progress.
- **Senior curator:** involved in metadata review and contextualization
- **Communication officer**: responsible of communication and stakeholders' engagement in collaboration with MoMu.

From NURO: n/a.

5.2.5 Pilot Methodology

This section describes the methods and activities used for measuring the KPIs. The measurement of KPIs in Pilot 1 is closely tied to the structured involvement of three core stakeholder groups: SMEs from the Creative and Cultural Industries, Cultural Heritage (CH) professionals, and Makers/Creatives/Citizens[8]. Each group contributes to the pilot through targeted activities designed to generate measurable outcomes aligned with the project's objectives.

SMEs will engage with the Marketplace and its enablers in real-life scenarios, reusing REEVALUATE content. Their participation will be tracked through attendance records, digital questionnaires, and usability surveys. CH professionals and curators, primarily from public museums, will use the contextualisation enabler to enrich digitised heritage objects with expert knowledge. Their contributions will be documented via feedback forms and platform logs, and feedback will be gathered through structured (online) surveys. Makers and creatives will similarly interact with both the contextualisation enabler and the Marketplace, with their engagement measured through workshop attendance, digital content reuse, feedback forms (online questionnaires and usability surveys) and social media activity.

Within the Gaming Pilot, the AI-Driven Creative Reuse Enabler is realised through the installation itself: MoMu's digitised 3D garments are creatively reused by being integrated into the app as interactive virtual artefacts, which visitors dress an avatar with and animate through real-time AI motion capture, giving the digitised heritage a new interactive life beyond its original archival form. The Context Validation Enabler will then be applied downstream: video footage captured from the installation will be submitted to the enabler, which performs automated checks for nudity, violence, and other unwanted contexts before the material is reused in public-facing communications, exhibition materials, or marketplace listings.

All stakeholders will use the MoMu dataset, and formal agreements (including consent forms and project information sheets and data sharing agreements) are being drafted to ensure ethical data collection. Workshops, both planned and adaptive, serve as key activities for engagement and data generation, particularly for the Makers group. Feedback and satisfaction surveys, social media metrics, and repository uploads are among the tools used to quantify stakeholder interaction. This multi-

[8] For reasons mentioned in 5.2.3, stakeholders related to the 'Game Pilot', are not taken into consideration in this version of D4.1.

method approach ensures comprehensive and reliable KPI measurement across diverse stakeholder contributions.

5.2.6 Ethical and legal requirements

Pilot 1 adopts a critical and reflective approach to the digitisation of cultural heritage, ensuring that cultural sensitivity, as well as ethical and legal considerations, are thoroughly addressed. Within the broader REEVALUATE framework, strong emphasis is placed on ethical oversight (particularly regarding the use of AI technologies), responsible research practices, open science, and regulatory compliance.

Pilot 1 integrates ethical and legal concerns into its implementation through the following (non-exhaustive) measures:

- **Data Management Plan**: Pilot 1 contributes to a quarterly updated Data Management Plan, which outlines how research data will be collected, processed, stored, and preserved during and after the project. This plan adheres to the FAIR principles (Findable, Accessible, Interoperable, Reusable) and Good Governance guidelines for the use of data.
- **Visual and Data Consent**: All data collected and visuals created or used within Pilot 1 will either be anonymized (with no identifiable individuals) or will be used only with signed consent forms.
- **GDPR Compliance**: Pilot 1 follows GDPR guidelines and will conduct a compliance check prior to engaging REEVALUATE stakeholders.
- **Ethical Review of Instruments**: Consent forms, questionnaires/surveys, data sharing agreement, project information sheets, and other research instruments are currently being drafted and will be reviewed by ARTHUR to ensure alignment with ethical and legal standards.
- **Internal Audits**: The project coordinator will conduct internal audits focused on ethics and data protection to ensure ongoing compliance with project requirements.
- **Intellectual Property Rights**: Potential legal issues related to digitisation, such as third-party intellectual property rights, are considered during the selection of materials.
- **Gender Bias Awareness**: Pilot 1 acknowledges the presence of gender bias in digitised content and is prepared to explain the rationale behind this bias (see section 4.2.2.2).
- **Body Positivity and Inclusivity**: Pilot 1 promotes body positivity by making the cutting patterns of the Pattern Pilot available in a range of clothing sizes (from XS to XXL).

5.3 Timeline

This section outlines the planning and execution of Pilot 1. The timeline is based on the workflow of selecting, digitising, and developing the Pattern Pilot. The same cycle will be repeated two times, during the first and second pilot round and will be documented in two versions of this deliverable: D4.1, due in Month 22; D4.8, due in Month 29.

5.3.1 Preparation

Preparation activities are linked to two key project tasks:

- **T2.1 Cultural Items Identification & Digitisation (M6–M28)**
  For the first iteration, the focus was on developing a realistic test case to validate the REEVALUATE framework and its enablers. From Month 6 (June 2024) until the submission of this deliverable (October 2025, M22), MoMu's project coordinator and pattern maker worked

continuously on selecting the object and establishing digitisation workflows to generate the necessary digital assets for successful pilot execution. During the second iteration, this flow was repeated for 4 new assets to be featured in the pilot.

- **T4.1 Pilot Planning and Validation Methodology Definition (M13–M29)**
  As detailed in this deliverable, Pilot 1 partners collaboratively developed a comprehensive plan for managing and executing the pilot cases. This includes a detailed description of each pilot case, along with a list of actions to be undertaken before and during execution, specifying the required assets, enablers, and service.

Preparation of Pilot 1 is reported in deliverable D4.1 and D4.8.

5.3.2 Execution

Pilot execution is part of **T4.5 Pilot Execution – Implementation of the REEVALUATE Framework in CHIs (M21–M34)**. The goal of this task is to implement the REEVALUATE framework within the participating cultural heritage institutions and to coordinate the execution of the pilot cases. It encompasses three main activities:

- Continuous engagement of pilot users and stakeholders;
- Ongoing technical and domain-specific (cultural heritage) support;
- Continuous monitoring of progress toward pilot-specific objectives

The Pilot 1 lead organisation will be responsible for collecting data and KPIs in accordance with the planning defined in Task 4.1. The first iteration of Pilot 1 will span four months, from M23 to M26. A dedicated deliverable, **D4.5 Execution and Monitoring of REEVALUATE**, due in M2, reported on the execution of Pilot 1 during this iteration. A second release of this deliverable will report in M34.

5.3.3 Evaluation

Evaluation of Pilot 1 is part of **T4.6 Pilot Results Assessment and Evaluation (M23–M28)**. Following the first iteration, assessment and analysis activities will be conducted to evaluate the impact of the REEVALUATE framework on digitisation practices and the creative reuse of cultural heritage artefacts. This task involves analysing results from the pilot activities and the validation of REEVALUATE enablers to assess the overall framework, technologies, and functionalities implemented.
The outcomes of this evaluation will be documented in D4.6 Evaluation and Results of the 1st Pilot Round, a deliverable due in M30. A second version will report the evaluation of the 2nd Pilot iterations in M36.

5.4 Assets used

During the first iteration of the pilot execution (developing the Pilot 1 prototype), the Fashion and Gaming Pilot worked with the following asset from MoMu:

Table 6: Assets for Pilot 1

#1	Information
Object name	Dress (EN) – Jurk (NL) (keywords, linked to MoMu's multilingual thesaurus)
PID	http://data.momu.be/ark:34546/mn0318
Inventory number	ST2202
Provenance	Collection ModeMuseum Antwerpen – Study Collection
Date	Ca. 1925

Description	Evening dress in beige silk muslin covered with transparent grey and white sequins in a diagonal stripe pattern. Straight, loose fit, reaching approximately calf height, sleeveless. V-neckline at the front and back. The dress flares out at the front and back. The dress is unlined and has no closure. (EN) Avondjurk van beige zijden mousseline bezet met doorzichtig grijze en witte pailletten in diagonaal strepenmotief. Recht en wijd model tot op ongeveer kuithoogte, zonder mouwen. V-hals aan voor- en achterzijde. Aan de voor- en achterzijde loopt de jurk uit in een punt. De jurk is ongevoerd en zonder sluiting. (NL)
Material/technique	silk (EN) – zijde (NL) muslin (EN) – mousseline (NL) manmade material (EN) – kunststof (NL) sequin (EN) – pailletten (NL) bead (EN) – kraal (NL) embroidering (EN) – borduren (NL) (keywords, linked to MoMu's multilingual thesaurus)
Metadata Schema (artefact)	Metadata (in-house schema, based on Cidoc-CRM & Dublin Core)
Condition information	Fragile condition, not to be moved outside of box (translated from Dutch)
Measurements	height: 125 cm waist: 84 cm shoulder width: 34 cm (translated from Dutch)
Images	https://museumstichting.resourcespace.com/?r=92673&k=09a907abe0 (link for external users, generated by MoMu Digital Asset Management System: Resourcespace). More info: see also following section 'already digitised'
License	CC.BY (MoMu Collection - Photographer: Stany Dederen)
Location Data	ST2202 › Studiecollectie – container pnvxp › LZ.UNIT.40 › 2 - Leeszaal Bibliotheek › MoMu

As indicated in 5.2.2.2, after completion this first pilot iteration four additional objects from MoMu's collection were selected to be included during the second pilot iteration (cf. supra). For each of these four objects the same information is available. To keep this deliverable as concise as possible, this information is not repeated for the new selected artefacts and we use ST2202 as example.

The following section outlines the current digitisation status and includes two tables:

- **Pre-existing Digital Assets**: These are digital materials that were already available prior to the start of the REEVALUATE project, specifically digital photographs of object ST2202. The information in table : Assets for Pilot 17, also exactly applies to the four objects that will be used during the second iteration for the pattern pilot.

- **Newly Created or Planned Digital Assets**: In table 8 additional digital materials that have been or will be created to support the documentation and reuse of MoMu object ST2202 within Pilot 1 were presented. These assets are intended for integration into both the Gaming Pilot and the Pattern Pilot. For ST503, ST81114AB, ST81116, the status is similar to the object ST2202. With regard to ST80998, additional digitization needs to be executed (digital textures, 3D model, digital 2D pattern), before the asset can be integrated in the pilot. This will take place in M29-30 and as the second pilot iteration spreads from M30-34, this does not affect overall planning of the pilot execution.

Table 7: Already digitised assets for Pilot 1

ALREADY DIGITISED	
Types and number of existing digitised objects that will be included in the pilot use case	Image
File formats of the digitised objects	Tiff (for archival purposes) and Jpeg (in different renditions) for publication.
Is there a description of its corresponding physical item or additional content (either as an accompanying file or included within the object)?	Yes, metadata Object ST2202.
Types of metadata related to each digitised artefact that will be used in the pilot use case	Custom extended EXIF, XMP metadata. Managed in DAMS (ResourceSpace)
Estimate total size (in MB)	Tiff= 36MB; Best quality Jpeg= 3.6 MB
Intellectual property rights currently applied to the digitised objects, or intend to be applied in the future?	CC.BY (MoMu Collection - Photographer: Stany Dederen). Depicts ST2202, presumed out-of-copyright, no identifiable copyright holders.
Intended or planned sharing of digitised artefacts?	Photo can be publicly accessed via Study Collection website: http://data.momu.be/ark:34546/mn0318
Is data stored/processed on your own machines or externally (cloud, hoster)?	Stored in a DAMS (Resourcespace), Hosted by Montala (external partner)
Are your digitized artefacts and metadata externally accessible?	Yes
If digital objects are stored in external repositories, how does the pilot leader plan to provide access?	Both original and high-res Jpeg are accessible online: https://museumstichting.resourcespace.com/?r=92673&k=09a907abe0
Is the APIs publicity available?	Yes, via the IIIF manifest https://museumstichting.resourcespace.com/iiif/mmq52fp04/manifest

Are access rights handling specific to your institutions or can it be integrated into a wider Reevaluate "single sign on"? *(For example, by logging in with Google, Apple, Facebook or Microsoft credentials)*	No, Both Omeka-S and ResourceSpace require login credentials provided by MoMu. Publicly available assets don't require authentication.
Would you be (organisationally/legally) able to provide content access to the project (for the pilots) or should the information above be considered for conceptual use (i.e., architecture) only?	Yes

Table 8: To be digitised assets for Pilot 1

TO BE DIGITISED	
Number of new physical objects provided for the case study	In the context of Pilot 1, MoMu will take the following actions to create new digital assets to prepare its content to be included in the Fashion & Gaming Pilot. - 1. Create a contextual 'storyline' to enhance object information - 2. Create 2D (cutting) pattern - 3. Create 3D model
File formats for each type of digital object	1. Text file, added to customized class 'Context' (to be mapped in a later stage to a CIDOC-crm Class). 2. SVG (file to be further processed) / PDF (publication format of the pattern) 3. CLO3D => can be exported to many open formats for re-use on other platforms (OBJ, FBX,…). Export format to be defined with Pilot 1 developers.
Types of objects provided for the case study	text, image/document, 3D models.
Expected file type for the new digitised objects	See above (File Formats)
For each physical item intended for digitization in the pilot use case, is there a description (as an accompanying file)?	Yes, see #1 for (coupled) metadata.

Type of metadata needed to create for the new digital objects	Metadata for digitized assets is linked with metadata of #1 object. Digital assets will be stored in MoMu's DAMS for preservation. Possible additional metadata needs to be defined with Pilot developers. To be made available for consultation/download via Omeka-S.
Intellectual property rights intended to apply to the digitised artefacts	ST2202 is considered 'Out of copyright'. Since all assets are created in-house by own staff, digital assets can also be shared under an open license.

5.5 Enablers used

As was extensively written in Chapter 4, Pilot 1 will test the following REEVALUATE enablers:

- **Contextualization Enabler**: Enhances metadata associated with digitized artefacts through a collaborative process involving the general public, stakeholders, and experts from the fashion and creative industries. This process is supported by EFHA's extensive networks.
- **AI-Driven Creative Reuse Enabler**: Assists participants in the Gaming Pilot in generating new designs using generative AI, by creatively reusing digitized assets from MoMu's collection.
- **Collaboration Enabler**: Facilitates cooperation between Cultural Heritage Institutions (CHIs) and third parties interested in discovering and reusing digital cultural heritage assets. It enables the registration of digitized cultural heritage and provides a search and retrieval interface. Additionally, a matchmaking algorithm will be implemented to connect users with each other and with relevant assets.
- **DLT-Based Asset Tokenization & IPR Management Enabler**: Offers a secure solution for storing cultural heritage artefacts using Distributed Ledger Technology (DLT), and includes a smart contract mechanism to manage copyright agreements effectively.
- **Context Validation Enabler**: Ensures that digitized artefacts are not misused or taken out of context within the Gaming Pilot, by validating their appropriate use.

5.6 Stakeholders

Three core stakeholder groups have been identified so far for the pilots. These stakeholders are:

SME's (Creative & Cultural Industries)

- **Type:** Private Company / Self-employed
- **Expected Numbers:** 10
- **Detailed Involvement:** SME's will test & provide feedback regarding the Marketplace and its different enablers in a real-life scenario, re-using REEVALUATE content from Pilot 1 (game or pattern pilot)
- **Required Documents:** Stakeholder will use MoMu dataset. Agreements will be in place during second iteration (information sheet, consent form and data sharing agreement)
- **Potential Challenges:** Availability & Scheduling
- **Stakeholder status:** Proposed

CH professionals (e.g., curators, conservators, researchers)

- **Type:** Public Museum
- **Expected Numbers:** 20

- **Detailed Involvement:** Professionals will use the contextualization enabler to contribute their knowledge about digitized heritage objects and will provide feedback regarding this enabler.
- **Required Documents:** Stakeholder will use MoMu dataset. Agreements will be in place during second iteration (information sheet, consent form and data sharing agreement)
- **Potential Challenges:** No challenges foreseen. Both EFHA and MoMu have an active and large network of CHIs & Experts that can be engaged as stakeholder. Potentially a dedicated workshops by EFHA and/or MoMu can be organized during 2nd iteration, if needed.
- **Stakeholder status:** Proposed

Makers/Creatives/Citizens

- **Type:** Public Museum
- **Expected Numbers:** 20
- **Detailed Involvement:** Makers (individual re-users) will use the marketplace in a real-life scenario, to discover and re-use REEVALUATE Content.
- **Required Documents:** Stakeholder will use MoMu dataset. Agreements will be in place during second iteration (information sheet, consent form and data sharing agreement)
- **Potential Challenges:** No challenges foreseen. We have different monthly workshops with these stakeholders in our museum program where this stakeholder group is present, they will be easy to engage to contribute knowledge and re-use of REEVALUATE content via the enablers. Potentially workshops, dedicated to re-using the patterns from the Pattern pilot, can be organized during the 2nd iteration, if needed.
- **Stakeholder status:** Proposed

5.6.1 Forms and documents

During the second iteration of Pilot 1, all necessary forms and documents will be in place. These will be used when stakeholders will effectively engage with the REEVALUATE-framework and its enablers. Pilot 1 stakeholders will use the MoMu dataset and formal agreements (including consent forms, project information sheet and data sharing agreements) to be drafted before the Pilot's second implementation. Main tool for gathering qualitative feedback will be a (online) questionnaire (developed by the enabler developers) and a useability survey (developed by T4.6 leader GVAM). Workshops serve as key activities for engagement and data generation, particularly with the makers/creatives. Feedback and satisfaction surveys, social media metrics, and repository uploads are among the tools used to quantify interactions,

5.7 KPIs

5.7.1 List of KPIs

Table 9: KPI Table for Pilot 1

KPI	Verification/Measurement mechanism	Target results (numbers)	Priority (critical or not)	Can be automatized? How?	Other comments

Number of participants engaged in the collaborative contextualisation process	Participation will be measured via physical attendance or digital response.	50* = 10 SMEs (professionals); 20 CHIs (professionals); 20 Makers (sewers – individual reusers)	Critical	Yes, feedback will be collected through online questionnaire/ user surveys (digital forms)	Related to Task 4.6
Number of digitised artefacts stored in the repository and made accessible to the wider public	Repository will provide the quantitative measurement regarding the chosen and uploaded artefacts - files	5 museum objects from MoMu collection will be digitised in 3D and accurately documented (per object: digital photo, metadata, 2D pattern, (digital texture information, when available), 3D model) – additionally a dataset of ca. 1.800 study collection artefacts (metadata/images) was made available for the knowledge graph and ca. 25 openly licensed patterns were made available for the REEVALUATE repository.	Critical	Yes, via API CMS Study Collection website. During 1st iteration, upload to REEVALUATE repository will be done manually.	Related to Task 2.1
Number of collaborations established between CHIs and stakeholders related to creative reuse of artefacts	For the Pattern pilot: Participation will be measured via the number of users of the Creative Reuse Enabler (part of the Marketplace), interacting with this enabler in a real-life scenario and re-using MoMu's digital assets. In addition, the number of downloads of MoMu's digital artefacts offered through the Marketplace is also considered. **For the Gaming Pilot: TBD**	25 (Pattern pilot) ; 25 Game pilot	Critical	Yes, feedback will be collected through online questionnaire/ user surveys (digital forms)	Related to Task 4.6

Number of users of the mobile game developed	n/a	n/a	n/a	n/a	Related to task 4.6
Number of sewers adopting contextualized garment patterns	Will be measured using different indicators: -Number of sold patterns in museum shop; -Number of patterns sold on Fibre Mood website; -Number of images/videos of garments actually created shared by Fibre Mood social media network; - (Evt.) Participants to workshops dedicated to pattern re-use (in case of lagging numbers during 1st iteration).	50	Not critical	No, manually recorded per indicator. As it is a simple quantitative indicator, no need for automation.	Related to Task 4.6
Feedback and satisfaction surveys from participants and stakeholders involved in the pilot	Feedback and evaluation from participants and stakeholders will be quantitative measured via online questionnaires and digital forms	50 surveys (25 for the pattern pilot; 25 for the game pilot)	Critical	Yes, automated via online questionnaire/ feedback forms	Related to task 4.6
Social media engagements to the pilot	Number of likes and reactions on different social media posts / videos / blogs /… featuring the Pattern Pilot. Measured via different social media accounts of Pilot 1 partners: MoMu / Fibre Mood / EFHA / Game developer (e.g., via Instagram / Linkedin / Youtube / Facebook)	1.000	Not critical	No, manually recorded over different (social) media channels, on a dedicated spreadsheet and disseminated via report	Related to task 5.1

5.8 Risk Assessment and Management

Including worst case scenarios and corrective measures.

The categories used are:

- S = Severity
- O = Occurrence
- D = Detectability
- R = Recoverability

Scale 1- 10 (1 = least, 10 = most), aligned with D6.2.

Table 9: Risk Assessment Pilot 1

Risk Description	Corrective measures	S	O	D	R

Risk that collaboration and contextualization campaigns for Pilot 1 will not gather enough targeted stakeholders, failing to achieve the set KPIs.	There is a stakeholder table clearly identifying target groups. There are 2 stakeholder campaigns (iterations). If, during the 1st iteration, stakeholder participation is lower than anticipated, there always is 2nd full-scale pilot execution phase to fine tune the campaign. Option to set up dedicated workshops engaging Pilot 1 partners' large networks, to create an extra stimulus for participation and meet the KPIs.	**7**	**5**	**2**	**3**
Poor implementation of the game hinders the proper testing of the enablers and the related framework (TBD)	Adopt an agile development methodology that includes iterative testing and regular validation sessions.	**7**	**5**	**6**	**5**
Third parties Intellectual Property Rights have a negative impact on content selection, digitisation and re-use in Pilot 1.	In the selection process, risks regarding copyright are a crucial selection criterion. MoMu will only select artefacts that are considered 'safe' (e.g., a 18th century dress) or are 'low-risk' (e.g., a dress from the 1920's, without any logo, nametag, or any clearly identifiable copyright holders). MoMu will work with a backup-list of objects, in case (active) IPR-holders are identified in a later stage of the project, and using these objects becomes risky. The study collection is a large and qualitative dataset. If a larger dataset is needed, the museum collection of MoMu holds over 40.000 objects, and can serve as backup dataset.	**8**	**3**	**5**	**3**
Legal and ethical barriers prevent the optimal organisation of Pilot 1.	A comprehensive legal and ethical framework was developed early in the project, by Arthur, ensuring compliance with GDPR and other relevant European directives. The quarterly updated Data Management Plan guides safe data handling and sharing practices, identifies and anticipates potential risks and problems. If problems occur, expertise is available to deal with these issues in the REEVALUATE consortium.	**7**	**4**	**8**	**4**
Pilot partners related risks: under-performing, leaving the project, key personnel temporarily not available, ...	Flexible project management structure and GA allow quick shift of resources to alternative project beneficiaries and inclusion of new beneficiaries. Project consortium groups many competent partners with overlapping skill and project portfolios. When necessary; consortium partners are engaged with sufficient staff members, ensuring immediate substitution if needed.	8	3	1	6

5.9 Experiences from first pilot phase and changes to pilot plans

The main updates introduced in Deliverable D4.8, compared to the first release of the Pilot description and planning deliverable (D4.1), with respect to Pilot 1, are summarised below.

First, a more detailed and structured testing plan for the enablers has been developed. This section now provides more concrete information on the stakeholders involved in testing, specifying which stakeholder is responsible for testing each enabler, the objectives of the testing activities, the datasets to be used, and the monitoring approach. In particular, Key Performance Indicators (KPIs) have been defined to ensure that testing outcomes can be systematically tracked, evaluated, and reported.

For the Pattern Pilot, the modifications are more limited. In D4.1, the description of the Pattern Pilot was based on an artefact that is not included in the REEVALUATE framework (namely the Lucy jacket). In D4.8, this has been replaced by the artefact "Mildred", which is actually part of the REEVALUATE dataset. This change has enabled a more accurate and consistent description of the full workflow and

the reworking some sections, updating of some images. In addition, four further artefacts to be included in the Pattern Pilot are now explicitly identified. These artefacts, developed through collaboration between MoMu and Fibred Mood, will follow the same workflow approach.

In consultation with the Work Package 4 leader and the task leaders, it was concluded that the KPI "Number of copyright violations prevented through the use of the copyright manager enabler" was neither measurable nor meaningful. Measuring events that do not occur is inherently problematic, making this KPI impractical. Identifying a suitable alternative KPI also proved challenging; therefore, the original KPI was ultimately discarded.

Nevertheless, the related enabler (DLT-Based Asset Tokenization & IPR Management Enabler) will be thoroughly tested during the second pilot iteration. This will involve 15 transactions (including the use of smart contracts) carried out by re-users through the Marketplace, as well as the collection of 25 feedback and satisfaction surveys from participants and stakeholders involved in the pilot.

As outlined in Section 4.8 of Deliverable D4.5 (Execution and Monitoring of REEVALUATE – Release 1), the main lessons learned from the first iteration of Pilot 1 highlight the importance of testing the REEVALUATE framework as an integrated platform rather than as a collection of independent tools. While the individual enablers provide valuable functionalities, their effectiveness within cultural heritage workflows depends on seamless interaction across the full pipeline, including content ingestion, contextualisation, search, recommendation, creative reuse, context validation, and intellectual property rights (IPR) management. The initial testing phase demonstrated that further improvements in integration are required prior to broader validation with external users.

The iteration also highlighted the value of close coordination between cultural heritage partners and technical partners. A full-day face-to-face meeting in Turin was particularly useful for aligning expectations, clarifying dependencies between enablers and preparing integrated deployment within the pilots. This type of focused coordination should be maintained for the second iteration, especially around the Game Pilot and Marketplace integration.

From a stakeholder engagement perspective, the Pattern Pilot demonstrated that fashion heritage reuse can generate strong interest when presented through a concrete and accessible output. The success of the Mildred pattern suggests that makers, fashion professionals and wider audiences can be effectively engaged through practical reuse formats. However, direct testing of the platform requires clearer workflows, more mature interfaces and stronger preparation before external users are involved.

From a technical perspective, the first iteration showed the need for standardised reporting and issue-tracking mechanisms across all enablers and pilots. Shared pilot documents were useful for the first testing round, but bug tracking, usability reporting and feedback consolidation should be managed through more structured forms in the second iteration. This will improve comparability across testers and make it easier for developers to prioritise fixes.

Finally, the first iteration showed that the Game Pilot needs to be aligned closely with the overall pilot setup from the beginning of the second phase. This will allow the consortium to test the creative reuse scenarios that could not be addressed in the first iteration, including avatar-based interaction, AI-supported fashion design, contextual storytelling and the validation of reuse outputs. Despite the delays encountered, the first iteration produced a strong foundation for Pilot 1 by validating the

Pattern Pilot, generating public engagement evidence, testing the first version of the enablers and identifying the refinements needed for broader and more integrated validation in the second phase.

6 Pilot 2 – Olympic Games and Music

6.1 Introduction

Pilot Title: From Museums to Screens
Pilot Subtitle: Leveraging Digitized CH Artefacts for Creative and Sustainable Advertising
Partners involved: OLYMPIC MUSEUM, SPK, FFP

The pilot use case showcases the potential of the REEVALUATE framework addressing the challenges associated with the digitization of CH artefacts, and their exploitation for sustainable CH management addressing the Creative Industries and particularly Advertising. The pilot use case will involve the digitization of selected artefacts from both museums, including historical photographs, art pieces, and artefacts related to various cultures of the world and Olympic Games. The digitization process will involve the appropriate copyright tagging and acquisition to ensure that the artefacts' copyrights are managed effectively.

6.2 Pilot description

The Olympic Museum is planning an immersive exhibition on its premises in Thessaloniki, with the working title "The Olympic Experience", which visualizes and makes audible aspects of the Olympic Games from antiquity to today and provides the real-world setting for Pilot 2. The collaboration explores the multifaceted relationship between the Olympic Games and music, spanning from antiquity to contemporary times. A multisensory experience that will engage visitors to immerse themselves in the history, values, and cultural essence of the Olympic Games and the Olympic Movement, as sporting and cultural events that unite sports and music.

FFP will incorporate materials from this partnership, highlighting the potential of digitized heritage material in contemporary advertising practices, focusing on leveraging digitized cultural heritage (CH) artfacts for creative and sustainable advertising within the Creative Industries and Advertising sectors. Building on this material, FFP will produce an advertising film inspired by the five thematic units developed by the museums and the selected digitized artefacts. Some of these artefacts will be digitized by the REEVALUATE project.

There is also potential, where time and budget allow, to extend this narrative into a spatial, projection-based experience within the Museum. The POC pilot includes a series of interconnected activities, such as storytelling development, historical research, the compilation of an asset list for digitization, and the execution of the digitization process itself. The selected material encompasses historical photographs, musical pieces, and artefacts reflecting both diverse global cultures and the history of the Olympic Games but the main objective is to test the enablers and the marketplace. Additional activities involve metadata review and enrichment, as well as the production of a video, utilizing the digitized artefacts to support the overall narrative.

Beyond the committed film, the pilot hopes, resources permitting, to support a fuller immersive visitor experience. The pilot's purpose is to encourage museum visitors to immerse themselves into the

Olympic Games, so they better understand the history, the values and the ideas behind the Olympic Games and the Olympic Movement through a multisensory experience.

FFP's contribution is a proof-of-concept advertising film showing how digitised cultural heritage can be reused in advertising, presented within the Olympic Museum's showcase of Olympic history.If that immersive layer is realised, the film could be shown through projection in the Museum's galleries, adding an interactive dimension for visitors.



Figure 23: The Olympic Experience Units



Figure 24: Screenshot of the 3D model produced

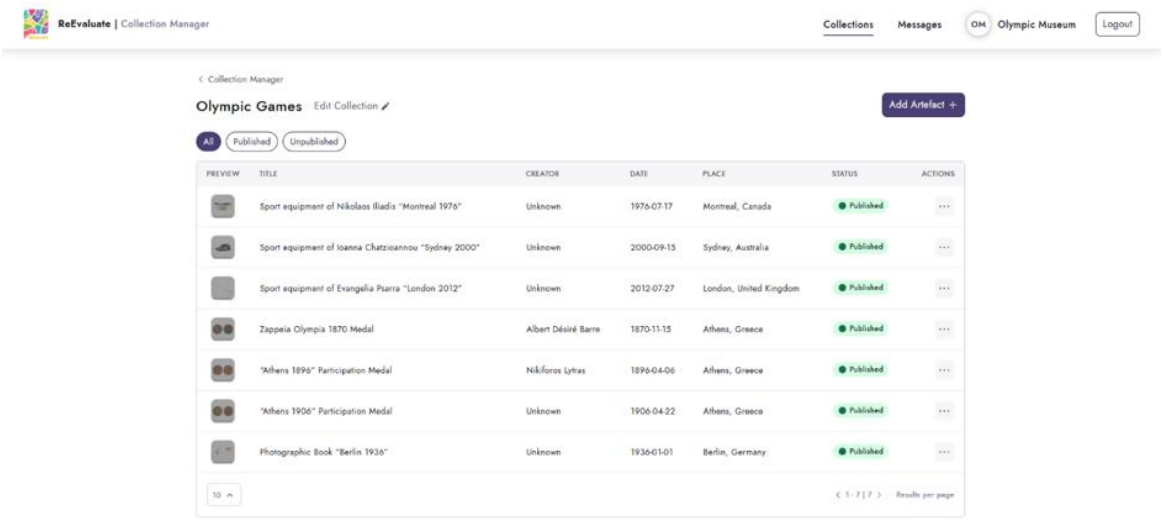


Figure 25: Marketplace integration, Olympic collection

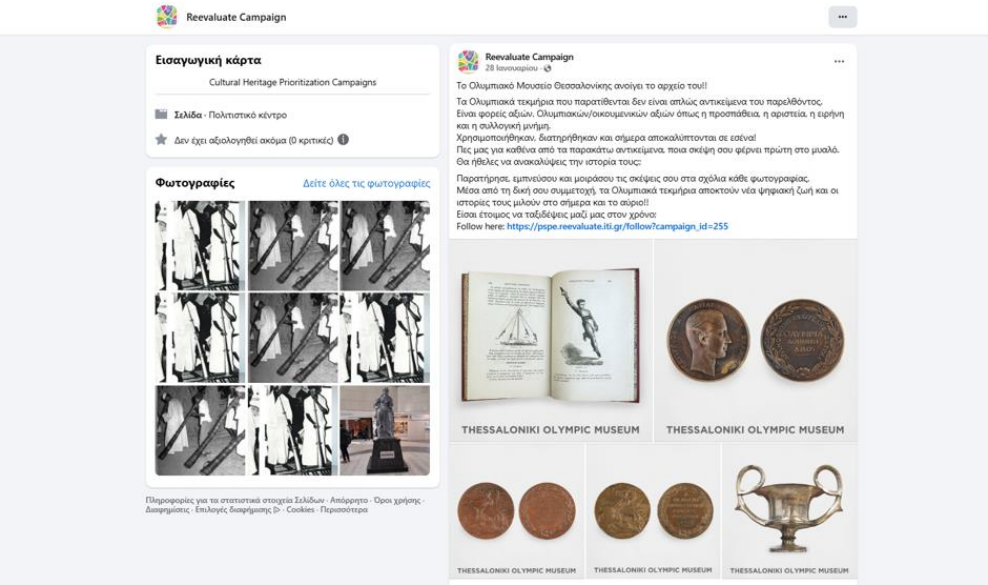


Figure 26: Public Sensing Prioritisation campaign

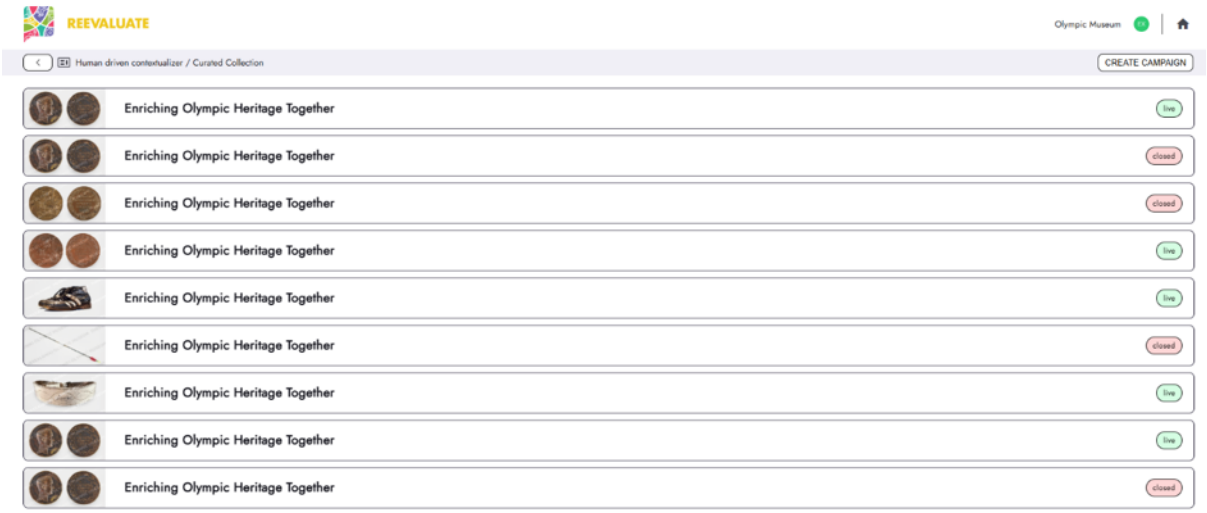


Figure 27: Human Driven Contextualisation campaign

6.3 Pilot scenario

The pilot project comprises of several interconnected activities that were conducted prior to the enabler tests, such as historical research, the development of storytelling concepts, the creation of scripts and musical concepts, and the development of a film script of *Olympia*. This resulted in a curated selection of digital assets that can be used in subsequent project phases. The necessary objects have now been digitized. The digitization process includes 3D scans as well as the systematic identification and documentation of copyrights to ensure effective rights management. In addition, the enablers involved are reviewing and enriching metadata.

A key component of the project is its participatory approach. Through prioritization campaigns, citizens were actively involved in the selection of artefacts. The public thus acts not only as an end user but also participates in the early stages of content development. This approach is further enhanced by measures for user-centered contextualization, which involve not only the general public but also experts—for example, from museum studies, archaeology, and history.

The five thematic units that follow have been developed by the Olympic Museum of Thessaloniki together with the Ethnological Museum of Berlin (SPK) and provide a rich curatorial narrative spanning antiquity to the present day. They give FFP a wide and well-researched body of material from which to select and adapt scenes for the proof-of-concept advertising film, ensuring that the demonstration of digitised cultural-heritage reuse is grounded in compelling and historically rigorous content.

6.3.1.1 UNIT 1: FROM DISCOVERY TO REVIVAL

The Rediscovery of Ancient Olympia

In 1766, the ancient sanctuary of Olympia was brought to scholarly attention by the English antiquarian Richard Chandler. Subsequent excavations revealed temples, altars, stadiums, and artistic treasures, providing unprecedented insight into the cultural and religious life of ancient Greece. This rediscovery marked the first step in reconnecting the modern world with the Olympic tradition and laid the foundation for the revival of the Games.

Objective: Introduce visitors to the rediscovery and evoke curiosity.

- **Visuals**: Panoramic shots of ruins being uncovered, archaeological drawings, maps showing Olympia's location, photos of the excavation, Card-postal
- **Audio**: Ambient sounds of excavation; soft narration introducing Richard Chandler and the rediscovery.
- **Narrative focus**: Emphasize that Olympia had been lost to time and the rediscovery reconnects the modern world with ancient Olympic heritage.

The Ancient Olympic Games

From 776 B.C. to 393 A.D., Olympia hosted the most significant sporting, cultural, and religious festival of the Greek world. Athletes, musicians, poets, and spectators converged to honour Zeus in an integrated celebration of body, mind, and spirit. Music was inseparable from the Games: it accompanied the rigorous two-month training of athletes, coordinated rhythm and movement during competitions, and celebrated victory through hymns and epinikia. The olive wreath (kotinos), taken from the sacred tree of Zeus, was the sole prize for champions, yet it conferred unparalleled prestige. Victors were immortalized through statues and civic honours, receiving lifelong privileges in their hometowns, while poets such as Pindar recorded their achievements, blending historical, mythological, and civic narratives into lyrical compositions performed with lyre or aulos.

Objective: Immerse visitors in **the** life, values, and multisensory experience of the Games.

- **Visuals**: Animated reconstructions of athletes training and competing, musicians playing lyre and aulos, spectators in ancient attire, significant figures, journey of the spondophoroi, Temple of Zeus in Ancient Olympia, Proclamation of the Sacred Truce
- **Audio**: Rhythm of music during training and contests, crowd reactions, narration describing Olympic rituals and events, victory songs (epinikia).
- **Narrative focus**: Athletic preparation and competitions. Role of music: coordinating movement, victory hymns (epinikia), presence of musicians. Victories: olive wreaths, statues, civic honours, and Pindar's victory odes. Ideals: excellence, honour, unity of sport and culture.

Romanticism and the European Revaluation of Ancient Greece

In the 19th century, European Romanticism fuelled renewed interest in classical antiquity. Artists, writers, musicians, and scholars sought inspiration in the ideals, aesthetics, and ethical principles of ancient Greece, perceiving it as a model of harmony, excellence, and civic virtue. The rediscovery of

Olympia exemplified the Romantic fascination with historical grandeur and provided a tangible link to a world that combined artistic, intellectual, and athletic achievement. Music and literature of the period frequently drew upon Greek mythology and philosophical thought to express universal human values, emphasizing the integration of culture, emotion, and education.

Objective: Connect rediscovery to **cultural** fascination and European Romantic thought.

- **Visuals**: Philhellenic Paintings, Paintings by Delacroix, ancient Greek statues, music sheets, Romantic-era Greek landscapes, paintings, Card-postal
- **Audio**: Classical Romantic music inspired by Greek mythology, narration explaining the European interest in Greek heritage.
- **Narrative focus**: How Romanticism influenced art, music, and intellectual life. Ancient Greece as the model of harmony, heroism, and cultural excellence. Europe wanted to see the grandeur of the past with its own eyes. Archaeology becomes a science. The first missions arrive in Greece. In 1875, a German mission begins the excavation of Ancient Olympia. They discover the site of the first Olympic Games. The world looks once again to Greece. Rediscovery of Olympia as the symbol linking the past to modern imagination.

Evangelis Zappas and the Revival of the Olympic Spirit

Evangelis Zappas, a Greek philanthropist and visionary residing in Romania, became instrumental in translating the Romantic admiration for Greece into concrete action. In 1859, he sponsored the first modern Olympiad in Athens, followed by subsequent Games in 1870, 1875, and 1889. The Zappas Olympiads sought to emulate the ancient Olympic ethos, combining athletic competition with music and cultural celebration. Participation was guided by ideals of honour, excellence, and fair competition (εὖ ἀγωνίζεσθαι), rather than financial reward. These Games, while exclusively Greek in character, demonstrated that the Olympic tradition could be revived, establishing a cultural and moral precedent that would later influence the international Olympic Movement.

Through the rediscovery of Olympia, the cultural and athletic achievements of antiquity were illuminated; through the Zappas Olympiads, these ideals were reactivated, bridging the gap between ancient tradition and the aspirations of the modern world.

Objective: Show how the Olympic spirit was revived.

- **Visuals**: Zappas Olympiads to early modern Olympic imagery, symbolic lighting effects evoking continuity, athletes competing, detailed shots from the opening ceremony, the distinction between amateur and professional athletes, the athletes' oath, medals, and anthems.
- **Audio**: Period-appropriate music, narration describing Zappas' vision, crowds cheering, ceremonial elements, Soutsos' poem, Triumphant music gradually merging ancient and modern motifs; narration highlighting enduring values.
- **Narrative focus**: Evangelis Zappas' role and vision. For the first time in history, the Zappeion Olympics introduced significant elements like the distinction between amateur and professional athletes, medals, diplomas, sports attire and opening and closing ceremonies. Games guided by ancient-Olympic ideals: honour, fair competition, integration of sport and culture. Significance for Greek national identity and as a precursor to modern Olympics. Inclusion of music alongside athletic events to emphasize cultural revival. Rediscovery → antiquity → revival → continuity. Although the Zappeion Olympics had a national character,

they became the starting point for the modern Olympic Idea and played a decisive role in the revival of the Olympic Games.

6.3.1.2 UNIT 2: THE FIRST MODERN OLYMPIC GAMES – THE REVIVAL & THE OLYMPIC SYMBOLS

The revival of the Olympic Games - 1st modern Olympic Games - Athens 1896: Pierre de Coubertin is regarded as the official reviver of the Olympic Games. His vision was not just to revive the institution, but to highlight the ancient Greek tradition of connection between art and sport, reflecting the principle of Olympic movement. The Olympic Games were therefore revived at the first Olympic Congress, organised by Baron Pierre de Coubertin and held at the Grand Amphitheatre at the Sorbonne University from 16 to 23 June 1894. Two thousand people attended, including 58 French delegates representing 24 sports organisations and clubs, and 20 delegates from Belgium, Great Britain, Greece, Ireland, Italy, Russia, Spain, Sweden and the United States representing 13 foreign sports federations. As the congress came to an end on 23 June, the Olympic Games were officially reborn and the International Olympic Committee created.
In 1906, Coubertin introduced the Pentathlon of Muses, a competition in sculpture, painting, music, literature, and architecture, but it wasn't until the 1912 Stockholm Games that arts competitions were officially held alongside sports and remained until 1948 London Games.

The revival of the Olympic Games, spearheaded by Pierre de Coubertin, reflects the deep connection between Romanticism and the ancient Greek tradition. Inspired by the values of ancient Greece, Coubertin believed that the rebirth of the Olympic Games could serve as a bridge for cultural and political reconciliation, promoting peace through sports. In 1896, the first modern Olympic Games were held in Athens, a poignant tribute to the country that gave birth to the institution.

Coubertin's Olympic ideal was based on three fundamental principles:

1. The moral dimension of sports – Athletics is not just physical exercise but a means of shaping character and values.
2. International brotherhood – The Games are not a battleground for nations but an opportunity for peaceful coexistence.
3. Amateurism – Sports should remain pure, free from commercial and material interests, as was the case in ancient Greece.

The phrase attributed to Coubertin, "The most important thing in the Olympic Games is not to win but to take part," perfectly encapsulates his philosophy, which draws its origins from the principles of ancient Greek athletics.

THE FIRST MODERN OLYMPIC GAMES

Objective: Introduce the historical revival of the Olympic Games, highlighting Pierre de Coubertin's and Dimitrios Vikelas vision and the first modern Games in Athens 1896.

The Olympic Revival – Paris 1894

- Visuals: Historical images or animated reconstructions of the Sorbonne Congress, delegates debating, maps showing participating countries, External shot of the Sorbonne building, decorated with flags from various countries, with the sunlight falling on it, Letter from the Panhellenic Gymnastic Association, from President Ioannis Fokianos to Vikelas, Coubertin and

Vikelas shaking hands, The delegates at the foyer Telegram from Vikelas to Ioannis Fokianos, President of the Panhellenic Gymnastic Association

- **Audio:** Ambient crowd murmurs, soft classical music, narration introducing Coubertin, excitement fills the room, applause breaks out
- **Narrative focus:** In the summer of 1894, the heart of Europe beats in Paris, at the historic Sorbonne. There, for the first time, people from around the world gather with the same passion and vision: to revive the ancient flame of the Olympic Games. History calls upon Dimitrios Vikelas, the Greek intellectual, to undertake a mission beyond the borders of his homeland. From the Panhellenic Gymnastic Association, with the signature of President Ioannis Fokianos, arrives the invitation – an invitation to participate in the conference that will decide the revival of the Olympic Games. Dimitrios Vikelas, with the calm and determination that characterized him, takes the floor. Without fear or doubt, he proposes the boldest step: that Athens, the city of the Olympic Games, once again become the center of the world for athletic harmony and the spirit of freedom. The partnership between Pierre de Coubertin and Dimitrios Vikelas becomes the force that connects the past with the future, the dream with reality. Humanity will forever have Athens, the birthplace of Olympism, as a symbol of global peace and excellence.

Athens 1896 – The First Modern Olympic Games

- **Visuals:** Animated reconstruction of Athens stadium, athletes preparing, spectators arriving, Artist's painting, sculpting, composing music; performances alongside athletic competitions.
- **Audio:** Crowd cheering, trumpets, rhythmic footsteps, narration describing the opening, Classical music, sounds of brushstrokes or sculpting, audience murmurs.
- **Narrative focus:** Highlight the three principles of Coubertin: moral dimension of sport, international brotherhood, and amateurism; first modern Games as a tribute to Greece. Show how Coubertin linked athletics with arts, inspired by ancient Greek ideals and Romanticism; demonstrate cultural integration.

Olympic Symbols: Olympic symbols are central to the identity and meaning of the Olympic Games, representing the values of excellence, friendship, and respect, and promoting the idea of a peaceful and united global community through sport.

1. The Opening Ceremony - Nations Parade

- **Visuals:** Parade of nations entering the stadium, flags waving, Greece entering first.
- **Audio:** Marching music, trumpets, cheering crowds, music from the opening ceremonies
- **Narrative focus:** The Opening Ceremony of the Olympic Games is a grand and symbolic event that marks the official beginning of the Games. It is a highly choreographed celebration filled with tradition, spectacle, and the Olympic values of unity, peace, and excellence. In the 1924 Paris Olympics we had the first modern Opening Ceremony. The event featured the first official parade of nations, athletes marching in order according to their country's names. Greece always gets into the stadium first, as an honour to the birthplace of the games. The Nations Parade during the Opening Ceremony of the Olympic Games is one of the most iconic moments of the event. It is a symbolic procession where athletes from all participating

countries march into the stadium, representing unity, peace, and global cooperation through sport.

2. The Olympic Rings:

- **Visuals:** Animated Olympic rings, vinted colors of the 5 circles
- **Audio:** Orchestral music, crackling flame
- **Narrative focus:** The five rings represent the five inhabited continents: Africa, the Americas, Asia, Europe, and Oceania. The interlocking of the rings symbolizes unity and the coming together of these continents in peaceful competition. The colours were chosen because every nation in the world could find at least one of these colours in their flag.

3. The Olympic Flame:

- **Visuals:** Torch lighting, relay across continents, torch relay forming symbolic shapes
- **Audio:** Orchestral music, crackling flame
- **Narrative focus:** The flame symbolizes the unity of the people, the pursuit of excellence, and sends the message of the Olympics ideals. The torch relay, which brings the flame from Olympia to the host city, represents the passing of Olympic values from one generation to the next.

4. The Olympic Motto – Flag – Anthem and Oath:

- **Visuals:** Athletes in motion, flag raising, anthem performance, athlete taking oath with official.
- **Audio:** Anthem music, ceremonial drums, narration emphasizing solemnity and ethics.
- **Narrative focus:** The motto represents the aspiration of the Olympic athletes to push their physical and mental limits, aiming for excellence in sport. It encourages athletes to strive for personal improvement and achieve their best.
- **Narrative focus:** The flag symbolizes the unity of the five continents and the global nature of the Olympic Games. It is flown during the Games and in Olympic venues around the world.
- **Narrative focus:** It is a symbol of the unity and peace that the Olympic Games aim to promote. The anthem represents the ideals of Olympism and is performed whenever the Olympic flag is raised.
- **Narrative focus:** The oath represents fair play, integrity, and respect for the Olympic values. It emphasizes the importance of ethics and sportsmanship in the Games.

6.3.1.3 UNIT 3: THE MESOLYMPIC GAMES "ATHENS 1906"

As a result of including the organization of the Olympic Games "PARIS 1900" and "SENT LOUIS 1904" during the period of International Exhibitions, the future of the Olympic Games was uncertain, as the popularity and the numbers of athletes and spectators were rapidly decreasing. The limited success of the two Olympic Games concerned the Greek athletic spirit. On the 10th anniversary of the revival of the modern Olympic Games (1896-1906), Greece claimed and undertook the organization of the "International Olympic Games" of 1906, which became known in history as the "Mesolympic Games", as they were held in between the scheduled Olympic Games of 1904 and 1908. The "International Olympic Games" were held from April 22nd to May 2nd, 1906, following the template of the flawless

"ATHENS 1896". The scent of success of the 1896 Olympic Games created a new atmosphere of euphoria among foreign athletes and visitors, but especially among Greeks.
The final decision for Greece to organize the Olympic Games for the second time in modern era was taken in 1904 and the whole 1905 was devoted to the preparation of the Games. Athens, the city that hosted the 1906 Games, had changed a lot compared to Athens in 1896. It had been modernized and specially designed to welcome this great sporting event, with the main streets having been paved and lit by electricity, and the Athens-Piraeus railway and trams having been electrified. Especially for the Games, the city was decorated with flowers, colourful lamps, flags, blazons of all nations and signs in all languages. For the first time in the history of the modern Olympic Games, athletes participated through the National Olympic Delegations in teams, parading in the Panathenaic Stadium under the flag of their country, a ritual that was repeated in the following Olympic Games ''LONDON 1908''. Especially for Greece, that moment was particularly moving, since the Greek Olympic delegation includes Greek athletes for regions beyond the frontiers, as Crete, Macedonia, Cyprus and Smyrna.
The Mesolympic Games was attended by 903 athletes, coming from 21 countries and, according to newspapers of the time, around 20,000 visitors arrived in Athens. The opening of the Games took place at the Panathenaic Stadium, in the presence of King George I, King Edward of Great Britain and 75,000 spectators, almost all Athenians. The foreign athletes stayed in the Zappeion Hall, the first Olympic Village in the history of the Games. With great enthusiasm and following the great success of Spyros Louis, winner of the marathon race of the 1st Modern Olympic Games ''Athens 1896'', the spectators hoped again for a Greek winner. However, the 1st place was deservedly won by the Canadian William Sherring. In the poster, which was released after the Games, Spyros Louis congratulates William Sherring, while the goddess Nike raises two kotinoi, wreaths of sacred olive branches, signifying the victory of the two Olympic Winners. Regarding the results of the 1906 Games, Greece's expectations for the performance of its athletes were confirmed with 7 first, 17 second and 15 third places, even though medals for the first and second place were only awarded. Furthermore, apart from medals, finest cups crafted by remarkable sculptors, such as Greek sculptor Georgios Demetriades, also were given as prizes to athletes in many sports during the Mesolympic Games of 1906.

The success of the Olympic Games is usually connected to the number and the performance of the athletes, the number of visitors and distinguished people who travel to watch the Games, the operation of the sports facilities and the overall organizational structure. Therefore, from every point of view, the 1906 Games were organized in an exemplary way by Greece and were a complete success, giving new impetus to the Olympic movement and contributing to the enhancement of the Olympic Games' prestige.

THE MESOLYMPIC GAMES "ATHENS 1906"

Objective: Showcase the Mesolympic Games' achievements, organization, and significance in reviving the Olympic spirit.

- **Visuals:** Athens cityscape in 1905, construction of stadiums, decorated streets, electrified trams, flags, Panathenaic Stadium filled with spectators and athletes, royal guests in attendance, Canadian William Sherring winning the marathon; Greek athletes performing well

in multiple disciplines, Medals, cups as awards, wreaths (kotinoi), poster showing Spyros Louis congratulating Sherring, card postal, newspapers.

- **Audio:** Sounds of construction, bustling city, tram bells, soft celebratory music, rhythmic sounds of running and competition, narration of notable winners and achievements, audience applause, uplifting orchestral music summarizing the success.
- **Narrative focus:** Highlight Athens' modernization and meticulous preparation to host the "International Olympic Games" successfully, building excitement and national pride. Present the historical significance of national delegations and the emotional impact for Greek athletes representing regions beyond modern Greece. Highlight performances, athlete diversity, and moments of fair play, illustrate Greek hopes and international participation. Emphasize the symbolism of awards, continuity with ancient traditions, and cultural artistry integrated into the Games. Show how the exemplary organization, athlete participation, and public enthusiasm restored prestige to the Olympic Games and strengthened the Olympic Movement.

6.3.1.4 UNIT 4: OLYMPIC VALUES THROUGH SPORTS & MUSIC

Sports, music, and rhythm are intricately woven together, with the equipment in each sport playing a key role in shaping the pace, movement, and atmosphere. Just as music is composed of beats and tempo, the rhythmic sound of sports equipment in action provides a natural soundtrack for the game. As the equipment used in various sports often influences the timing, flow, and energy of the game, much like how music sets the tempo of a performance. The equipment used in sports not only serves a functional purpose but also contributes to the musicality and rhythm that elevate the athletic experience. For example, the rhythmic sound of a basketball bouncing on the court or the swift crack of a tennis racket hitting a ball creates a dynamic beat that mirrors the pulse of the game.

Sports, music, and rhythm are deeply interconnected, transforming athletic movement into dynamic and artistic performances. The rhythm of sport extends beyond the body itself, shaped also by the equipment athletes use. From the controlled timing of a golf swing to the rapid beat of a sprint, equipment adds its own cadence, influencing both pace and precision. In individual sports, the sounds produced by equipment—whether the crack of a racket, the thud of a ball, or the swish of a ski—intensify the rhythm of performance, heightening both the athlete's focus and the spectator's experience. In team sports, music often plays a unifying role, fostering synchronization, coordination, and collective energy, turning play into a shared rhythmic experience. Yet rhythm in sports is not always marked by sound. Silence itself can become a powerful element, building anticipation, heightening emotion, and shaping the rhythm of competition through pauses and moments of stillness. Together, movement, equipment, sound, music, and silence create a layered rhythm that defines the emotional and artistic dimension of sport.

1. Interaction Between Sports, Music, and Rhythm:

This category explores the fusion of sports with music and rhythm, which elevates the overall athletic experience. Music and rhythm don't just add an auditory layer to sports—they shape the flow of movement, turning physical actions into expressive, almost artistic performances. This synergy enhances the visual appeal and emotional depth of the sport, as athletes move in time with the beat or rhythm of the event.

The integration of rhythm in sports (whether from equipment, natural movement, or music) turns athletic performance into more than just competition—it becomes a dynamic, artistic expression that draws both emotional and aesthetic connections from the audience.

Objective: Emphasize how sports equipment acts as both functional tools and sources of rhythm and sound.

- **Visuals:** Slow-motion of athletes moving in harmony with rhythmic beats; overlays of musical notes blending into athletes' movements.
- **Audio:** Layered beats, combining natural sport sounds with musical rhythm (e.g., basketball dribble merges with drumbeat).

2. Role of Equipment in Sports (materiality and sounds):

The equipment in sports not only serves a practical function but also contributes to the rhythm of the game. For example, in golf, the precise timing and swing rhythm required to strike the ball with accuracy creates a sense of pacing, while in sprinting, the rhythmic pounding of feet on the track sets a fast, intense tempo. Equipment influences the flow of the game and dictates the timing of movements, helping to synchronize an athlete's actions with the rhythm of the sport.
In this category, sports equipment functions like a metronome or musical instrument, producing sounds or guiding movements that create a sense of rhythm. Whether it's the sound of a bat hitting a ball or the quickness of a swimmer's stroke, the equipment becomes integral to the sport's rhythm.

Objective: Emphasize how sports equipment acts as both functional tools and sources of rhythm and sound.

- **Visuals:** Close-ups of equipment in use—golf swings, sprinting shoes striking the track, tennis rackets hitting balls.
- **Audio:** Clear, sharp equipment sounds (crack of a bat, thud of a ball, rhythmic footfalls).

3. Individual Sports and the Sounds of Equipment:

In individual sports, the sounds of the equipment become an essential part of the experience. In fencing, the clash of swords produces a sharp, rhythmic sound that matches the intensity of the contest. In cycling, the whir of the wheels and the clicking of the gears contribute to a mechanical rhythm, while in boxing, the sound of punches landing and the rhythmic movement of the boxers create an auditory pulse that matches the speed and power of the fight. In wrestling or tae-kwon-do, the sounds of bodies colliding and the strikes echoing across the arena provide a rhythm that both athletes and spectators can feel.
The sounds produced by the equipment in these individual sports add an auditory dimension to the experience, providing a rhythm that enhances the athleticism and emotional intensity. The equipment is both a tool for performance and a source of rhythm that shapes the flow of the sport.

Objective: Highlight how the auditory dimension of equipment enhances intensity and rhythm in solo competitions.

- **Visuals**: Fencers clashing swords, cyclists in motion, boxers exchanging strikes, wrestlers grappling.
- **Audio**: Metallic clinks of swords, whirring wheels, rhythmic punches, echoing body collisions.

4. Team Sports and Communication Through Music (cooperation, respect to my co-athlete. co-musician, the role and importance of the team, the respect to rules):

In team sports, such as rhythmic gymnastics or synchronized swimming, music is a central element that helps coordinate and synchronize the athletes' movements. The athletes are not only working

together to achieve a common goal but are also moving in harmony with the beat of the music. This synchronization requires precise timing, and the rhythm of the music helps establish a common pace for all participants. The rhythm becomes a means of communication, allowing athletes to instinctively respond to each other's movements, fostering cooperation and unity.
Music in team sports functions as a rhythm that connects athletes, helping them to cooperate and communicate non-verbally. The shared rhythm unites the team, turning their movements into a synchronized performance that combines athletic skill with artistic expression.
Objective: Show music as a unifying rhythm that enables cooperation, respect, and synchronicity in team events.

- **Visuals:** Synchronized swimming, rhythmic gymnastics, rowing crews moving in harmony, team huddles before play.
- **Audio:** Coordinated beats, team chants, music syncing movements, cheering.

5. Silent Moments in Sports and Emotional Soundscapes:

Not every moment in sports is filled with sound from the equipment or music. Silent moments—like a tense pause before a critical shot or a still moment during a race—can be just as thrilling as the most action-packed sequences. These silent moments are often charged with emotion, as the athletes prepare for a pivotal action or moment of decision. Even without sound, the intensity, anticipation, and emotional stakes are palpable, creating an invisible rhythm that builds suspense. The emotional energy of these moments can often feel like an unspoken beat or pulse that resonates with the audience.
Silence, in its own way, contributes to the emotional rhythm of the sport. These moments heighten tension and draw the audience deeper into the experience, allowing the emotions of the athletes and the spectators to fill the void. The emotional undercurrent becomes an integral part of the rhythm, even without an auditory cue.

Objective: Demonstrate how silence builds anticipation and adds emotional rhythm to sport.

- **Visuals:** A sprinter before the start, a tennis player preparing to serve, the breath of a weightlifter before the lift.
- **Audio:** Silence, amplified heartbeats, deep breaths, followed by sudden eruption of sound at the moment of action.

Olympic Values: The Olympic values are core principles that underpin the Olympic movement and guide athletes, officials, and spectators throughout the Olympic Games. These values promote the positive aspects of sport and foster a spirit of peace, unity, and respect. The three main Olympic values are: Respect, Excellence and Friendship. These three core values are integral to the Olympic philosophy and serve as a guide for athletes and all involved in the Games, encouraging them to uphold these ideals in their personal and professional lives. They form the foundation of Olympism, a philosophy that seeks to promote peace, understanding, and personal growth through sport. Together, these values form the essence of Olympism—sport as a path to peace, unity, and human progress.

Objective: Convey the three core Olympic values—Excellence, Friendship, and Respect—as the ethical foundation of the Games, inspiring athletes and audiences alike.

- **Visuals**:
  Excellence: Athlete's training, breaking limits, crossing finish lines.
  Friendship: Competitors embracing, exchanging flags, celebrating together.
  Respect: Handshakes, bows, gestures of sportsmanship, caring for the environment.
- **Audio**: Orchestral and uplifting music, with shifts in tone for each value—intense for Excellence, warm for Friendship, calm and steady for Respect.
- **Narrative focus:**
  Excellence: Striving to give your best and grow beyond limits.
  Friendship: Building bonds across cultures and borders.
  Respect: Honouring yourself, others, and the rules of the game.

6.3.1.5 UNIT 5: INTERNATIONAL OLYMPIC DAY - A GLOBAL MOVEMENT

OLYMPIC DAY RUN - A WORLDWIDE CELEBRATION

The cultural events that take place during the interval of the Olympic Games are an important aspect of the modern Olympic tradition. Although the Games have their primary focus on sports, cultural activities incorporate the spirit of unity among nations and promote culture, art, and creativity, enhancing the experience of the Olympic Games on a global level.

It was in 1947 during the 41st Session of the International Olympic Committee in Stockholm, that Doctor Gruss, IOC member in Czechoslovakia, presented a report on a World Olympic Day celebration which would primarily be a day of promoting the Olympic idea. The first Olympic Day was celebrated on 23 June 1948. Olympic Day is not just a date on the calendar, but a universal celebration of humanity's shared aspirations. Each year on June 23, the world comes together to honor the birth of the modern Olympic Movement and to reaffirm the timeless values that lie at its heart: excellence, friendship, and respect. It is a day that transcends borders and generations, inviting people everywhere to discover the joy of movement and the unifying spirit of the Games. Olympic Day is a global celebration of sport and getting active. It takes place on 23 June each year to commemorate the day the International Olympic Committee was founded in 1894 - the birth of the modern Olympic Games. With more than 200 countries of the world participating in the celebration and more than 40,000,000 participations per year, the International Olympic Day is the largest mass participation sports event in the world and makes the heart of the planet ... beat with Greek rhythms.

The Olympic Day Run can be considered as the core activity of Olympic Day. First launched in 1987, it has been organized by NOCs to celebrate Olympic Day and promote the practice of mass sport. From 45 participating NOCs in the first edition in 1987, the numbers have grown to more than 150 participating NOCs. At the center of this global celebration stands the Olympic Day Run, an open invitation for everyone — regardless of age, background, or ability — to participate in a simple yet powerful act: running together. It is not a competition but a collective journey, a symbol of health, inclusion, and solidarity. In every stride, participants affirm that sport is a language all can speak, a bridge that connects communities across continents. For a few kilometers, the world runs as one.

In Greece, the Olympic Day Run resonates with a unique depth. Held in the land where the Olympic ideal was born, it is more than a sporting event; it is a living dialogue between past and present. Ancient heritage meets modern celebration, and the ideals that first inspired the Games are reawakened in today's society. By opening its streets to runners of every age, Greece transforms the Olympic Day Run into a festival of unity, joy, and collective identity.

Since 2018 and every year, the "Olympic Day Run" GREECE, the only Olympic Running Race in Greece is organized. Olympic and Paralympic medalists, as well as representatives of the international and

Greek Olympic institutions join the supreme running event with top runners and active citizens of the world, to raise Greece even higher on the global Olympic and sporting map. The Thessaloniki Olympic Museum - founding member of the World Network of Olympic Museums and official body for the promotion of the global Olympic heritage and Olympism as a philosophy and way of life - is the responsible body for the planning and implementation of the celebration in Greece, as well as the headquarters of the mega sport event / Olympic running Race.

The purpose of this unit is to immerse visitors in the spirit of Olympic Day, enabling them to feel part of a worldwide celebration of unity, health, and hope. The space is designed not only to inform but also to inspire, inviting the public to personally connect with the values of the Olympic Movement. Visitors leave with the understanding that Olympic Day is not merely an anniversary but a living tradition that demonstrates the power of sport to bring people together across cultures and generations. By highlighting the Olympic Day Run as a symbolic act of inclusion, this unit encourages reflection on how simple actions — such as running side by side — can express solidarity, foster friendship, and create bonds that transcend boundaries.

Objective: Present the creation of Olympic Day, its purpose, and its global reach as a unifying celebration of sport and humanity. Highlight the Olympic Day Run as the core expression of Olympic Day, emphasizing both its global impact and its special resonance in Greece, birthplace of the Olympic ideal.

- **Visuals:** Archival photographs, Maps highlighting participation worldwide, with crowds running in different continents, global scenes of Olympic Day Runs across cities and landscapes, diverse participants: children, elderly, Olympic and Paralympic athletes, families, streets in Greece filled with runners celebrating Olympic Day through Olympic Day Run Greece, blending images of ancient heritage and modern festivity.
- **Audio:** Warm, uplifting orchestral score building gradually to global scale, Soundscape of cheering, rhythmic footsteps, and voices in different languages, happiness of participation, pulse of running teams, rhythmic pulse of footsteps forming a collective beat, layered with cheers and applause.

6.3.2 Pilot site

Pilot 2 is hosted at the Olympic Museum in Thessaloniki, where the Museum is developing a physical, immersive exhibition. FFP's committed REEVALUATE output is the proof-of-concept advertising film, produced for and shown within this setting. Designed for visitors of all ages and backgrounds, the exhibition will invite audiences from around the world to step into the history of the Olympic Games and experience its enduring legacy in an innovative and interactive way. The exhibition will guide visitors on a journey through the defining moments of the Olympic Movement — from its ancient roots to its modern revival, and from the triumphs of legendary athletes to the values of peace, respect, and excellence that lie at its core, immersing the audience in the atmosphere of different eras and milestones. This multisensory approach will not only showcase the energy, emotion, and pulse of the Games, but will also highlight their unique role as a cultural and athletic celebration that unites humanity.Central to the pilot is FFP's proof-of-concept advertising film, which narrates the rich history of the Olympic Games through significant and internationally recognized artefacts and demonstrates the potential of digitised cultural heritage in the creative and advertising industries.The film leverages the digitized material to highlight innovative and sustainable uses of cultural heritage assets. Where developed, the film may also appear as a projected installation in the exhibition spaces.

The team would pursue such an immersive treatment only after the film is complete and if capacity remains. A further, conditional possibility (developed by SPK) is a Berlin exhibition satellite, which situates the topic of Pilot 2, sport and music, project within an urban, transnational cultural context and extends the pilot site into a mobile, distributed format, enabling the REEVALUATE framework to be tested and experienced beyond Thessaloniki in diverse public and institutional environments.

6.3.3 Pilot personnel

The Olympic Museum of Thessaloniki has selected and provide artefacts from its rich collections for digitization, ensuring that the most significant symbols of Olympic history are represented. The museum's curators and historians will actively contribute to the collaborative contextualization of the digitized artefacts, working with citizens to co-create narratives that connect historical objects to contemporary values and lived experiences. They use their expertise in Olympic history to provide essential insights and interpretations that anchor the exhibition in authenticity and credibility. Additionally, they will ensure that the copyright manager enabler is applied appropriately to manage the copyrights of the digitised artefacts. Beyond content, the Olympic Museum will also act as the physical stage, orchestrating the immersive design of the five rooms and shaping how visitors engage with the Olympic legacy in a dynamic, participatory manner.

The ethnomusicological department of the Ethnologisches Museum (SPK) provides a selection of digitized assets related to music and sports from its collections, will suggest a storyboard for a chapter for the planned immersive production on music in the Olympic games. SPK will also participate in the testing of enablers (public sensing prioritization enabler, AI driven contextualization enabler (text, image, audio), collaboration enabler, context validation enabler, DLT-based asset tokenisation & IPR management enabler).

FFP will produce an advertising film inspired by the five thematic units developed by the museums and the selected digitized artefacts. Building on the film, and where resources permit, the partners may develop the narrative further into an immersive exhibition format, using projection-based media, spatial storytelling and, where appropriate, 3D technologies.

6.3.4 Pilot methodology

As specified in the KPIs, visitor attendance, on-site feedback and the impact of the exhibition will be measured through wider indicators of engagement and dissemination. Participant interaction and feedback will be evaluated via social media activity, campaigns, online questionnaires, and forms, as well as through responses to press releases and newsletters. These channels provide insight into the resonance of the exhibition beyond the physical museum space. Collaboration agreements and documented partnership reports will serve as evidence of institutional impact and the strengthening of networks around the exhibition. Feedback and evaluation will be gathered not only from visitors but also from participants and stakeholders, using both online and face-to-face surveys. The dissemination process will be further assessed by monitoring media coverage, including press mentions, press releases, and newsletters.

Taken together, these measures—visitor numbers, social media engagement, partnerships, stakeholder feedback, and media presence—provide a multidimensional picture of the enablers' success in a realistic workflow of two CHI. They ensure that its impact is understood not merely in terms of attendance, but also in its cultural reach, public engagement, and contribution to the international dialogue on the Olympic heritage.

The project is intentionally designed to expand its scope in order to increase outreach, systematically collect feedback, diagnose evolving user needs, and identify emerging stakeholder groups—not only

through analysis but through real-world testing and engagement. The resulting insights will be actively fed back into the continuous development of new services, use cases, and future project iterations.

6.3.5 Ethical and legal requirements

Ethical and legal considerations are addressed iteratively across all project phases, continuously discussed and re-negotiated. Alongside the technical and curatorial development, template contractual frameworks are prepared. However, usage scenarios are highly diverse and depend on the needs of different stakeholder groups. These scenarios are further specified, documented, and decision-making processes are made transparent.

Pilot 2 will implement the same measures to address the legal concerns as Pilot 1, namely:

- **Data Management Plan**: Pilot 2 contributes to a quarterly updated Data Management Plan, which outlines how research data will be collected, processed, stored, and preserved during and after the project. This plan adheres to the FAIR principles (Findable, Accessible, Interoperable, Reusable) and Good Governance guidelines for the use of data.
- **Visual and Data Consent**: All data collected and visuals created or used within Pilot 2 will either be anonymized (with no identifiable individuals) or will be used only with signed consent forms.
- **GDPR Compliance**: Pilot 2 follows GDPR guidelines and will conduct a compliance check prior to engaging REEVALUATE stakeholders.
- **Ethical Review of Instruments**: Consent forms, questionnaires/surveys, data sharing agreement, project information sheets, and other research instruments are currently being drafted and will be reviewed by ARTHUR to ensure alignment with ethical and legal standards.
- **Internal Audits**: The project coordinator will conduct internal audits focused on ethics and data protection to ensure ongoing compliance with project requirements.
- **Intellectual Property Rights**: Potential legal issues related to digitisation, such as third-party intellectual property rights, are considered during the selection of materials.
- **Gender Bias Awareness**: Pilot 2 acknowledges the presence of gender bias in digitised content and is prepared to explain the rationale behind this bias.

6.4 Timeline

6.4.1 Preparation

- January 2025 Beginning of T4.1
- March 2025 Beginning of T4.3
- May 2025 Pilot Planning Document begins
- June 2025 Madrid Consortium Meeting
- July 2025 Review Meeting Brussels
- May 2026 End of Task 4.1

6.4.2 Execution

- October 2025 Beginning of T4.5 Pilot execution – Implementation of the REEVALUATE framework in the CHIs
- December 2025 I Iteration 1 (M24-M28 until April 2026)
- July 2026 Iteration 2 (M30-M34 until December 2026)
- November 2026 Immersive exhibition

Iterations

First Iteration (M24–M28)

During the first iteration, the enablers were tested for the first time within Pilot 2. The process of learning and familiarizing with the enablers took longer than originally anticipated. At the same time, conceptual and content-related preparations continued, including in-depth historical research, the development of storytelling approaches, script and music concepts, as well as the curatorial selection of relevant assets. In parallel, the objects were digitized, metadata was reviewed and enriched, and initial tests of the enablers were conducted with regard to data integration, rights management, and potential usage scenarios. Additionally, the first participatory formats — such as workshops and interviews — were carried out in order to involve the public in selection and contextualization processes. Over the course of this initial project phase, several new interest groups and stakeholders were identified. These included, for example, dancers, musicians, and representatives of the film industry who are specifically searching for historical and previously lesser-known musical sources.

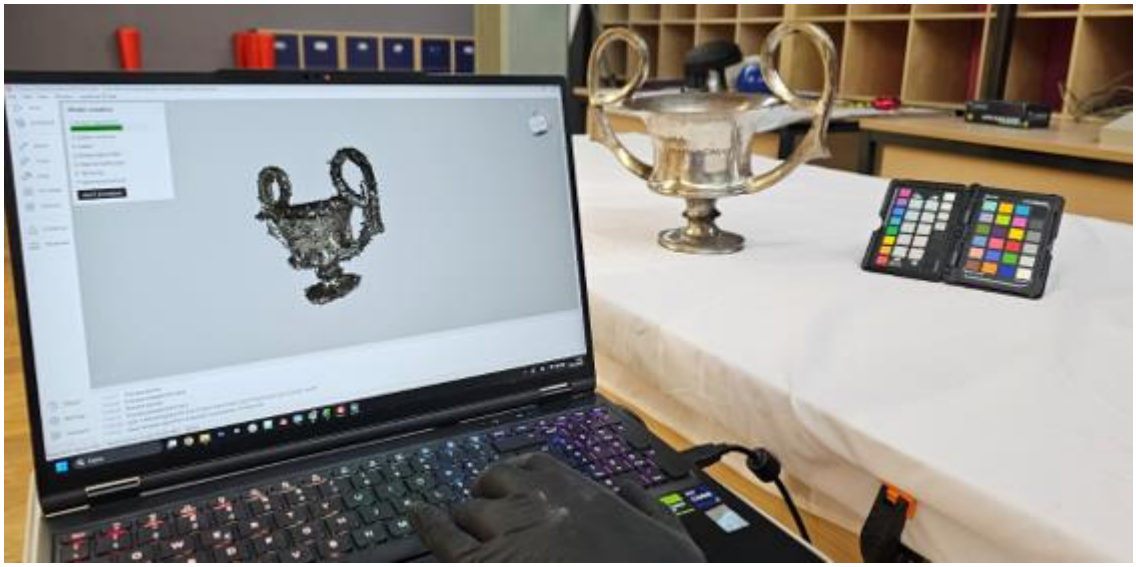


Figure 28: Image during the digitisation process, provided by 3DR

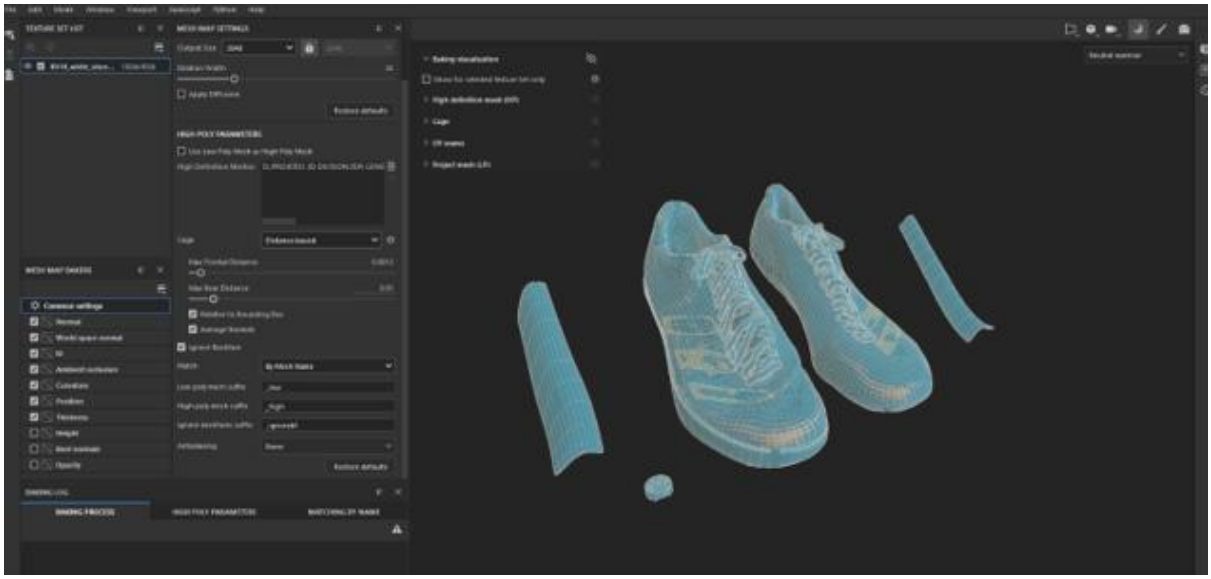


Figure 29: . Image from 3D objects processing, provided by 3DR

During the first iteration, engagement activities targeted both external and internal stakeholders, with a stronger emphasis on the latter. On the external side, audiences from diverse cultural backgrounds were invited to participate in the prioritisation process, contributing to the selection of artefacts to be digitised. This approach aimed to capture public interest and ensure that the selected content reflected broader audience preferences. Internally, the focus was placed on exploring the enablers and assessing their applicability within Pilot 2. To support this process, internal users were gradually introduced to the tools, allowing them to become familiar with their functionalities and workflows. At the same time, experts from the Cultural Heritage Institution (CHI), including museologists, archaeologists, and historians, played a key role in the initial integration of the Human-Driven Contextualisation Enabler by providing specialised knowledge and validating content related to the artefacts.

The first iteration of Pilot 2 provided useful insights that will support a more effective implementation in the next phase. From a stakeholder engagement perspective, the pilot showed that participatory activities can successfully attract user interest. However, interaction was mainly limited to simple actions (e.g. likes), indicating the need for more targeted approaches to encourage richer contributions. In addition, broader outreach through multiple communication channels could further increase participation. Regarding technical deployment, some delays on the enablers led to a stronger focus on internal testing and familiarisation. While this reduced the time available for external engagement, it allowed partners to better understand the tools and identify areas for improvement. In terms of enabler performance, some functional limitations were identified, particularly in relation to data collection and content management. These insights provide a clear direction for further refinement and optimisation.

Second Iteration (M30-M34)

Thematically, we focus on "Music and Sport" and bring this topic to various screens and formats within the museums, with the proof-of-concept advertising film as the committed output and any further immersive or promotional material only where resources allow. Within this context, the partners test the enablers in the field of the creative industries and explores film production based on our digitized assets. FFP's advertising film demonstrates the potential of digitised cultural heritage for media

production and advertising, shown within the Olympic Museum's exhibition "The Olympic Experience" (opening planned November 2026). Any projection-based presentation in the Museum's galleries depends on this further material being produced.

6.4.3 Evaluation

- December 2026 - End of the REEVALUATE funded projected phase

6.5 Assets used

Olympic has made a selection of objects in their collection to be used in Pilot 2.

The objects selected for Pilot 2 from the Olympic Museum are artefacts from the main collection of the Olympic Museum of Thessaloniki, which comprises more than 10,000 exhibits of exceptional historical, cultural, and sentimental value. The selection was carefully curated to offer a representative overview of the Olympic Movement, presenting its history, ideals, evolution, and impact through a diverse range of objects. By highlighting different aspects of Olympism, sport, memory, and heritage, the selected artefacts aim to create a meaningful connection between the audience and the legacy of the Olympic Games. The selected assets were 26 of which a couple will be chosen for the POC (including historical documents, medals, cups, sport equipment and uniforms) and were used both for the enablers integration, the digitisation process and the video production.SPK has made a selection of 18 audio piece from the archive that:

- use instrument types used in the ancient Olympic Games (flutes, trumpets, lyres, trumpets, percussion)
- relate to the assets selected by the Olympic Museum
- are ethically and legally sourced and easy to clear for an exhibition in Thessaloniki and
- are well-documented

SPK created several collections with assets, such as "Music and Sport" in Reevaluate’s Marketplace. The main collection comprises 20 objects and reflects different media from the analogue era, such as wax cylinders, to digital formats. The assets have a curated connection between music, musical instruments and Olympia, movement and sports. This selections form the basis for the collaboration with the Olympic Museum. Additional collections have been developed: The "Trumpet Collection" connects instruments and audio sources within a thematic context; the "Marathon Collection" is based on field recordings, soundscapes, and visual material created during the project; and the "Horo Collection" broadens the perspective to include related performative and social aspects of music and dance practices.

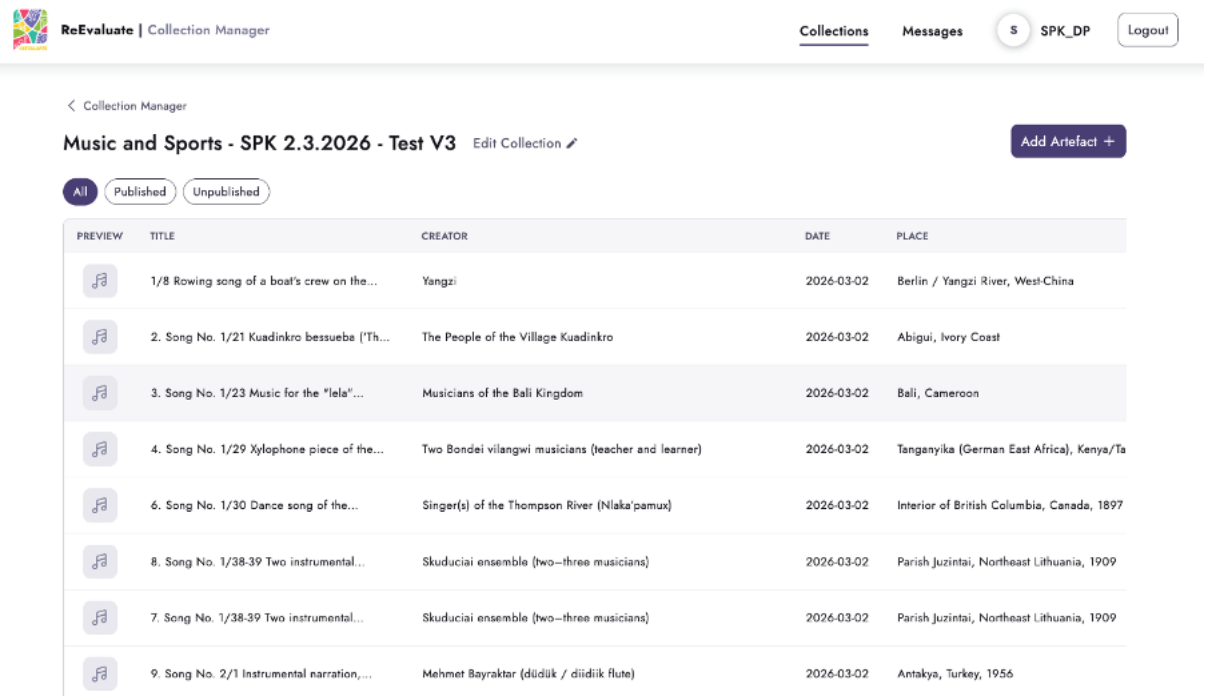


Figure 30 : SPK Music assets in REEVALUATE's marketplace

Depending on the material, different and often complex trade-offs arise. The SPK has prepared typical case examples for testing, which must be repeatedly recontextualised. The concrete use of assets depends on ethical considerations, the specific cultural context, and the intended use scenarios.
A particular focus lies on handling sensitive material, which are available in large quantities in SPK's holdings. Responsible use remains an ongoing challenge that cannot be definitively resolved, but instead requires continuous reflection, negotiation, and adaptation.

6.6 Enablers used

In its activities, Pilot 2 will test the following REEVALUATE enablers:

- the Public Sensing Prioritization Enabler: Use social media to involve public in the making of the exhibition, including marginalized groups

Olympic Museum in the process of testing the Public Sensing Prioritization Enabler and with a final purpose to engage audiences to identify through a number of artefacts which are the most recognizable and of primary interest to the general public, ran gamified campaigns on social media. More specifically, diverse groups had the opportunity to learn the history behind important artefacts of our collection and be a vivid part of the selection process of the list of artefacts to be digitized. The main idea for the external participants inclusion was to understand their level of interest in these artefacts, in order to guide their inclusion into the pilot case. Public participation was encouraged through interactions such as likes and comments on Facebook, which were then analysed. The objects selected for the campaign are artefacts from the main collection of the Olympic Museum of Thessaloniki, providing a general overview of the Olympic Movement and highlighting its various aspects. The 26 artefacts were grouped in 4 publications (sports equipment, medals, documents etc) that were presented with an image and a descriptive text narrating its history background. Also, through the questions that was a part of the campaign structure, the users were engaged and

encouraged to give qualitative feedback, going beyond a simple "like" voting mechanism. User interactions (likes and comments) were tracked and processed through the Prioritization Enabler itself. The platform aggregated the collected data and performed sentiment analysis on the feedback, providing structured outputs for the evaluation of the campaign.

- the Contextualization Enabler used to enrich metadata available for artefacts and to support the making of the exhibition; i.e., we use the contextualization enabler mostly as a tool for the curators and researchers involved in the exhibition design.

The main objective of the Human Driven Contextualisation Campaign was to enhance and expand the information linked to the artefacts by collecting additional historical and contextual data. In contrast to the previous campaign, which actively involved external audiences, this initial phase primarily engaged internal users. Specifically, experts from its Cultural Heritage Institution (CHI), including museologists, archaeologists, and historians, were invited to play a key role to the enabler first internal integration. They were progressively introduced to the tool in order to assess both its technical performance and conceptual integration, while simultaneously contributing their specialized knowledge to enrich the artefacts.

- Collaboration Enabler: make digitized artefacts available to FFP and others for creative reuse
- Context Validation Enabler: will be employed to test the use of the assets in the context of the planned immersive exhibition
- IPR management Enabler: ensures compliance with copyright while using assets for productions in Pilot 2

Marketplace: Served as a central component of the pilot, acting as the main application through which digitized artefacts are managed and made accessible to the various enablers of the platform. As a first essential step, it was necessary to ensure that digitized assets of Pilot 2 were properly uploaded and integrated into the system, so that they could be discovered and further utilized within the broader ecosystem, the Reevaluate platform.

Table 10: Enablers used in Pilot 2

Enabler	Deployment status	Usage in pilot	Issues / Adaptations
Public Sensing Prioritization app	Implemented and used during the first phase of the pilot.	Used to engage public through gamified campaigns in the prioritisation of artefacts to be digitized.	The enabler has multiple problems that have not yet been addressed: Cannot play audio/video; restricted to Facebook; results are difficult to interpret; campaigns are difficult to edit;
Human Driven Contextualisation	Operational internal use during the first phase of the pilot.	Used to gather input from CHI's experts (internal), thereby enriching the knowledge base regarding the artefacts.	Inflexible/intransparent workflows and user interfaces, e.g. during retrieval/search, problematic category systems
Marketplace	Implemented and used during the first phase of the pilot.	Used to generate collections based on CHI's artefacts and made the digitized	User interface does not fit some common screen sizes.

		artefacts accessible to the various enablers of the platform.	
Context Validation	Will be implemented during/for the video production	The enabler (integrated through marketplace) will be used to check and validate that the digitized artefacts have not been misused or used out of context with the video developed	Currently, warnings seem to appear with nearly all assets regardless of actual issues.
Collaboration Enabler	Will be implemented by FFP to create the video	Through the collaboration enabler (integrated through marketplace) the contextualized digitized artefacts will be made available for creative reuse by FFP, which will develop a video	
IPR Manager	Will be implemented during/for the video production	The enabler (integrated through marketplace) will be used to ensure that the appropriate copyright agreements are in place before the creative reuse of the artefacts, preventing any out of context or misure of the digitized artefacts	

6.7 Stakeholders

In this section we describe parties that potentially have an interest in using the REEVALUATE framework in relation to pilot 2. Typically, this interest resolves around re-using of digital assets used by the pilot.

We group the stakeholders in four categories:

(1) Inside CHI

Today, many specialists with a range of different specialization are involved in the design of exhibitions. Many of them inside have an interest in the Reevaluation framework. These are CHI curators, exhibition designers, graphic designers, museum educators, advertisers and public relations specialists inside the institution.

(2) Education

Teachers, researchers and publishing houses working in this area have an interest in using the Reevaluate framework in order to obtain resources and the appropriate licensing, including teachers, researchers and publishing houses representing source communities.

(3) Journalism, Musicians and Artists, advertising

Journalists, musicians, artists, advertising specialists may have an interest in discovering CH objects with high quality contextual information and to acquire licensing rights for assets to use them in their respective products (texts, music, art, advertising).

(4) General Public

The General public may have an interest in the assets and contextual information and the services provided by the REEVALUATE framework for example if information provided by the Pilot 2 can be

used in Wikipedia for general information. The general public may also include people from communities where the objects represented originate from.
During the iterative test phases of the pilot, additional target groups and stakeholders became clearly visible. These include, in particular, transnational communities shaped by migration, traditional musicians and dancers searching for lesser-known historical sources, as well as cultural associations abroad that act as intermediaries for knowledge transfer and cultural continuity. Furthermore, actors from the creative industries and younger audiences—especially those engaged through participatory formats—have emerged as key stakeholders.
These findings underline the strong exploitation and impact potential of the REEVALUATE framework. The identification of new and previously under-represented user groups demonstrates clear pathways for reuse across sectors such as education, creative industries, cultural tourism and transnational community work. At the same time, it highlights the need for flexible licensing models, scalable access infrastructures and user-centred services that can respond to diverse and evolving demands.
Consequently, stakeholder engagement is not only a dissemination activity but a core component of the framework's long-term sustainability. By addressing dynamic, context-dependent and transnational user needs, REEVALUATE positions Cultural Heritage Institutions as active hubs within a distributed European ecosystem of knowledge, creative production and digital asset reuse.

During the first iteration, engagement activities targeted both external and internal stakeholders, with a stronger emphasis on the latter.
On the external side, audiences from diverse cultural backgrounds were invited to participate in the prioritisation process, contributing to the selection of artefacts to be digitised. This approach aimed to capture public interest and ensure that the selected content reflected broader audience preferences.
Internally, the focus was placed on exploring the enablers and assessing their applicability within Pilot 2. To support this process, internal users were gradually introduced to the tools, allowing them to become familiar with their functionalities and workflows. At the same time, experts from the Cultural Heritage Institution (CHI), including museologists, archaeologists, and historians, played a key role in the initial integration of the Human-Driven Contextualisation Enabler by providing specialised knowledge and validating content related to the artefacts.

In parallel, internal stakeholders followed testing guidelines co-developed with the technical partners and engaged in continuous feedback exchanges with developers, contributing to the identification of usability issues and areas for improvement.

6.8 KPIs

Table 11: KPI Table for Pilot 2 in various phases (Snapshots)

KPI / Objective	Target	Snapshot 1	Snapshot 2	Snapshot 3
Number of participants engaged in the collaborative contextualisation and prioritization process	50	-	OLY: 72 participants on prioritization process; SPK: 2 participants	OLY: 3 CHI experts on contextualisation process; SPK: 10 participants

Number of digitised artefacts stored in the repository and made accessible to the wider public	12 artefacts Olympic) + 20 assets (SPK)	OLY:At least 12 digitilized artefacts SPK:20 assets in collection Music and Sports	SPK: 5 assets (Trumpet Collection)	+ 8 assets (Marathon, Horo collection)
Number of collaborations established between CHIs and stakeholders related to creative reuse of Artefacts	12	SPK: 2 curators	SPK: 2 external curators	SPK: 15 workshop participants; 2 media artists, 1 researcher; 2 filmmakers; 3 dancers
Number of copyright violations prevented through the use of the copyright manager enabler	1	-	-	-
Feedback and satisfaction surveys from participants and stakeholders involved in the pilot	20	SPK: 3 surveys	SPK:2 surveys	SPK:2 surveys
Number of media mentions and press coverage of the pilot	10 (the main dissemination process that will includes media mentions, press releases and newsletters, focuses on the exhibition – video production promotion)	-	OLY: 4 social media mentions / posts	OLY: Participation of the Olympic Museum in the 1st International Conference on Cultural Prescription of the Ministry of Culture
Increase in revenue or funding secured by CHIs as a result of increased engagement with stakeholders and promotion of digitised artefacts	+3%	-	-	OLY: Number of users-visitors of the upcoming immersive exhibition

Table 12: KPI Table for Pilot 2

KPI	Verification/Measurement mechanism	Target results (numbers)	Priority (critical or not)	Can be automatized? How?	Other comments
Number of participants engaged in the	Participant's engagement – feedback would be measured via interaction and	50 participants (Olympic)	Not critical	Partially – via automated registration	Related to task 4.6

collaborative contextualisation and prioritization process	attendance on social media posts, campaigns, online questionnaires and forms, press releases and newsletters.			forms and attendance tracking tools	
Number of digitised artefacts stored in the repository and made accessible to the wider public	Repository will provide the quantitative measurement regarding the chosen and uploaded artefacts - files	at least 12 artefacts Olympic) + 20 assets (SPK)	Not critical	May be tracked via the repository's backend system	Related to task 4.6
Number of collaborations established between CHIs and stakeholders related to creative reuse of Artefacts	Collaboration agreements or documented partnership reports	12 (open call for video-graphers)	Not critical	No – requires manual tracking and documentation	Related to task 4.6
Number of copyright violations prevented through the use of the copyright manager enabler	An enabler could be used showing flagged or blocked usage due to copyright violations The exact measurement will be defined later in conversation with relevant enabler creator.	1			
Feedback and satisfaction surveys from participants and stakeholders involved in the pilot	Feedback and evaluation from participants and stakeholders will be quantitative measured via online and face-to-face surveys.	20	Not critical	Yes – automated survey tools can collect and analyze data	Related to task 4.6
Number of media mentions and press coverage of the pilot	The dissemination process includes media mentions, press releases and newsletters.	10 mentions	Not critical	Maybe manual	
Increase in revenue or funding secured by CHIs as a result of increased engagement with stakeholders and promotion of digitised artefacts	Number of users-visitors of the immersive exhibition	+3%	Not critical		

6.9 Risks

Including worst case scenarios and corrective measures.

Risk Description	Corrective measures	S	O	D	R

Public sensing prioritisation enabler does not receive enough input or does yield not coherent input.	We revise the concept and repeat the public facing campaign	2	7	10	9
Contextualization enabler does not yield usable results	We will try to structure the enabler's output better in another iteration.	5	5	5	5
Unethical use of assets or without proper license.	We will check the used assets manually/conventionally	7	5	8	10
It's possible that we don't reach all stakeholders	Increase dissemination activities	4	4	8	8
Reused material is not attributed correctly.	Involve legal department of asset-holding institution	8	5	5	5

- S = Severity
- O = Occurrence
- D = Detectability
- R = Recoverability

Scale 1- 10 (1 = least, 10 = most), aligned with D6.2

6.10 Deviation from Proposal

Presentation in a Museum Setting and Potential Additional Material.

FFP's committed contribution to Pilot 2, as foreseen in the Grant Agreement, is the production of one proof-of-concept advertising film. The film demonstrates how digitized cultural-heritage assets drawn from the REEVALUATE marketplace, across the collections of the participating museums, can be selected and integrated into a compelling audiovisual narrative. It is developed with reference to the Olympic Museum's planned immersive exhibition and its five thematic rooms, as outlined by the Museum, which provide the real-world context for the demonstration.

As a proof of concept, the film is intended to illustrate this creative possibility rather than to deliver a fully specified production. A film realised to a detailed, partner-defined storyline, with the associated creative direction and successive rounds of revision, would represent a more extensive undertaking beyond the scope of the proof of concept, and could be considered as a subsequent step should additional resources become available.

The further elements outlined in this section (presentation within an immersive exhibition setting, additional thematic videos, and a possible Berlin satellite) are potential enhancements, enabled by partner in-kind contributions and by efficiencies in AI-assisted production. They will be pursued only if person-months can be reallocated or if production proves faster than planned, and cannot be guaranteed at this stage, as production of the proof-of-concept film has not yet begun.Originally, REEVALUATE only proposed the creation of an advertising video as part of the Pilot 2. In order to test the REEVALUATE platform in a more practical setting. We now want to test the enablers in a more realistic museum environment. Hence, the Olympic Museum is setting up an immersive exhibition that provides a realistic setting in which to test the enablers, and FFP produces its proof-of-concept film within that context. The Olympic Museum provides the exhibition space, projection equipment and other services in addition to the REEVALUATE project funds. Originally, Pilot 2 foresaw the production of an advertising video to demonstrate how digitised cultural heritage assets can be reused in creative industries and promotional contexts. Building on this objective, and making the best possible use of

the available project resources once the POC is completed, the pilot might even be tested in a more realistic museum environment through an immersive exhibition at the Olympic Museum of Thessaloniki.
This expanded output does not alter the core objective of the pilot; rather, it strengthens it by allowing the REEVALUATE enablers to be tested across a broader and more practical range of museum, storytelling and promotional applications. Recent advances in AI-assisted video creation make it possible to produce this additional material within the available resources. Any such expanded output would not change the core objective of the pilot but strengthen it, by testing the enablers across a wider range of practical uses.

Berlin Exhibition Satellite

Based on the experiences from the first pilot phase, there are considerations of extending the project activities to add a mobile Berlin exhibition satellite developed by SPK, intended as a scalable real-world demonstrator to enhance validation, broaden outreach, and enable end-to-end testing of curatorial and technical workflows of the REEVALUATE framework with diverse audiences beyond the original pilot site, while also informing and feeding forward into Iteration 4—as a new use case example—and into future exhibitions and projects through continued experimentation with participatory formats and next-generation user groups. This activity is not a direct part of the pilot plans, but will, if it can be arranged, provide additional dissemination value and feed back information into the validation process.

6.11 Experiences from first pilot phase and changes to pilot plans

Based on the experiences and findings from the first pilot phase, several adjustments were made to the original pilot plan. The first iteration demonstrated that the onboarding and practical testing of the enablers required more time than initially anticipated. As a result, additional time was allocated during Iteration 1 to ensure sufficient testing, evaluation, and integration of the technologies into the pilot workflows.
At the same time, a larger number of enablers than originally planned could be tested within the pilot activities. This broadened the scope of experimentation and allowed the consortium to evaluate the enablers in a wider range of practical and creative use cases, particularly in relation to data integration, rights management, storytelling, and media production workflows.
Another development was the expansion of the identified stakeholder and user groups. Through workshops, interviews, and participatory activities, the pilot attracted interest beyond the originally defined museum and heritage audiences. New potential users and stakeholders were identified, including dancers, musicians, filmmakers, and actors from the creative industries seeking access to historical and lesser-known cultural and musical sources. This development highlighted the broader relevance and reuse potential of the digitized cultural heritage assets.
In response to these findings, the Olympic Museum's immersive exhibition "The Olympic Experience" provides the real-world setting for testing, with a possible Berlin satellite (SPK) extending outreach. FFP's committed contribution remains the proof-of-concept advertising film.In parallel, the Berlin satellite activities strengthen the international visibility of the pilot and create additional opportunities for collaboration with cultural and creative industry stakeholders.
These adaptations reflect both the practical experiences gained during the first pilot phase and the growing recognition of the pilot’s relevance for wider cultural, educational, and creative-sector applications.

7 Pilot 3 - Historic Location of Aquileia

7.1 Introduction

This pilot case aims to showcase the potential of the REEVALUATE framework in **empowering a small community** with strong connections and bonds to the CH, **to take an active role in the management of their CH digitization**. Moreover, the appropriate contextual use of the CH artefacts will be validated, again, reflecting the identity of the community and history-enthusiastic people. The final result will be a virtual tour.



Figure 31:Aquileia aerial picture

7.2 Pilot description

7.2.1 Pilot scenario

This pilot case involves Fondazione Aquileia and 3DR for its implementation, while LINKS supports the community engagement activity.

The pilot use case is designed in order to involve the digitisation of a selection of artefacts and sites from the ancient city of Aquileia, which includes building and CH artefacts. These sites and artefacts are closely related to the local community that has been continuously inhabiting the area since 180/181 BC. The young citizens of Aquileia (students) are called to participate in the selection of the assets to be digitised through the Public Sensing Prioritization Enabler.

After the digitisation by 3DR, the community is called again to collaboratively provide the context for the selected assets, using the Contextualisation Enabler. This community, composed of archaeologists, archaeology students, historians, or people with passion for history, is asked to collect the relevant contextual information for the items digitised, including dating, use of the item, historical data, eventual symbology explained (in the case of the mosaic floors).

The pilot is thus conceiving a double stakeholder inclusion, considering as Aquileia's community not only the students and citizens living in the area, but also as historians, archaeology students, and history enthusiasts with expertise in the field.

All the collected inputs will lead to the realisation of a **virtual tour** by 3DR.

The tour is based on Titus Macer’s Domus (archaeological area). The premises of the Domus could be virtually reproduced to allow an immersive visiting experience:

- To raise awareness of both **local population and tourists** on one of the most extended Domus of north Italy;
- To provide a tool to **schools** for better understanding the archaeological heritage in an innovative and engaging way.

Some possible implementation ideas related to the fruition of the virtual tour:

- Immersive visiting experience using **smartphones/tablets**. Access will be possible via **link/QR code**;
- Interactive visiting experience accessible through a dedicated **web link**, available on **PC** or **personal devices**, enabling users to explore the virtual tour also from home.

Lastly, the produced virtual tour is assessed for appropriate use of context through the Context Validator.



Figure 32: Aquileia interior

7.2.1.1 Important historical clues & references about Aquileia Cultural Heritage

One of the most significant reference about Aquileia's cultural heritage, and more precisely to the strategic role it had from a commercial point of view -to which could be linked the Titus Macer's House, that is the object of the digitization process thanks to the REEVALUATE project- is the ancient text of Strabo.

Around the same era of the building of the domus, according to Strabo the geographer Aquileia was a big emporium: the terminal of the Mediterranean maritime trades and a redistribution hub serving the Danube and the Balkans drawing wealth and well-being from this favourable position.

Titus Macer's name is carved on a stone weight discovered during excavations by the University of Padua in the back of the house: T. MACR, i.e., T(iti) Macr(i), "Titus Macer's". Using the same method applied in Pompeii, the house discovered in the Cossàr Estates is thus called "Titus Macer's house". Unfortunately, the name of the family name (gens) between the praenomen Titus and the cognomen Macer is missing. We can only assume that Titus Macer was a wealthy merchant who could afford to buy two adjacent properties to create a 1,500 square meters new house.

"Aquileia, then, which is the closest to the bottom of the gulf, is the foundation of the fortified against the barbarians of the region above, and is reachable by cargo ships, which go up the Natisone river to more than sixty stadiums. It served as an emporium for the Illyrian peoples of the Istro basin; they buy goods from the sea: wine, which they load into barrels on covered wagons, and oil, and export slaves,

cattle and skins. Aquileia is located outside the territory of the Eneti, from whom it is separated by a river that descends from the Alps and is navigable for twelve hundred stadia in direction of the city of Noreia, near which Gneo Carbone clashed unsuccessfully with the Cimbri. In this area there are located, in a happy natural position, construction sites where you can gold washing and iron industries" (Strabo - 5,1, 8 C214)

Today, school tourism represents an important slice of visitors, in the spring period: for this reason, Aquileia institutions are beginning to develop a dedicated educational offer, with the aim of facilitating the visit and use of the heritage. Starting from the 2024/2025 school year, an educational department ("EducA") shared between the Aquileia Foundation and the National Archaeological Museum of Aquileia has been activated for the first time. The establishment of this department has made it possible to begin to present the numerous sites of archaeological and cultural interest within a unified proposal, which at the moment, however, is lacking in terms of tools that can be made available for the understanding and learning of students, as well as for the creation of customized and engaging visual experiences.

Currently, several projects related to the theme of accessibility have been launched (such as an ad hoc visit path within the National Archaeological Museum for people with cognitive disabilities; paper activity book for children; theatrical visits for primary school student), but there are no digital supports that allow interactive learning, as well as access to additional information on the heritage under study and that encourage discovery through scientifically validated information and documentation.

6.2.1.2 The Titus Macer Domus: description of the selected area

The "Titus Macer's House", one of the largest dwellings of Roman times among those found in northern Italy, covers an area of 1,500 square meters and is unique in Europe. The dwelling extends for about 77 metres in length and 25 in width, between two paved streets of the city (kardines) within one of the southern blocks of the colony, founded in 181 B.C., from which come the famous mosaic of the kidnapping of Europe, the beautiful floor with vine shoot with bow and the 'unswept floor', now on display at the National Archaeological Museum, and the mosaic of the Good Shepherd, provisionally located in Palazzo Meizlik.

The residence was partially investigated in the 1950s and, between 2009 and 2015, it was the object of excavations carried out by the Department of Cultural Heritage of the University of Padua, in agreement with the Aquileia Foundation and under the concession of MiBACT, under the direction of Prof. Francesca Ghedini and Prof. Jacopo Bonetto. The excavations have made it possible to recognise, in particular, the plan of the domus, built in the first century B.C. and lived continuously until the sixth century A.D. and to propose its attribution to Titus Macer, a wealthy inhabitant of Aquileia, based on the discovery of a stone weight with an iron handle with the inscription T.MACR.

The activity carried out by the University of Padua has brought to light an entire dwelling, an 'atrium' house: the first one found in Aquileia, a site known for its numerous remains of domestic buildings, most of which, however, consist of fragments or portions that are difficult to understand. Hence the decision to face one of the biggest and most original challenges: to re-propose a Roman house in its entirety and in its spatial encumbrance, creating a roof that would make the articulation of the spaces clear to the general public and offer a sensorial experience different, but no less exciting, than that which can be experienced through virtual reconstructions.

Archaeological investigations have also made it possible to document the evolution phases of the domus, which was the subject of various transformations and renovations, including the large fishing mosaic, which will be relocated to the reception room open to the garden. The standard of living of the owners is testified by a beautiful ring of gold and glass paste dating back to the II-III century AD. More than 1,200 coins have been returned from the excavations, among them the sestertium of Maximin the Thracian (235-236 A.D.), the emperor who died in Aquileia by the hands of his own soldiers who had besieged, without success, the city remained loyal to Rome. A treasure of 560 coins was then found in the area of the atrium, hidden by its owner in a hole around 460 A.D., in the turbulent years following the siege of Aquileia by Attila, king of the Huns, and never recovered.

The house was accessed from the west, through an atrium supported by four columns and equipped with a central pool for collecting water and a well, partially preserved and integrated in the missing part. In axis with the access was the tablinum, the landlord's reception room, with a rich mosaic floor. The rear part of the house gravitated on a central open space, the garden, surrounded by a mosaic corridor and equipped with a fountain. On it opened the large reception hall and, to the south, the triclinium, flanked by living rooms and a bedroom. To the north there was the kitchen with a masonry counter, while in the eastern part there were four shops, among which also the shop of a baker with a baking oven, whose remains are still visible.

7.2.1.2 The virtual tour

To match the target of creating a tool that emphasize the strong connection between the small community of Aquileia and the Cultural Heritage site of the city itself, a virtual tour will be developed inside the REEVALUATE framework for the execution of Pilot 3. The virtual tool will be a representation of the current state of the Titus Macer Domus, allowing users to fully explore and freely navigate the archaeological area. Usually, virtual tours are usable via these main options:

1. web-app: the tour exists inside a webpage and can be accessed by users using several devices, like as their personal computer, their smartphone, or a VR headset. An internet connection, a mouse-keyboard kit and a smartphone with a touch interface are usually required;
2. Application for PC: the tour is accessible by installing an application on users' personal devices. An internet connection is required for the download, and a mouse-keyboard kit for use;
3. Mobile application: by installing an application on their smartphone, users can explore the tour. The touch interface is needed.

All of these solutions have advantages and disadvantages. Considering the maximisation of diffusion and the end user of this type of solution, option number 1 is preferred for Pilot 3 development.

The virtual tour will be accessible by visiting a **web page**, without requiring specific hardware, software or to download particular applications from third parties. The idea behind the development of the virtual tour is to enable users and visitors to interact with and learn about the history of the archaeological artefacts they have chosen to prioritise using the tool developed in Task 2.2, and to access descriptive information and interesting facts about these objects through contextualisation campaigns involving experts in the field or enthusiasts, as result of Task 2.4 activities.

For the development of this tool, the framework Aton is be used, along with software for 3D modelling (blender), 3D scanning (Agisoft Metashape, Artec Studio), and image editing (Adobe Suite). Either a cloud server or an externally accessible local server can be used to host the service. Considering the

aim of the tour, that take place inside Pilot development, the connection with the Knowledge Graph and the Marketplace is a crucial point. In fact, to validate the framework, this assumption are relavant:

- Cultural artefacts are uploaded on the Marketplace;
- Cultural artefacts showed inside the virtual experience come from prioritization campaign (Task 2.2), that involved public in the decision-making process;
- Cultural artefacts have been digitized in Task 2.1 as result of Task 2.2 activities using modern technologies to create high detailed 3D models, and uploaded in the Knowledge Graph;
- Initial descriptions of cultural artefacts are provided by hosting institute;
- Further descriptions, curiosity, historical information are provided by Task 2.4, or the contextualization enabler, that enrich Knowledge Graph;
- All the data such as 3D models and properties of artefacts are retreived from Knoledge Graph and Marketpalce and directly imported in the virtual experience, ensuring the closure of the loop and these two conditions:
    - Used digital objects come from public preferences;
    - Object descriptions come from curators or experts' contributions.

7.2.2 Pilot site

The virtual tour will be developed in the archaeological area (Titus Macer's Domus) . and it will be promoted through institutional communication channels, more specifically in multilingual website dedicated to the Domus and the institutional newsletter, which reaches more than 6,000 users[9].

The use of a multilingual platform ensures accessibility and engagement for a broad and diverse audience. Moreover, in 2026 a new InfoPoint will be created in "Via Popone", and the Fondazione Aquileia is considering displaying the QR code inside this new Aquileia Hub.

7.2.3 Pilot personnel

Fondazione Aquileia has provided a selection of artefacts from the ancient Roman city of Aquileia. The personnel of the Aquileia Foundation is using their expertise in ancient and early Christian history to provide the assets that need digitisation and the contextual interpretations. Moreover, they will be the gatekeepers for involving the local citizens and students in the participatory actions of the pilot. More specifically, their contribution is including:

- Staff from the promotion and communication department of Fondazione Aquileia to promote the virtual tour project through online and offline channels;
- Archaeologists from universities with which Fondazione Aquileia has collaboration agreements for excavation work within their areas; this interaction will be relevant in the contextualization phase;
- The Director/archaeologist of Fondazione Aquileia for contextualization/validation of content.
- EducA educational department of the UNESCO site of Aquileia (participated in by Fondazione Aquileia and the National Archaeological Museum of Aquileia), to promote the virtual tour to schools;
- Custodians of Fondazione Aquileia, for on-site use of the virtual tour.

[9] https://www.fondazioneaquileia.it/it/cosa-vedere/domus-di-tito-macro

3DR will be representing the IT industries and specifically, virtual tourism. Their role will be to demonstrate the potential for reuse of the digitised CH artefacts and sites of Aquileia. Specifically, they are creating a virtual tour in order to promote the CH of Aquileia, by collaborating with Fondazione Aquileia to ensure that the creative reuse of the artefacts is done appropriately. The already involved 3DR team is composed of the following professionals:

- Restorer – responsible for analyzing artefacts and archaeological finds before the digitizing process, to ensure the conservative needs and the procedure to be followed during the manipulation and digitization;
- Digital Image Specialist – expert in digitizing techniques using several technologies and instrumentations. He is responsible for the digitization of the archaeological area and the archaeological finds preserved in the museum's rooms, and for the processing of the dataset for obtaining final 3D models;
- 3D Artist – expert in 3D modelling of artefacts and historical contexts. Responsible for the modelling of the 3D environment and of the optimized model, in accordance with the target platform for end users;
- Software developer – responsible for the development of virtual experiences (webapp, XR) for the interaction with historical contexts and 3D objects.
- Tester & Quality Checker – expert in quality control and bug hunting.

Fondazione LINKS will contribute through its expertise in innovation and digital transformation to support the design and implementation of the Aquileia pilot. Specifically, LINKS helps to define the pilot's execution and management plan. In addition, LINKS supports Fondazione Aquileia in stakeholder engagement, the preparation of communication materials, and the monitoring of pilot KPIs. The LINKS team member directly involved in these tasks is a senior researcher with consolidated expertise in digital transition and participatory project design in the cultural sector, ranging from stakeholder engagement to the management and facilitation of co-design and participatory planning workshops.

7.2.4 Pilot methodology

The Pilot methodology is characterized by three relevant phases: the first is the **Preparation** one, which encompasses preliminary choices, such as defining strategies for access and target groups involvement. Subsequently, the following step is **Execution**, defined by the actual digitisation, culminating in the development of an interactive 3D virtual tour of Titus Macer's Domus. Finally, the last phase is the **Evaluation** one, encompassing the qualitative and quantitative stakeholders' feedback. This Pilot case involves Fondazione Aquileia and 3DR for its implementation, while LINKS supports the community engagement activity.

Firstly, in the **Preparation** phase, when the final target group had not yet been identified, meetings were held with the residents of Aquileia and with local schools, not simply for presentation purposes, but to raise their awareness about the future project. This helped to establish contacts and connections that were useful for maintaining constant dialogue, supported by a short document prepared to keep participants up to date. Subsequently, the collaboration focused on schools, and a discussion was initiated with the Museum of Aquileia in order to identify which elements could be digitized. Moreover, an on-site visit was made with 3D Research to the House of Titus Macro, which allowed for a concrete assessment of the space and testing of the possibilities for intervention.

Secondly, within the **Execution** framework, young citizens of Aquileia (students) are called to participate in the selection of the assets to be digitised within a participatory process enabled by the Public Sensing Prioritization Enabler. More specifically, by December 2025, students were asked about their interests and why, to establish the following prioritization on the Roman objects to be digitized. The involvement of schools raises awareness among young citizens of Aquileia about the local archaeological heritage and its preservation. At the same time, through the participatory campaign on Facebook, it allows a direct link to be established with tourism, guiding the narrative and methods of enjoyment towards content that is more accessible and attractive to different target audiences. Meanwhile, the personnel of the Aquileia Foundation are using their expertise to provide the assets that need digitisation and contextual interpretations, which then will be the basis for a broader virtual tour of the Domus. The assets already identified in Pilot 3 are: a *stone weight*, found during the excavations of the Domus and currently preserved in the National Archaeological Museum of Aquileia; a *stone brick oven* (still located within the Domus), dedicated to the production of bread; a *stone wellhead* (still located within the Domus); a *sestertius*, an ancient coin (found on the premises of the Domus and currently preserved in the National Archaeological Museum of Aquileia); and, finally, a *polychrome mosaic* with a fawn and a dog (still located within the Domus). Moreover, the National Archaeological Museum of Aquileia has identified some macro-classes of objects, from which around two or three items will be selected for each class, for a total of 19 objects. These will be added to the artefacts already planned by the Aquileia Foundation, bringing the total number of digitalized artefacts to 24. Thereafter, the Pilot execution is requiring several months and will involve phases of digitization, development, study and documentation, modelling and optimisation.

For the digitalisation, eight high-resolution videos focused on the 3D reconstruction of the archaeological areas of the UNESCO site of Aquileia are used as case study to support the initial phase of modelling and development of the virtual tour. As already mentioned, this latter are accessible by visiting a web page, without requiring specific hardware, software or to download applications by third parties. Some historical items currently on display inside the National Archaeological Museum of Aquileia have been digitalized alongside the archaeological area of the Titus Macer's Home using a combination of metrological-grade scanning and photogrammetric workflows to generate accurate 3D models.

After the digitisation made by 3DR, by the end of March, the community were called again to collaboratively provide the context for the selected assets, using the Contextualisation Enabler. This community was composed of archaeologists, and historians, who provide relevant contextual information for the digitalised items, including dating, use of the item, historical data, and eventual symbology explained. The 5 digitalized objects were displaying a descriptive text containing some of the following information:

- provenance;
- description of historical relevance;
- materials;
- aim;
- comparison with similar "objects" of other areas outside Aquileia;
- institutional IDs, inventory numbers, references to the holding collection;
- picture of the real "object" and/or 3D reconstruction.

The campaign started and 10 emails have been sent, with two questions per artefact (there were used 5 artefacts in total: the stone weight, the stone well, the sestertius, the oven and the mosaic, as in the Prioritisation campaign.)

Thus, the virtual tour will be assessed for appropriate use of context through the Context Validation Enabler, whose task is to verify that what is produced during contextualization is correct, consistent, and scientifically acceptable. Then, the virtual tour will be a narrative and interactive experience, accessible from a web browser. It will be enabled via QR codes through which visitors can directly connect to the digital recreations and will also be available on the foundation's website for remote users.

Lastly, in terms of **Evaluation**, this will be carried out both in terms of quantity (number of participants, visits, surveys completed) and quality (stakeholder feedback, perception of educational value, degree of satisfaction).

7.2.5 Ethical and legal requirements

The execution of Pilot 3 must comply with the ethical and legal standards established at EU level, as well as with the specific requirements outlined in the REEVALUATE framework.

7.2.5.1 Intellectual Property Rights (IPRs)

The materials and tools used in the digitisation process will likely be subject to certain IPRs, as well as the outputs (i.e., the digitised assets). Indeed, the 5 digital assets will most likely be generally covered and protected by copyright law, in line with the **Berne Convention**, which lays down certain minimum standards for a work to be protected. Moreover, it is also worth noting that copyright in a qualifying work will arise automatically on the work's creation, without any formality or registration. The practical effect of being a copyright holder in relation to a specific work is that the author/owner will enjoy certain exclusivity rights in respect of their work and can enforce such rights. By having the exclusive right to reproduce the work or authorise its reproduction, by creating or authorising the creation of a translation, or by making an adaptation of the work. Further, REEVALUATE partners are required to grant each other, a royalty-free basis, access to results needed to implement their own tasks under the action. Finally, the use of the DLT-based Asset Tokenisation and IPR Management Enabler will ensure secure, transparent, and traceable handling of IPRs across the consortium.

Also noteworthy is the fact that raw data is usually not considered an intellectual creation of the human mind, so it will not generally be granted copyright protection. That is why the **Directive (*96/9/EC*)** ensures protection of the database as a whole. If the database has been fixed in a given form, then the Database Directive grants its maker a number of exclusive rights, including the right to carry out temporary or permanent reproduction of the database or its part, translation or adaptation, and distribution to the public of the database or its copies.

7.2.5.2 Privacy and Data Protection

In order to assess the effectiveness of the solutions within the proposed framework, Pilot 3 has been interviewing and working with human participants and, in doing so, collecting and otherwise processing their personal data. Naturally, this raises certain privacy-related ethical issues which the project partners are aware of and committed to address. Any data processing will be done in full compliance with the relevant legal requirements applicable in the country where the data collections are taking place (Italy). These may include **GDPR** as well as any other sector specific rules, all of which

stem from the principles set out in the **CFREU** (namely Arts. 7 and 8) and **ECHR** (Art. 8). Most notably, any personal data processed is in line with the following principles:

- **Lawfulness, fairness and transparency**: Students and expert stakeholders will be informed about the purposes of processing their data when, for example, they participate in the prioritization and contextualization campaign;
- **Integrity and confidentiality**: The personal data collected will be stored by 3RD, Links, and the Fondazione Aquileia with adequate security measures to prevent unauthorized access;
- **Accountability**: The responsible partner must be able to demonstrate that all data collection and management activities are carried out in full compliance with the GDPR;
- **Consent**: When students or expert stakeholders participate in campaigns, they must have signed before a clear and understandable consent form. Such consent will be obtained using information sheets and consent forms in a language and terms fully understandable to them. These will describe the aims, methods, and implications of the interviews, workshops and online survey, the nature of their participation, and any benefits or risks (e.g., to privacy) that might be involved;
- **Purpose limitation**: No data collected will be sold or used for any purposes other than the current project;
- **Data minimization**: Only strictly necessary data will be collected (e.g., age, opinions on objects), avoiding the storage of additional or irrelevant data;
- **Data sharing**: Data will be shared with other project partners only insofar as such sharing is lawful, such as on the basis of data subjects' consent or for the legitimate interest of the project partner.

7.2.5.3 Gender-sensitive aspects

Recognising the principle of gender equality as enshrined under Art. 23 of the **CFREU**, in the EU's **Gender Equality Strategy 2020-2025**, as well as under the **United Nation's Sustainable Development Goal No. 5**, the Pilot requires the partners to take all measures to promote equal opportunities between men and women in the implementation of the project and aim, to the extent possible, for a gender balance at all levels of personnel assigned to the project, including at the supervisory and managerial levels. Indeed, the project aims to have an even, 50/50 participation rate of both men and women amongst teams and in leading roles. Gender balance across the project's research team, advisory boards and committees is continuously monitored to ensure women and men are equally represented. To this end, project partners are asked to confirm the respective numerical ratios between male and female staff/participants, as well as any inclusion and exclusion criteria in the relevant WPs. This means that participation in the prioritization and contextualization campaign will also be balanced between students and scholars (archaeologists, historians, and researchers).

7.2.5.4 Socio-economic aspects

The consideration of socio-economic aspects is derived from and supported by a high-level non-discrimination principle required by Art. 21 **CFREU**. Also, relevant here is the requirement for integration of persons with disabilities arising from Art. 26 CFREU. The Pilot contributes to "*democratise access to CH in a traceable and unbiased manner that recognises and has the capacity to identify any possible misuse*". Particular attention is paid to the inclusion of vulnerable or traditionally marginalized groups, so that their perspectives are also heard and valued. To do so, the

Pilot framework envisages a set of standardised tools and enablers to promote an active engagement of the public in the prioritisation and contextualisation process of the CH artefacts.

7.3 Timeline

Pilot execution is requiring several months involving digitization, development, study and documentation, modelling and optimisation, implementation and testing phases. It will run until October 2026:

- The Prioritization Campaign was scheduled by the middle of November 2025 (schools' engagement), then, followed by the digitization phase. However, it has been realized by the end of December 2025.
- The Contextualization Campaign started some months after the end of the previous tasks, and was concluded the 31st of March, when the Curator reviewed the submissions and approved or rejected the responses.

The Pilot assessments and evaluations will begin in November 2025 and will continue until December 2026. There will be two rounds: one that will last until September 2026, and the second that will start immediately afterwards and conclude at the end of the project.

7.3.1 Preparation

To initiate the process of identifying the CHIs and to establish a comprehensive overview of the available digital cultural assets, a dedicated questionnaire was designed and distributed to all CHI partners engaged in the Pilot actions. More specifically, meetings were held with schools, the Museum of Aquileia and with 3DR at the House of Titus Macro, which allowed for a concrete assessment of the space and testing of the possibilities for intervention. The primary objective was to collect structured, standardised information that would enable the project team to map the current availability, typology, and accessibility of artefacts. This section focuses on identifying digital objects already in the possession of the CHIs, which are available and potentially usable within the pilot use case. As a result, a collection of eight high-resolution videos has been made available. These videos focus on the 3D reconstruction of archaeological areas within the UNESCO World Heritage Site of Aquileia. While only the final video outputs are available (not the original 3D model source files), these assets provide valuable audio-visual material that can support the communication and dissemination components of the pilot. At this stage, however, some limitations also emerged: there were some unexpected technical limitations related to Facebook's META API. The issues that arose prevented the questions from being posted on the main Facebook page, as originally planned. To ensure timely dissemination and demonstrate the functionality of the tool in action, the campaigns were posted via the project's own profile. Moreover, the text appeared as a single block that was difficult to read. This could have created confusion in the framing and threatened the credibility and importance of the project. Finally, the first phase coincided with school closures, thus limiting the participation of a key target group.

The expected output of the Preparation phase consists of a preliminary dataset of preferences and classifications, stored in the shared project platform, together with a shortlist of artefacts from the Domus of Titus Macro. This ensures both awareness among the young citizens of Aquileia and a concrete basis for the subsequent Execution phase.

7.3.2 Execution

The execution of the Pilot is structured into different steps leading to the implementation of the virtual tour.

7.3.2.1 Prioritization of Historical Artefacts

Using a participatory approach made achievable by the Public Sensing Prioritization Enabler, young people in Aquileia will be socially engaged (on FB) to guide choices. The "sentiment analysis" questionnaire makes it possible to develop a direct connection with young tourism, directing the story and enjoyment techniques toward information that is more appealing to various target audiences and easier to access. This campaign directly involves young people and is therefore an innovative way for them to learn about heritage and, at the same time, actively contribute to defining how objects are treated, valued, and made accessible. After collecting and analysing questionnaire responses from the participating Pilot, a broad classification of the identified cultural heritage artefacts has been produced (in a standardized collection of information). This means that a "sentiment analysis" carried out to understand the importance and how these digitalized objects must be reaching the public. Put differently, the number of "likes" represents the voting process within the prioritization campaign: each like is equivalent to a vote in favor of a particular artefact, and a higher number of likes indicates a higher priority for digitization. Additionally, the comments are analyzed using a sentiment and emotion analysis. The system classifies each comment as positive, neutral, or negative and associates each comment with one of the following basic emotions: joy, love, sadness, surprise, anger, fear. The results of the analysis are presented in aggregate form for each individual artefact

7.3.2.2 Digitalization

The selected artefacts was digitized by 3RD, using a combination of metrology-grade scans and photogrammetric workflows to produce high-fidelity 3D models. In addition, eight high-resolution videos of the UNESCO World Heritage archaeological sites in Aquileia completed this process. While only the final video outputs are available (not the original 3D model source files), these assets provide valuable audio-visual material that can support the communication and dissemination components of the pilot. Also, for archaeological areas**,** 3D scanning and unmanned aerial vehicle (UAV) photogrammetry provide high-resolution topographic data critical for mapping and monitoring excavation sites and landscape features. These geospatial data sets are integrated within Geographic Information Systems (GIS) to support spatial analysis, stratigraphic interpretation, and site management. So, in most cases, digitising is a process that involves both 2D and 3D representations of objects, being the process of transformation of data from analogue to digital form.

Moreover, metadata are created for each artefact, including provenance, historical significance, materials, function, comparisons, and institutional references. Photographs and extracted images from the existing video material may also be provided to support the digitalization. Through the combination of storytelling and 3D content creation, the Aquileia pilot contributes not only to the technical testing of the REEVALUATE framework but also to the broader goal of engaging especially the young audiences with the hidden richness of Roman heritage preserved within and beneath this historic site.

The digitisation phase was scheduled for the end of September 2025. During this period, 3DR specialists digitised the archaeological area and the artefacts within the Museum rooms. The approach, as shown in D2.4, was split into two phases:

- PHASE 1 – Digitization of Titus Macer's Domus

Being an outdoor archaeological area, the complete 3D model of the Domus was obtained by a photogrammetry process that involved the integration of two different optical datasets. The

photogrammetry technique allows merging two different sets of photography obtained by different sensors, in which the first one was obtained by drone mapping and the second one by manual camera shots. Due to the size of the structure covering the area, a manual flight was executed to ensure the preservation of the archeological structure and instrumentation.

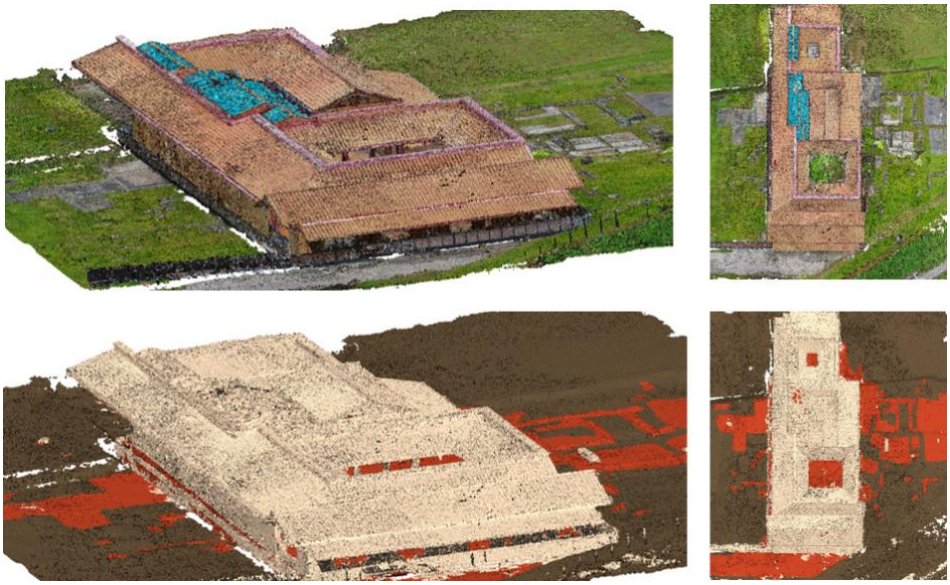


Figure 33: Cloud point of the Domus obtained via aerial photogrammetry. RBG view (on top), segmented view (on bottom).



Figure 34: Screenshot from 3D model of the Domus.

Considering the major complexity in digitising a large area in manual flight that usually bring in lack of undercuts recording, several photos taken by a manual camera will be added, ensuring the coverage of the whole area in terms of undercuts and close details. A codified colour palette was used to ensure the right representation of colours in the digital environment. The two datasets were later light-balanced and merged into a unique alignment process to obtain a single large and well-detailed 3D textured mesh. Different format files can be subsequently exported from the project, such as images of portions of the area, point clouds, and cut meshes, useful for use with the enabler developed inside the REEVALUATE framework.

- <u>PHASE 2 – Digitization of museum objects</u>

Museum objects were digitised during a separate session. Considering the material composition and dimension of these archaeological finds, a combination of photogrammetry and structured-light scanning techniques were integrated. Using 3D scanners for digitising of medium-sized objects allows the generation of precise and detailed geometry with texture information, which is useful for online virtual experiences, considering the object can be processed and simplified within the same and unique environment. Photogrammetry was instead used as a support technique for objects that are either very small or have extremely high detail, as needed. The codified colour palette was again be used to ensure colour and light correction. Finally, the professional involved were a Digital Image Specialist, a 3D Artist and a Tester & Quality Checker.



Figure 35: Light Structured Scanners on a marble sculpture, National Archaeological Museum of Aquileia



Figure 36: Workflow of processing with photogrammetry and 3D scanner.

7.3.2.3 Contextualization

After digitisation, the community will be re-engaged through the Contextualisation Enabler, involving two archaeologists and three history professors. The interactions of the prioritisation social media campaign and contextualisation one must be at least 50 (25 for the first Prioritisation Campaign and 25 for the Contextualisation Campaign). Hence, two distinct samples of participants are involved: in the first phase, young students from Aquileia, whose involvement made it possible to understand the interests and curiosities of younger audiences, helping to enhance the tours appeal and potential

visitors; in the second phase, however, the involvement of professionals- archaeologists and historians provided a more specific and scientific contribution, ensuring the quality and reliability of the contextualization.
Moreover, their contribution will be assessed through the Context Validation Enabler to verify that what is produced during contextualization is correct. Although different in nature and purpose, both contributions are essential and are also implemented through the project's KPI.

7.3.2.4 Development of the Virtual Tour

At the end of the digitizing task, a virtual tour is in development. Users will fully explore and freely navigate the archaeological area of the Titus Macer Domus while some 3D hotspot will capture thir focus. The virtual tour will be a narrative and interactive experience, accessible directly via link, downloadable icon on the smartphone, scanning a QR code located on site, which will allow visitors to connect to the digital reconstructions, while for remote users it will be available on the Foundation's website.
User experience will be focused on the Domus of Titus Macer, its different areas and related archaeological finds. Consequently, the structure of the virtual tour (more properly, the virtual walkthrough) is represented as follows:

- Users are spawned inside the area of the Domus;
- Users can move inside the area using the input device for simple movements such as going forwards, backwards, left and right, turn around;
- Users can change the view via the input device (for example by clicking and dragging or just moving);
- Users can interact with objects by clicking on them, and a pop-up window will show some detailed information such as provenance, typology, use, and description coming from contextualization campaings;
- 3D models can also be manipulated using the input device with simple movement (rotate, pan, zoom).

During the completion of the 3D environment and the secondary elements (terrain, trees, grass), the fundamental interaction mechanics will also be integrated: walk, turn, grab, and select. The digitised objects from the museum will be placed inside the archaeological area, giving them a context for common use during the Roman period and according to the importance given by the prioritisation enabler and contributions from the contextualisation enabler.

This phase will last until the end of the development of the full experience, according to entertainment and scientific accuracy. The word commonly used to describe this process is *edutainment*. Finally, the Professional involved will be a 3D Artist, a Software developer, a Tester & Quality Checker.

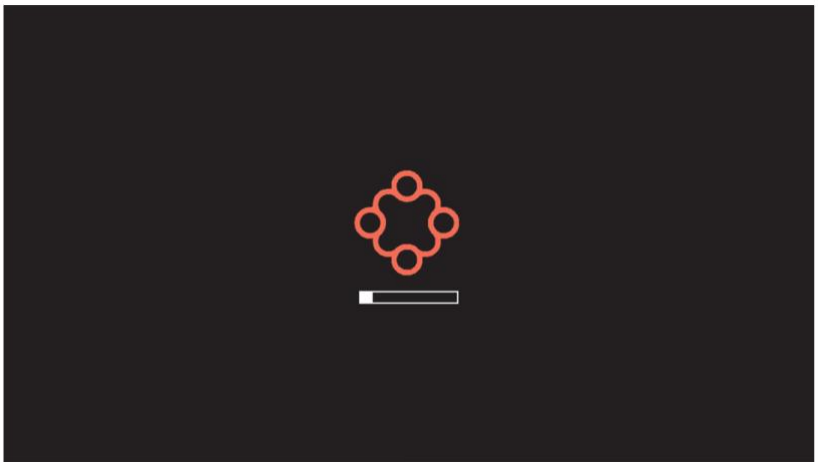


Figure 37:. Prototype of the loading page for the online virtual experience.

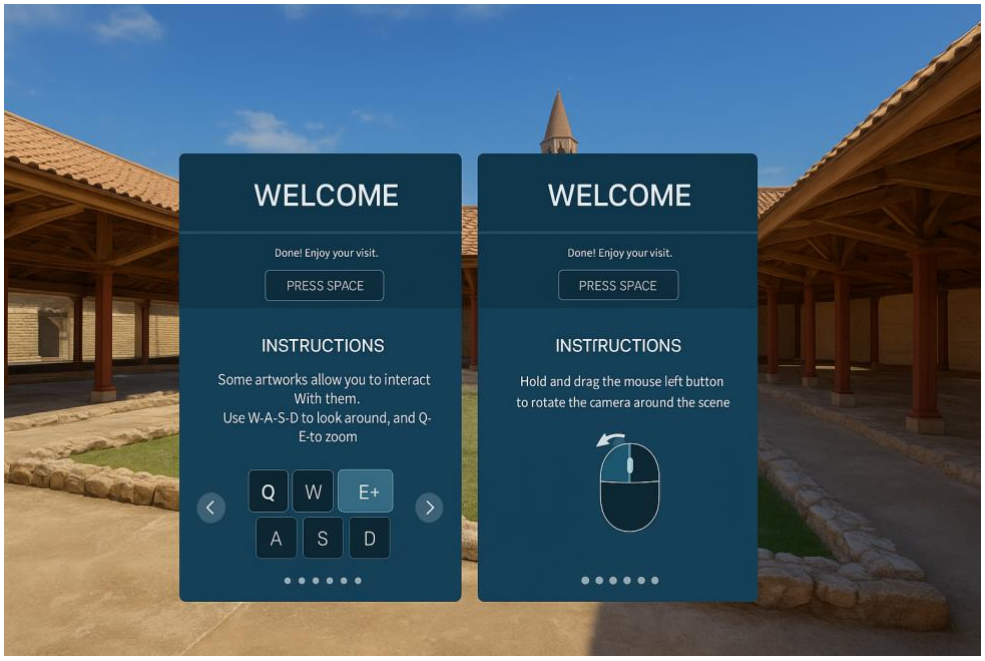


Figure 38: Example of a starting page with a tutorial and main instructions.

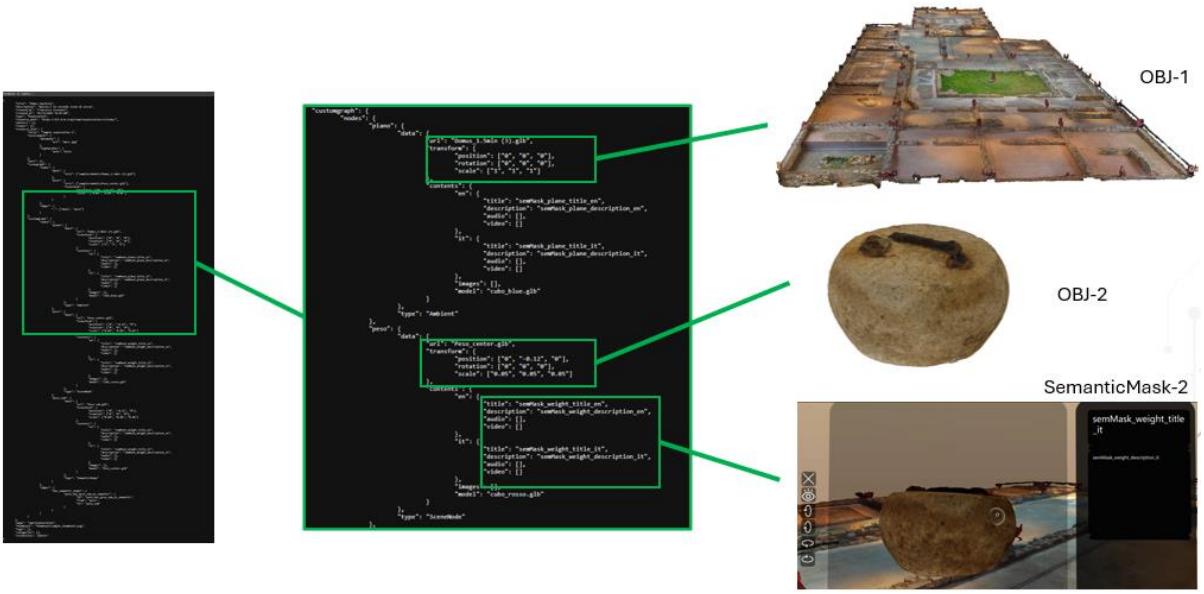


Figure 39: Preview of the virtual experience with an example of structured data and the panel for a 3D object. In the panel can be noted the description, that will be directly retrieved by the KG.

7.3.2.5 Dissemination and Public Engagement

The project will add value to the Aquileia's established status as a **UNESCO World Heritage Site**, recognised worldwide for its Patriarchal Basilica and extraordinary archaeological sites. This allows the tour to be promoted not only locally (Aquileia and Friuli Venezia Giulia), but also nationally and **internationally**, enhancing a cultural heritage of universal significance. The creation of a virtual tour inside the house of Titus Macer offers a tangible way to experience daily life in a wealthy roman household, reflecting the outstanding universal value (OUV) of Aquileia's UNESCO sites. Through the virtual representation of a wealthy Roman house, the project highlights the prosperity and cultural importance of the ancient city and makes its historical significance accessible to the public.

The virtual tour will be promoted through various communication channels, such as its **website** and **remote access** (newsletters, social media, articles, etc.) to publicise its use and actively engage the various target audiences. Indeed, the institutional newsletter and the multilingual website dedicated to the Domus reaches more than 6,000 users. Additionally, its dissemination will also occur through **offline tools**, such as:

- Archaeological journals with which the Foundation collaborates. In particular, ***Archeologia Viva*** *(Giunti Editore S.p.a)*, will play an important role. *Archeologia Viva* is the first major Italian magazine dedicated to the divulgation of archaeology and it also has an Instagram page with almost 9,000 followers, thus offering an additional digital channel capable of reaching a wide and diverse audience.
- **Aquileia Film Festival** that Aquileia hosts at the end of July. It is a major cultural event featuring screenings of films on archaeological and historical themes, accompanied by talks by historians, experts, writers and prominent figures. The event takes place in the two squares surrounding the Basilica of Aquileia, Piazza Capitolo and Piazza Patriarcato, which can accommodate around 500 viewers. In this prestigious setting, the Aquileia virtual tour project will be presented and promoted, offering a further opportunity for face-to-face dissemination and direct public involvement, thus increasing the visibility of the initiative.

- Furthermore, at the end of September, the Aquileia Foundation participates in the **European Heritage Days**, with a rich programme of initiatives including historical re-evocations, guided tours and special openings of excavation sites. In this context, the Virtual Tour would not only be an additional element, but also a bridge between tradition and innovation, capable of combining the historical and archaeological dimension with the potential offered by new technologies.
- In addition to the festivals already mentioned, the Virtual Tour can also be promoted at other important events held in Aquileia throughout the year, such as the **European Archaeology Days** (June) and the **Festival dei Cammini di Aquileia** (April), dedicated to rediscovering Roman heritage through itineraries, conferences, etc.
- Collaborations with the **academic world**, namely the universities that are conducting excavations and research in Aquileia (Padua, Trieste, Udine, Venice, and Verona). They will be a fundamental channel for disseminating the project.
- **Local associations**, such as the National Association for Aquileia and Pro Loco Aquileia, which ensure the direct involvement of the local community and broader public participation.
- In 2026 a **new InfoPoint** will be created in "Via Popone", and the Fondazione Aquileia is considering displaying the QR code inside this new Aquileia Hub.

7.3.3 Evaluation

The Evaluation phase aims to measure the impact of the virtual tour from both a quantitative and qualitative point of view, ensuring that the pilot also generates real engagement among the various target groups. Put differently, it will be possible to allow for an overall assessment of the pilot's effectiveness, providing useful elements for future improvements within the REEVALUATE framework. More specifically:

- In **quantitative terms**, feedback and satisfaction surveys from participants and stakeholders involved in the pilot will be collected. Following the "Feedback and Satisfaction" KPI, in order to provide a complete measurement of the stakeholders, the target results will be at least 40. Furthermore, the number of interactions on social media posts, web page and press visits, and the frequency of QR code scans will complement the dataset. This KPI requires 10 screenshots and links to media mentions and proof of press coverage, which will serve as verifiable evidence of the dissemination efforts and the public visibility achieved by the pilot.
- In **qualitative terms**, feedback will be collected through an online questionnaire (such as Google Form), structured to capture both experiential and knowledge-based dimensions. The questions will concern accessibility, interactivity, and overall satisfaction. Participants will also be asked to express the perceived impact of the experience, both in emotional terms (e.g., engaging, immersive, surprising) and in informational terms (e.g., new knowledge acquired, comparison with previous visits, greater understanding of the artefacts).

7.4 Assets used

Among the assets used, there are archaeological artefacts provided by the National Archaeological Museum of Aquileia, divided into heterogeneous macro-areas, for a total of 15 items.



Figure 40: Clay oil lamps



Figure 41: Ceramic jugs



Figure 42: Bronze statuettes

Approximately two clay oil lamps with open-channel moulds from the 2nd-3rd century AD and three pieces of fine common ware ceramic jugs from the 2nd- 4th century AD will be selected. The museum will also make available for digitisation two bronze statuettes, preferably well-preserved pieces such as those depicting Athena and Mercury. Next, a common ceramic pot with a globular body, a terracotta inkwell, glass bottles, or alternatively a glass cup and a glass jug will be digitized. A large amphora from the 2nd-3rd century AD and a slab decorated with a bas-relief depicting a male figure. In addition, a bust depicting a mature adult male from the 2nd century AD and, finally, a decorated marble mortar.



Figure 43: Amphora



Figure 44: Glass bottles bust



Figure 45: Adult male

In addition, there are five artefacts located within the Titus Macer House, which are described in the following table:

Table 13: Table of assets used in pilot 3

#1	Information
Object	Stone weight (“peso di pietra”)
Provenance	Archaeological Area “Cossàr Fund” (“Fondo Cossar”). It has been found in the excavations of the Domus -Titus Macers’ House- and it is currently preserved in the National Archaeological Museum of Aquileia.
Date	I century AD
Description / historical relevance	Titus Macer’s name is carved on a stone weight discovered during excavations by the University of Padua in the back of the house: T. MACR, i.e. T(iti) Macr(i), “Titus Macer’s”. Using the same method applied in Pompeii, the house discovered in the Cossàr Fund is thus called “Titus Macer’s house”. We don’t know who Titus Macer was: unfortunately, the name of the family name (gens) on the stone weight between the praenomen Titus and the cognomen Macer is missing. We can only assume that Titus Macer was a wealthy merchant who could afford to buy two adjacent properties to create a 1,500 square meters new house.
Materials	Stone with iron handle
Aim	Commercial weight (10 lbs)
Comparison with similar “objects” of other areas outside Aquileia	/

#2	Information
Object	stone wellhead
Provenance	Found (and still located) within the Domus (belonging to the archaeological area of the Cossàr Fund)
Date	I century BC-I century AD
Description / historical relevance	The well was located in the atrium of the domus, the "public" part of the house. In the center of the atrium there was the impluvium basin (now rebuilt) with a well. The wellhead, i.e., the protective balustrade closed around the hole of a well, was partially found. The missing part was then reconstructed with 3D printing techniques. The well was not very deep because the aquifer in Aquileia is almost at ground level.
Materials	Stone
Aim	Rainwater collection for the domus
Comparison with similar “objects” of other areas outside Aquileia	The wellheads in Roman world are very different from each other, but the general shape is functionally the same

#3	Information

Object	oven
Provenance	Found (and still located) within the Domus
Date	I century B.C.?
Description / historical relevance	The oven is located inside the southernmost shop of the domus, which was used as a bakery. Today we can recognize the lower part, circular inside, of the oven, the brick base for the millstone used to grind the wheat as well as a counter for preparing bread. The sale then took place directly on the facing road, the eastern cardo.
Materials	Stone bricks
Aim	Oven belonging to one of the shops of the Domus, dedicated to the production of bread
Comparison with similar "objects" of other areas outside Aquileia	Ovens from Pompeii offer the best comparisons, even if they are better preserved in the higher part of their structure.

#4	Information
Object	Sestertius (ancient coin)
Provenance	Found in the area of the shops of the Domus. It is now preserved in the National Archaeological Museum of Aquileia.
Date	Dated 235-236 A.D.
Description / historical relevance	Over 1200 coins have been returned from the excavations (of the University of Padua), among which stands out the sestertius of Maximinus Thrax, the emperor who died in Aquileia at the hands of his own soldiers who had laid siege, without success, the city remained loyal to Rome.
Materials	Bronze
Aim	Commercial use
Comparison with similar "objects" of other areas outside Aquileia	Coins of Maximinus Thrax are known in other parts of Roman world

#5	Information
Object	Polychrome mosaic with fawn and dog
Provenance	Titus Macers' House (and still located within the Domus)
Date	End of the 2°century-beginning of the 3°century
Description / historical relevance	The mosaic, rich in details and colours, located in the small room overlooking the garden, represents a deer and dog with their jaws wide open. In general, the mosaics kept in the Domus offer a sampling of the tastes in vogue for mosaic decoration.
Materials	mosaic tiles
Aim	Decorative use for one of the rooms of the Domus: the studio ("studiolo")

Comparison with similar “objects” of other areas outside Aquileia	/

7.4.1 Digitization status

ALREADY DIGITISED	
Types and number of existing digitised objects that will be included in the pilot use case	8 high-resolution videos focused on the 3D reconstruction of the archaeological areas of the UNESCO site of Aquileia.
File formats of the digitised objects	.mp4
Is there a description of its corresponding physical item or additional content (either as an accompanying file or included within the object)?	No
Types of metadata related to each digitised artefact that will be used in the pilot use case	-
Estimate total size (in MB)	around 230 MB per each video
Intellectual property rights currently applied to the digitised objects, or intend to be applied in the future?	Current situation: copyright. Future: Depending on possible policies changes
Intended or planned sharing of digitised artefacts?	The videos are currently available at https://www.fondazioneaquileia.it/it/visita-aquileia/aquileia-3d
Is data stored/processed on your own machines or externally (cloud, hosted)?	Website, social media (YouTube channel @FondazioneAquileia) and internal server
Are your digitized artefacts and metadata externally accessible?	No
If digital objects are stored in external repositories, how does the pilot leader plan to provide access?	-

Is the APIs publicity available?	No
Are access rights handling specific to your institutions or can it be integrated into a wider Reevaluate "single sign on"? *(For example by logging in with Google, Apple, Facebook or Microsoft credentials)*	No
Would you be (organisationally/legally) able to provide content access to the project (for the pilots) or should the information above be considered for conceptual use (i.e., architecture) only?	No

TO BE DIGITISED	
Number of new physical objects provided for the case study	In the context of the archaeological site "Domus di Tito Macro / Titus Macer's House" (please find here more information https://shorturl.at/SauvI), 5 "objects" could be the basis for a broader virtual tour of the Domus.
file formats for each type of digital object	
Types of objects provided for the case study	stone weight (found in the premises of the Domus and currently preserved in the National Archaeological Museum of Aquileia) stone brick oven (still located within the Domus) stone well (still located within the Domus) ancient coins (found in the premises of the Domus and currently preserved in the National Archaeological Museum of Aquileia) mosaic (polychrome mosaic with fawn and dog, still located within the Domus) > if possible, considering that it is developed on a horizontal dimension
Expected file type for the new digitised objects	3D model for a virtual tour
For each physical item intended for digitization	For each item it could be provided a descriptive text containing the following information:

in the pilot use case, is there a description (as an accompanying file)?	provenance description of historical relevance materials aim comparison with similar "objects" of other areas outside Aquileia Moreover, a picture of the real "object" and/or 3D reconstruction (taken from the already available videos) can be provided.
Type of metadata needed to create for the new digital objects	historical period, weight (when possible, e.g., stone weight)
Intellectual property rights intended to apply to the digitised artefacts	Copyright

7.5 Enablers used

The REEVALUATE framework envisages a set of standardised tools and enablers; the Pilot 3 will include:

- Public Sensing Prioritization Enabler, the general aim is to promote an active engagement of the public in the prioritisation process of the CH artefacts, ensuring that diverse voices and perspectives (also from marginalized or sensitive groups) are heard and taken into consideration. The Aquileia pilot aspires to create a model for participatory heritage digitization, where technology and tradition intersect to preserve and promote the stories of the past in ways that are meaningful for the present and future. It is in this context that young students living in Aquileia will be asked to participate.
- Contextualisation Enabler, through the combination of storytelling and 3D content creation, the Aquileia pilot contributes not only to the technical testing of the REEVALUATE framework but also to the broader goal of engaging different public with the hidden richness of Roman heritage preserved within and beneath this historic site. In this case professional stakeholders such as archaeologists, historians, experts, passionate people, and scholars will be taken into account in order to enhance the knowledge and the information while in parallel asking for their active participation.
- Context Validation Enabler, to verify that what is produced during contextualization is correct, consistent, and scientifically acceptable.

7.6 Stakeholders

- Museo Archeologico Nazionale di Aquileia; a public institution that will not only provide scientific and collaborative support to the project but also makes available several archaeological artefacts to be digitized.

- Local Students; a community group part of the prioritization campaign. They participate through social media interactions and give their preferences and motivations about the objects to be digitalized and their narrative consumption.
- Archaeologists, Scholars, Historians, Experts, and history enthusiasts; the network is actively involved in the contextualisation process, giving important scientific contributions.
- EducA educational department of the UNESCO site of Aquileia; an educational programme that promotes innovative learning activities for schools through thematic pathways and workshops. It will play a key role in disseminating and valorising the virtual tour.
- University of Padua - Department of Cultural Heritage; the Department has been directly involved in the archaeological excavations over the years, and it will provide scientific support to the contextualization.
- CNR-ISPC; is the developer of the framework that will be used for the development of the virtual tour.

7.6.1 Forms and documents

- Agreement between Fondazione Aquileia and DRM FVG for the establishment of the joint Educational Department "Aquileia" (EducA); The document regulates the establishment of a joint Educational Department, called 'Aquileia', aimed at designing, organising and implementing teaching and educational activities aimed primarily at school children. The agreement was signed in Trieste in June 2024 between DRM FVG, namely the National Archaeological Museum of Aquileia and the Early Christian Museum, and the Fondazione Aquileia. It will remain in force until 30 June 2026 and may be extended until June 2028.

- Invitation letter for local students' engagement (*Grant Agreement No 101132389*); the invitation text, addressed directly to students, encouraged them to imagine themselves as "time travellers" and to choose the Roman artefact that fascinated them the most, explaining why.

- Invitation letters for Archaeologists, Scholars, Historians, Experts, and history enthusiasts; the aim of these communications was to involve them in the contextualisation process, ensuring that their scientific knowledge and perspectives contributed to the interpretation of the digitised artefacts.

7.7 KPIs

7.7.1 List of KPIs

Table 14: KPI Table for Pilot 3

KPI	Verification/Measurement mechanism	Target results (numbers)	Priority (critical or not)	Can be automatized? How?	Other comments
Number of participants engaged in the collaborative contextualisation and prioritization process	Number of interactions for each post of the prioritisation social media campaign and contextualisation on FB and IG	50	NO	?	Related to task 4.6
Number of digitised artefacts stored in the repository and made accessible to the wider public	Quantitative measurement of the uploaded files	20	NO	Maybe by linking a counter on the repository	Related to task 4.6

Number of copyright violations prevented through the use of the copyright manager enabler					NOT APPLICABLE for Pilot 3
Feedback and satisfaction surveys from participants and stakeholders involved in the pilot	Quantitative measurement of the filled in surveys and qualitative evaluation of the feedback provided by the stakeholders	40	NO		Related to task 4.6
Number of media mentions and press coverage of the pilot	Dissemination package of Pilot 3 containing the screenshots and links to media mentions and proof of press coverage	10	NO		
Increase in revenue or funding secured by CHIs as a result of increased engagement with stakeholders and promotion of digitised artefacts					**Not directly feasible. Probably to be replaced by number of users accessing the webpage in which the virtual tour will be available?**

7.7.2 Materials for determining KPIs

In order to determine KPIs and verify their achievement, different operational approaches and instruments might be envisaged.

PKI n.1, Number of participants engaged in the collaborative prioritization and contextualisation process:

Online questionnaires: FB surveys will be distributed to participants, both local students (prioritization) and professional stakeholders (contextualisation). The nature of the questions will be quantitative:

- Prioritization: The survey will include the number of respondents, the number of completed forms, and social media interactions (likes, comments, shares etc.).
- Contextualisation: Professional stakeholders (archaeologists, historians, enthusiasts, etc.) will provide comments and additional information on the digitalised artefacts. The materials will then undergo a validation process, since these inputs are checked and eventually integrated into the final narrative of the virtual tour. From the qualitative perspective, the relevance and accuracy of experts' contributions will be assessed (approved/revised/rejected). More specifically, to properly respond to the KPI, both the number of professional stakeholders involved, and the subsequent validated contributions will be considered.

KPI n.2, Number of digitised artefacts stored in the repository and made accessible to the wider public:

Counting measurement: This KPI will be evaluated by counting the number of artefacts that have been successfully digitized and uploaded. By consequence, not only will the mere quantitative measure of the assets be considered, but also other factors such as**:**

- Metadata records, including typology, materials, dating, and additional information.
- Effective accessibility, since it is fundamental that the uploaded file is truly accessible to the public through QR codes or the Fondazione Aquileia website.

KPI n.3, Feedback and satisfaction surveys from participants and stakeholders involved in the pilot:

Online and on-site questionnaires: short surveys will be distributed to participants after the virtual tour experience (both online using, for instance, google form, and on-site). Questions will be qualitative (evaluate the satisfaction, accessibility, clarity, emotional and cognitive impact, etc.), quantitative (number of visitors, interactions, etc.) and open-ended questions.

- Qualitative: "*Do you feel that your knowledge has increased after the tour?*" "*How would you rate the experience?*" "*Do you find the tour to be clear and accessible?*"
- Quantitative: *"How many times have you visited Aquileia before?" "How did you take the tour, on-site or from home?"*
- Open-ended questions: *"What are the shortcomings of the tour/things you would improve?" "What would you digitize to make the experience even more immersive?"*

Social media analytics: insights from Facebook and Instagram will be collected to monitor the number of interactions (likes, shares, comments). Screenshots and reports will be archived as evidence.

Web analytics: access statistics from the Aquileia Foundation's website (page views, unique visitors, time spent on page) will be recorded to measure online engagement.

KPI 4, Number of media mentions and press coverage of the pilot:

1. **Counting measurement**: The KPI will be evaluated by compiling a dissemination package containing:
   - Press articles and news
   - Online publications and URLs
   - Broadcast records that may come from radio, television, or podcast mentions.

   The target can be local, national, and possibly international coverage.

7.8 Risks

Risk Description	Corrective measures	S	O	D	R
Risk that prioritization and contextualization campaigns will not gather enough target audience content, failing to achieve the set KPI.	Strengthen communication in schools and with experts, using local social media. Provide visibility recognition (an academic one for the contextualization campaign).	7	6	8	8
Problems with accessibility to the virtual tour, which means that users who are not very familiar with technology may find it difficult to use.	Provide simplified functions.	7	5	6	5

Ethical and Legal Requirement Risks	Apply clear consent forms; use the DLT-based IPR Enabler for traceability and security and comply with what is described in *D6.2.5*	6	4	8	7
Post-project sustainability risk. At the end of the REEVALUATE project, the tour may lose its value in the medium to long term.	Maintain, update, and continue to promote the virtual tour and citizen participation.	6	7	7	5
Lack of interest in the experience and in the digital product	Development of an engaging and interactive product, in line with the requirements of the initial analyses and dissemination programme	6	5	4	5
Poor quality of digitised artefacts in terms of superficial and geometric properties and texture representation	Improvement during post-processing and 3D modelling	6	4	7	2
Bugs and interruptions during the use of the virtual experience	The tool will be tested several times and by different testers to diversify the quality checking	8	6	3	3

- S = Severity
- O = Occurrence
- D = Detectability
- R = Recoverability

Scale 1- 10 (1 = least, 10 = most), aligned with D6.2

7.9 Experiences from first pilot phase and changes to pilot plans

Following the end of the first phase, a second one has been planned, aimed not only at increasing the use of artefacts, but also at engaging a different target audience. Building on the results achieved during the initial activities, Phase 2 represents an important step in assessing the applicability and functionality of the enablers, which are designed to facilitate the inclusion of different target groups within a participatory framework.

Planned activities:

- Between mid-June/end of June 2026, a new Prioritisation Campaign will be launched using new artefacts from the collections of the National Archaeological Museum of Aquileia. These artefacts have been chosen based on their storytelling with the setting of the Domus, to ensure that they could add meaning and sense to the spatial narrative of the virtual tour. This activity will make use of the Prioritisation Enabler, whilst extending its application to new types of artefacts and a broader narrative framework. Launching a new Prioritisation Campaign will, in fact, allow Fondazione Aquileia to engage young people once again and create a tour increasingly based on their interests.
- Two new Contextualisation Campaigns will be developed during the same period, involving new target groups identified for this second phase of the pilot. These activities are necessary to meet the pre-set KPI of 25 “participants involved in the collaborative contextualisation

process", as the previous campaign involved five experts: two archaeologists and three university professors.

The first campaign will take place within the Archaeological Museum, involving contributions from the museum's staff and experts, and making use of digitised artefacts from the museum's collection, thus ensuring a clear, accurate, and meaningful contextualisation.

For the second one, students from the University of Udine (and Padua) are expected to take part, providing context for the five artefacts already used in the previous campaign. Their participation will allow the enabler to be used with people who have different levels of archaeological knowledge, but who are nonetheless familiar with the site. Their contribution will strengthen the educational and collaborative aspects of the project linking archaeological research and expertise with new forms of digital engagement. Furthermore, given the target audience, it will be necessary to organise dedicated events and working groups during June (and July), in collaboration with LINKS.

- At the same time, the second phase will also introduce additional features that were not initially included in the first implementation and testing cycle. The already included Context Validator Enabler will be tested and the AI Image-Based Enabler will be piloted for the first time as innovative component in addition to the originally planned activities. Their integration subsequently emerged as an interesting opportunity to explore new ways of promoting cultural heritage supported by artificial intelligence.
- Finally, during this second phase, the Marketplace will be used to support the creation of the final virtual tour of the Domus. By September 2026, the virtual tour of the House of Titus Macro will be completed and all the enablers planned for the second phase will have been tested within a richer and more diverse participatory and narrative framework.

8 Conclusions & Outlook

REEVALUATE is utilizing two separate pilot phases. The primary purpose of the first pilot phase was to ensure that the enablers provide the functionality required by the pilots and ensure that the pilots run smoothly, stable, well integrated and according to the needs of the CH partners and the requirements of the projects.

Following this first phase, feedback has been provided to the providers of the enablers, and the functionality of the enablers has been adapted, based on that feedback.

While some results contributing to the KPI evaluations have been collected in the first pilot phase, the core purpose of this activity was the establishment of suitable methods to collect the required information.

While the first version of the deliverable (D 4.1) was primarily targeted towards providing the initial plans for the pilots and mainly covered technical aspects of the pilot execution, the current deliverable provides the plans for the second pilot phase.

While the first pilot phase already included involving the general public, mostly as part of prioritization campaigns, pilots in the second phase will have a higher public visibility and are expected to result in more feedback from stakeholders within and outside of the Cultural Heritage Institutions involved, covering input from experts as well as the general public.

This feedback, collected as part of the activities in Task 4.6, will help the REEVALUATE project to evaluate the enablers, created in WP2 and WP3, and validate their usability and usefulness in a range of usage domains, from games, online social activities, on-site experiences and a traditional museum exhibit.